DigitalCommons
@WayneState

Wayne State University

Wayne State University Dissertations

1-1-1997

Maternal grief reactions to their children's birth defects: factors influencing grief resolution

John W. McCaskill

Follow this and additional works at: http://digitalcommons.wayne.edu/oa_dissertations

Recommended Citation
McCaskill, John W., "Maternal grief reactions to their children's birth defects: factors influencing grief resolution" (1997). *Wayne State University Dissertations.* Paper 1193.

This Open Access Dissertation is brought to you for free and open access by DigitalCommons@WayneState. It has been accepted for inclusion in Wayne State University Dissertations by an authorized administrator of DigitalCommons@WayneState.

MATERNAL GRIEF REACTIONS TO THEIR CHILDREN'S BIRTH DEFECTS: FACTORS INFLUENCING GRIEF RESOLUTION

by

JOHN W. McCASKILL, IV

DISSERTATION

Submitted to the Graduate School

of Wayne State University

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

1997

MAJOR: PSYCHOLOGY (Clinical)

Approved by:

Advisor 9/19/97 Date

Shauna Tindall

Melissa Kaplan-Estrin

Dedication

The work contained herein is dedicated to the loving memory of two of my grandparents, Ms. Helen Gray McCaskill and Mr. Arthur Bernshausen. They each passed away without being able to see this project, and an important milestone in the attainment of my professional goals, brought to earthly fruition. However, their lifelong interest, encouragement and personal pride in my pursuits continue to inspire faith and motivation. Most importantly, their indulgence, and even active support, of my childhood love of playing "bathroom scientist" facilitated my first efforts at making a game out of scientific inquiry, even as I decimated the contents of their medicine cabinets. I thank them for allowing me to develop an intellectual model which integrates curiosity, creativity and fun. Their spouses, and likewise my grandparents, Ms. Marjorie Miner Bernshausen and Mr. John W. McCaskill, Jr., have been inspirational models of adaptation and continuous forward progress. Their support for my endeavors has been unwavering and they will witness this goal attainment, which is an endless source of pride for me. I also want to honor the memory of my uncle Donnie Bernshausen, whose personality and pursuits modelled a genuine love of knowledge and self-development. In like mind, I wish to honor my parents, Ms. JoAnn B. McCaskill and Mr. John W. McCaskill, III, for enabling me to arrive at this juncture in my personal and professional journey. Their interest and assistance with my endeavors throughout my lifetime has enabled me to explore a variety of interests and enrichening activities. Their sustained support and encouragement of my efforts with this project never waned, even when mine did, and for that I am eternally grateful. My sister and brother-in-law, Ms. Janice Molina and Mr. Thomas Molina, are an ever-growing source of support and inspiration for me. I am proud to be a member of both professional and personal ranks with folks like them. By my niece, Jamie Lauren Molina, I am reminded to appreciate the basic qualities of what it means to be human and of the need to remain a child at heart. I cannot even begin to sufficiently thank the rest of my relatives and good friends for continuing to offer interest and encouragement over the years. Over the years, those close to me developed the personal sensitivity to occasionally ask, "How's it going?", rather than, "So, <u>when</u> will you be done with school?" at our family gatherings. The Stoltz family offered much-appreciated interest, encouragement and faith along the way. I want to thank my uncle Larry Bernshausen for providing an early model of academic curiosity, and for stimulating much of my own curiosity. I am indebted to my uncle David Bernshausen for saving my life, and for always providing love and support when the chips were down. I would not even have been here, much less have completed a doctorate, were it not for David's crisis intervention skills. Words cannot even begin to express my gratitude for my beloved fiance', Dr. Pamela Anne Bukowski. I have always felt that our two souls found each other, connected, and guided each other through a demanding and confusing time in each others' lives, only to emerge stronger and more complete as individuals, friends and partners. Pam has patiently and supportively endured my "marriage" to this project for most of our relationship thus far -- for that, I say, "Thank you." Now, it's time for a new road, a new journey, a new chapter in our lives together. I'm proud to walk hand-in-hand with such a woman. To my new family and friends, and in-laws-to-be, the Bukowski family (Ron, Nancy, Kim and Ron, Jr.), I am indebted to your generosity, consideration and support. There is no way this project, my internship, and our move to Florida would have occurred without your help. Throughout the year, you welcomed me into your family with open arms, and for that I am grateful. Finally, my dedication would be horribly incomplete without special thanks to my "comrades in arms" regarding all matters personal, professional, practical, philosophical and spiritual: Dr. Craig Bach, "Doctor-To-Be" David Modders, Mr. Lynn Morren, Ms. Leslie Murden Roberts, Mr. John Roberts, Dr. Tina B. Smith, Ms. Anne B. Spacht, and Mr. Mark Spacht. Through our friendships, stimulating discussions, and sacrilegious humor, I have derived more emotional respite than you could imagine. I hope I can even begin to return the favor. I have truly been blessed with friendships that transcend both time and distance. Finally, I dedicate this work to the memory of Sifu Bruce Lee, from whose accomplishments and teachings I have derived much insight and inspiration. Sifu Lee has modelled continuous processes of exploration, experimentation, refinement and integrity. His admonition, "Absorb what is useful, reject what is useless, and add specifically what is your own" embodies pure eclecticism in all matters professional, personal, recreational and spiritual. I hope to always employ this paradigm as I develop my professional acumen, refine my personal style and strengthen my character. Regardless of the particular discipline or endeavor in which I am involved, I hope to honestly and passionately study as many different theoretical orientations and strategic applications for addressing questions, solving problems, and furthering my understanding of matters related to the human condition and natural science. The more I learn, the more I realize the limitations of our knowledge.

Acknowledgements

First and foremost, I want to express my gratitude to the children and families who volunteered their time to participate in this study, and without whom the study could not have been completed. I express my sincere appreciation to the staff at Children's Hospital of Michigan, Providence Hospital, Sinai Medical Center, and University of Michigan's Mott Children's Hospital who graciously allowed me to speak with their clients about the study. The following persons are singled out for special mention: Dr. Neal Alpiner, Barbara Beal, Dr. Alexa Canady, Dr. Virginia Delaney-Black, Eva Forman, Dr. Cheryl Hack, Dr. Doug Henry, Dr. Michael Nigro, Dr. Arlene Rozzelle, and Dr. Deborah Stanitski.

I have been truly fortunate to have worked with my dissertation advisor, Dr. Douglas Barnett. It is rare to find someone who fully embraces both the scientific and the artistic aspects of being a social scientist, but Dr. Barnett is one of those people. Through his mentorship, I have been inspired to thoroughly explore my interests and to think creatively about issues and problems, while adhering to rigorous methodological standards of scientific inquiry. Dr. Barnett enthusiastically encouraged me to pursue my dissertation topic, assisted me with conceptual issues, introduced me to colleagues with similar interests, and allowed me to develop my investigation as part of a larger project of his own. Dr. Barnett has also encouraged me, both by instruction and by example, to develop my professional

acumen as a well-rounded, integrative psychologist -- one devoted to the scientific method, using clinical work, research and teaching pursuits to inform one another. His values and orientations have influenced both my clinical and research activities. Dr. Barnett has also been an interested and supportive friend, as well as a mentor and colleague. The interaction of our mutually strong-willed personalities has at times proven stimulating, frustrating, invigorating or, most often, all of the above. Yet, in the end, I feel nothing but enrichened by our collaboration, and by our relationship.

I want to thank Melissa Kaplan-Estrin, Ph.D., for assisting me in teasing out many of the issues involved in conceptualizing and assessing grief resolution. I could not have completed this project without her supportive mentorship. Dr. Kaplan-Estrin was also very generous with her time and expertise in training me to conduct developmental assessments with the Bayley-II -- this is a very complex instrument to master, and Dr. Kaplan-Estrin proved to be a very insightful, encouraging, and patient teacher. Beyond the specifics of my project, I am grateful for Dr. Kaplan-Estrin's friendly collaboration as a colleague and her continuous emphasis on developmental issues.

I am eternally grateful to Brian Lakey, Ph.D. for his esteemed mentoring throughout, not only my dissertation research, but also my master's thesis and early clinical training. Through his provocative questions and insightful suggestions, Dr. Lakey provided invaluable guidance which helped to clarify conceptual issues and tighten my thinking. His integrity, professional acumen and emphasis on methodological rigor have influenced me tremendously. Through his supervision in matters both scholarly and clinical, Dr. Lakey has provided me with a personal and desirable model in the judicious application of the scientific method.

"Last, but not least" has become a cliche' in American vernacular; however, in this case, it is literal truth. I have enjoyed a relationship with Shauna Tindall, Ph.D., over the past seven years that has been both personally and professionally rewarding. As a member of my dissertation committee, Dr. Tindall has been nothing but supportive, encouraging, and stimulating. She encouraged me to pursue this project in the first place, assisted me in clarifying both conceptual and methodological issues, provided me with physical space to work, and assisted me in developing important collaborative and political contacts. She has always provided a much needed sense of humor and perspective when issues became overwhelming. Personally, Dr. Tindall has assisted me in developing my professional acumen by modeling the highest standards of integrity, due diligence, interpersonal sensitivity, thorough psychological conceptualizations, adherence to rigorous standards of scientific practice, and by expecting nothing less than the same from her student. My clinical work and my writing, both clinical and research-wise, have become more focused and efficient as a result of her tutelage. She went above and beyond the call of duty by offering mentorship in Bayley-II administration at her house on the week-ends. She was, to put it bluntly, very patient and flexible in allowing me to coordinate completion of this dissertation, completion of my pre-doctoral internship, and completion of a physical move from Michigan to Florida in preparation for my post-doctoral residency. There is no way all of these things could be accomplished, at exactly the same time, without her assistance. Finally, Dr. Tindall was pivotal in my discovery of the discipline of pediatric psychology by reaching out to inform me of a part-time position in a new project (at the time) at Children's Hospital involving comprehensive multi-disciplinary health care services for chronically ill children and their families -- a training diversion at the time that has since become a passionate career interest.

I am also indebted to Patricia T. Siegel, Ph.D. and to Cheryl Hack, M.D. for their encouragement and constructive suggestions as I began to conceptualize the central issues involved in this study, and for agreeing to sponsor the study at Children's Hospital. I am grateful to Kelli Hill-Hunt, M.A., Chris Butler, M.A., Donita Gelinas, R.N., Rebecca Tochet, M.S.W., Jill Kofender, B.A., Heather Chruschial, B.A., Raymond Small, Shannon Waroway and Miriam Walton for their advice, encouragement, technical assistance, friendship, and for generally modelling integrity and competency both as people and as colleagues.

Table of Contents

Literature Review

Overview

Having a child is typically regarded as a joyous experience for parents, characterized by pride and a sense of fulfillment, along with dreams and expectations for the future. However, the discovery that their child has a birth defect or some type of handicap can be traumatic for most parents. Parents' hopes and dreams for their children, along with parental views of themselves as capable and effective parents, may be challenged (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta, Marvin, Britner, & Borowitz, 1996).

Parental reactions to their child's handicaps have been described as being similar to grief in response to the death of a loved one. In the case of a child with birth defects, parents may grieve the loss of the "perfect" or "idealized" child (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta, Marvin, Britner, & Borowitz, 1996; Trout, 1983; Waisbren, 1980; Wright, 1976). Similar to responses to death, parents may react to the news that their child has a handicap with shock, disbelief, protest, sadness, anger, fear, resignation, or any combination of these experiences.

Parental adjustment involves coming to terms with their child's condition and resolving their grief reactions. Effective adjustment often involves some alteration in parental expectations for their child's capabilities and prognosis, and redefining their own roles as caregivers (Marvin & Pianta, 1996; Pianta et al., 1996). Parental adjustment has consistenty demonstrated strong functional relationships to the overall quality and consistency of caregiving (e.g., Belsky, 1984; Belsky & Isabella, 1988; Gowen, Johnson-Martin, Goldman, & Appelbaum, 1989). Therefore, parental adjustment may have important implications, not only for parental well-being, but also for the parent-child attachment relationship and children's long-term socioemotional evelopment.

However, factors accounting for individual differences in grief resolution are not well understood at this time. Previous studies of parental grief reactions (e.g., Pianta et al., 1996) have found no relation between child disability parameters (e.g., diagnosis, condition severity, developmental level, time since receiving diagnosis) and parental grief resolution. Other studies of parental stress related to caring for a handicapped child have found that: a) parents do not invariably experience increased levels of stress, and b) disability parameters are not consistently related to parental stress when it does occur (Thompson, Gil, Gustafson, George, Keith, Spock, & Kinney, 1994; Thompson, Gustafson, George, & Spock, 1994; see Wallander & Varni, 1992, for a review).

Borrowing from the personality and social psychology literature on stress and coping, some researchers recently have advocated a need to focus on psychosocial mediational processes (e.g., personality variables; attitudes, beliefs, and attributions related to the situation; coping orientations; subjective experiences related to parenting and social support) that may account for individual differences in parental stress and adaptation to their child's handicaps (e.g., Thompson et al., 1994a & b).

The current study examined factors that may predict parental grief resolution in 63 mothers of toddlers (ranging in age from 12 to 36 months) with neurological disorders and non-neurologically impaired craniofacial anomalies. Neurological and craniofacial disorders can present with a range of severity and prognoses for treatment. Factors examined, as they relate to maternal grief resolution, included those directly related to children's physical handicaps (i.e., disability parameters, such as functional impairment and physical appearance anomalies) and more personal coping resources that mothers may possess (i.e., psychosocial mediational factors). Demographic variables (e.g., ethnicity, SES, maternal age) were examined as factors potentially influencing parental stress and coping experiences. Specifically, guided by a psychosocial mediation model of parental adjustment to children's handicaps (e.g., Thompson et al., 1994a & b), this study examined the abilities of parental trait emotionality, negative self-referent cognitions reflected in dysfunctional attitudes related to parenting a child with birth defects, characteristic parental coping orientation, parental perceived hassles related to caregiving, and perceived social support to mediate the relationship between maternal grief resolution and child disability parameters and demographics.

In support of the proposed investigation, an overview of literature on parental reactions to their child's birth defects, with implications for parental well-being, caregiving, and child socioemotional development will first be presented. Following this, the conceptualization of parental reactions as grief will be described in more detail. Research pertaining to variability in parental stress and adjustment related to their child's birth defects will then be reviewed. Specifically, factors that may account for individual differences in parental grief and adjustment will be explored. Findings from research on stress-coping and personality are integrated with the clinical and pediatric psychology literatures in support of the psychosocial-mediational coping model to be tested. Shortcomings from previous research that will be addressed by the proposed project will be discussed as well. Specific hypotheses to be tested in support of the psychosocial-mediational model are then presented.

Background

Attachment theory (Bowlby, 1969, 1980) hypothesizes the existence of a "caregiving system" in parents. The caregiving system complements a child's attachment system so that on-going parent-child interactions function to protect the child from danger and optimally promote the child's development. Briefly, the caregiving system refers to an organized system of behavioral patterns (e.g., caregiving, social interaction) and psychological processes (e.g., attitudes about child-care and parenting; beliefs about child behavior and development; values, goals and expectations; emotional states, and beliefs about emotions) that characterize parenting. Parental cognitive processes (e.g., beliefs, expectations, inferences and attributions) and emotional experiences, particularly those related specifically to the child, can affect the quality of caregiving behaviors (e.g., sensitivity, reciprocity, responsiveness). Therefore, the integrity of parental psychological functioning in maintaining appropriate and optimally adaptive cargiving is of paramount importance for children's development (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969, 1980).

The caregiving system, and particularly parental self-efficacy related to parenting, may be challenged by a child's birth defects (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996). Parents' pre-birth fantasies, hopes, dreams, and expectations, both for their child and for their own experiences as a parent, may be challenged by this unplanned-for event (Waisbren, 1980; Wasserman, Seidman, & Allen, 1984). The period of time surrounding a parent's realization that their child has a handicap is typically regarded as a stressful one, to varying degrees (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996; Stein & Reissman, 1980). Parents may experience difficulties in coping with their child's needs, and integrating the child's needs with on-going personal and family needs. However, coping and eventual adjustment to the demands of the situation are essential for parental well-being, child development, and family integrity (Emde & Brown, 1978; Hanson & Hanline, 1990; Marvin & Pianta, 1996; Pianta et al., 1996; Shonkoff, Hauser-Kram, Krauss, & Upshur, 1992; Thompson et al., 1994a & b; Wallander & Varni, 1992).

Parents may experience a variety of reactions to the realization that their child has a birth defect or some type of handicapping condition. In previous studies of parental stress and adjustment, parents have described feeling shocked, overwhelmed and threatened by the news of their child's problems (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996). Other parental reactions include anger (at themselves, third parties, or both), frustration, confusion, anxiety, fear, helplessness, sadness, pessimism, and ambivalence (Blacher, 1984b; Hanson & Hanline, 1990; O'Sullivan, 1985; Waisbren, 1980). Many parents have described negative self-evaluation related to beliefs that they have "failed" in their duties as parents by somehow "causing" their child's condition, or by failing to prevent the birth defect to begin with (Nixon, 1990). Similarly, parents have described feeling guilty and ashamed, and have perceived their competence as a parent to be threatened (Emde & Brown, 1978; Marvin & Pianta, 1996; Trout, 1983;

Waisbren, 1980). Some parents have described feeling as if they are being "punished" for some existential or moral sin (Jaynes-Nicewander, 1989). Given these findings, it is apparent that parents may be emotionally vulnerable as they learn about their child's condition. The emotional intensity of this event may pose a risk to parents' long-term psychological well-being, depending on how successful they are at understanding and coming to terms with their unique and unexpected situation (Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996).

Higher levels of stress related to parenting have been identified in parents of handicapped children (Beckman, 1983; Friedrich & Friedrich, 1981; Hanson & Hanline, 1990; Hauenstein, 1990; Shonkoff et al., 1992). Parents of handicapped children also have reported higher levels of marital conflict and general interpersonal stress (Friedrich & Friedrich, 1981), lower levels of social support, reduced social/occupational mobility, and higher levels of psychological distress (Shonkoff et al., 1992), compared with parents of non-handicapped children.

Parental stress negatively affects, not only parental well-being, but also the quality of the parent-child relationship (Belsky, 1984; Belsky & Isabella, 1988). Parents of handicapped children have reported feeling less satisfied with the parent-child relationship, more ambivalent toward their child, less warm and affectionate toward their child, more helpless and frustrated with their child, more confused by their child's behavior and needs, and less confident in their abilities as parents (Brooks-Gunn & Lewis, 1984; Gowen, Johnson-Martin, Goldman, & Appelbaum, 1989; O'Sullivan, 1985; Rees, Goldman, Stron, & Wurster, 1984). Concurrently, parents of handicapped children have reported perceiving their child to be less responsive to them and less reinforcing during parent-child interactions (Frey, Greenberg, & Fewell, 1989; Stoneman, Brody, & Abbott, 1983).

Parenting stress and disruptions in the caregiving system have been linked with impaired caregiving behaviors (e.g., decreased sensitivity, consistency, and responsiveness) during parent-child interactions (Brooks-Gunn & Lewis, 1984; Rees et al., 1984). Parental uncertainty, frustration and helplessness related to their child's condition, both in terms of immediate management and long-term prognosis, have been linked with caregiving difficulties (Breslau, Staruch, & Mortimer, 1982; Gowen et al., 1989; Krauss, 1993; Stein & Reissman, 1980). Parental self-blame related to the child's condition has been linked with both caregiving difficulties and parental depression (Jaynes-Nicewander, 1989; Nixon, 1990). Maternal mood disturbance has been systematically linked with more asynchronous parent-child interactions (Belsky & Isabella, 1988; Isabella et al., 1989; Pianta, Sroufe, & Egeland, 1989).

Parental psychological distress, insensitive or inadequate caregiving, and asynchronous parent-child interactions have all been identified as risk factors for children's developing insecure attachments, both in handicapped and non-handicapped samples (Ainsworth, et al., 1978; Isabella et al., 1989). Parental mood disturbance affects both the overall affective quality of parent-child interactions, as well as specific parenting behaviors that shape the quality of parent-child relationships (Belsky, 1984; Belsky & Isabella, 1988; Isabella et al., 1989). Moreover, infants demonstrate negative affective and behavioral reactions to maternal psychological distress that transcends discrete interactions (Cohn & Tronick, 1983; Seiner & Gelfand, 1995). Caregiving that is non-contingent, insensitive, and inconsistent has been related to the development of insecure attachments via the promotion of asynchronous patterns of parent-child interaction (Ainsworth et al., 1978; Bowlby, 1969, 1973, 1980; Isabella & Belsky, 1991; Isabella et al., 1989).

The attachment relationship serves as a primary coping resource for infants and toddlers, and it constitutes the general socioemotional climate in which child development occurs (Bowlby, 1969, 1973, 1980; Nachmias, Gunnar, Mangelsdorf, Parritz, & Buss, 1996; Sroufe & Waters, 1977). Secure attachment relationships have been related to the development of more effective emotion regulation (Cassidy, 1994), problem-solving skills (Easterbrooks & Goldberg, 1990; Matas, Arend, & Sroufe, 1978), and interpersonal relationships (Belsky & Cassidy, 1994; Park & Waters, 1989; Sroufe, Fox, & Pancake, 1993; Teti & Ablard, 1989). Insecure attachment has been related to a greater incidence of behavior problems (Lyons-Ruth, Alpern, & Repacholi, 1993; Speltz et al., 1990) and loneliness (Berlin, Cassidy, & Belsky, 1995) in early childhood.

A wealth of research suggests that parent-child interaction patterns, and ultimately attachment quality, are influenced more by parent practices than by child factors (e.g., van Ijzendoorn et al., 1992). The development of a secure attachment has been related to a history of sensitive, contingent caregiving (Belsky, 1984; Belsky & Isabella, 1988; George & Solomon, 1989; Radke-Yarrow et al., 1985). On the other hand, caregiving that is insensitive to the child's needs or that is not contingent on child cues has been linked with a higher risk of developing an insecure attachment. Infant temperament may influence the overall "tenor" of attachment expression (e.g., emotionally and behaviorally subdued vs. highly irritable, reactive, and clingy); however, caregiving patterns tend to influence attachment security/insecurity (Belsky & Isabella, 1988; Isabella & Belsky, 1991; Isabella et al., 1989). In fact, aspects of parental personality measured <u>prenatally</u> have predicted infant attachment at 12 months of age, but infant temperament measures typically are not prospectively related to attachment (Belsky & Isabella, 1988; Fonagy, Steele, & Steele, 1991).

Studies of attachment in children with birth defects support the hypothesis that parental factors more strongly influence attachment security than do child factors. Many studies have found no differences between attachment pattern distributions observed in samples of handicapped or chronically ill children, compared with normative samples (e.g., Plunkett, Meisels, Stiefel, Pasick, & Roloff, 1986; Wasserman, Lennon, Allen, & Shilansky, 1987). Wasserman et al. (1987) noted that child developmental quotient (DQ) was positively related to secure attachment, but that maternal caregiving behaviors were related to attachment regardless of child DQ. Compared with normative samples, Plunkett et al. (1986) found a slightly increased likelihood of insecure attachments (45% vs. 35%) in infants with severe respiratory illness (along with severe birth prematurity and very low birth weight), but no differences in infants without respiratory illness (who were also born prematurely and with low birth weight). However, even in the severe-illness group, over half the infants had developed secure attachments. Therefore, the mere presence or absence of child health problems may be insufficient for disruptions to the parent-child relationship (Plunkett et al., 1986). Meta-analyses of attachment studies, including samples with both child and maternal clinical problems, indicate that maternal problems (e.g., psychological distress, substance abuse, maltreatment) are associated with an increased risk of insecure attachment, while cases involving only child problems (e.g., developmental delays, sensory and/or motor handicaps) do not evidence significant differences in attachment distributions (van Ijzendoorn et al., 1992).

Parental psychological disturbance poses a risk to children's development via caregiving and the parent-child relationship. Therefore, effective psychological adjustment to the trauma of having a child with birth defects may be of similar importance in promoting optimal parental well-being, parent-child relationships, and child socioemotional development.

Grief Experiences

Parental reactions to learning about their child's handicaps have been described as grief related to the loss of the "perfect", "hoped-for" or "idealized" child (Blacher, 1984; Emde & Brown, 1978; Klass & Marwit, 1988; Marvin & Pianta, 1996; Pianta et al., 1996; Trout, 1983; Waisbren, 1980; Wright, 1976). In order to fully accept this hypothesis, parental reactions first must be compared with what is known about grief related to the loss of a significant relationship by death.

Grief has been described as a disruption of attachment (Bowlby, 1980; Weiss, 1983), as it characterizes a person's reaction to the perceived loss of a relationship and the sense of security associated with this relationship. Feelings of depression and anxiety are common to grief; however, what appears to discriminate grief from more general psychological distress is a phenomenon referred to as the "pangs of grief" (Bowlby, 1980; Middleton & Raphael, 1992; Parkes, 1972, 1985). Specifically, grief reactions often involve initial shock, feelings of numbness, and disbelief that the loss has occurred, followed by some form of "searching" for the lost person. Search activities can include physically looking for the person, but most commonly involve protest, "pining" over the loss, or "yearning" for the person's return.

Individual grief reactions can vary in their form, intensity, and duration. However, studies of grief have identified commonly-reported "phases" of grief reactions, including shock and disbelief; emotional disorganization (including anger, guilt, and disillusionment); and gradual adjustment and acceptance (Blacher, 1984b; Bowlby, 1980; Brown & Stoudemire, 1983; Emde & Brown, 1978; Marvin & Pianta, 1996; Middleton & Raphael, 1992; Pianta et al., 1996; Trout, 1983; Wright, 1976). Contrary to clinical lore that "normal" grief reactions invariably conform to the sequence described above and that "healthy" adjustment involves progression through each of these phases in a sequential order, the few empirical studies that exist note that individuals experience a variety of grief reactions (Marwit, 1996; Miles & Demi, 1994). A person may describe reactions characteristic of any of these phases at any given time; reactions common to more than one phase may be experienced simultaneously; or a person might cycle through phases more than once (Blacher, 1984; Bowlby, 1980; Brown &

Stoudemire, 1983; Emde & Brown, 1978; Marvin & Pianta, 1996; Middleton & Raphael, 1992; Miles & Demi, 1994; Pianta et al., 1996; Trout, 1983; Wright, 1976).

A key component of grief appears to involve disruption of an individual's mental representations of their relationship with the lost person (Bowlby, 1980; Emde & Brown, 1980; Marvin & Pianta, 1996; Pianta et al., 1996; Weiss, 1983). Representations that reflect one's understanding of the relationship and its personal significance (i.e., beliefs, attitudes, expectations, and emotions relating to the self and the other person) are challenged by the loss. Therefore, effective adaptation to the loss appears to involve a "re-working" of these internal representations as an individual reorganizes their understanding of the world and their relation to it, as they adapt to the absence of the lost person (Bowlby, 1980; Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996; Weiss, 1983).

Effective resolution of grieving involves changes that appear to reflect this reorganization of internal representational systems (Bowlby, 1980). For the most part, search activities are ceased, the loss is accepted as permanent, an orientation to the realities of daily living is maintained, and a return to baseline psychological functioning is established (Bowlby, 1980; Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996). On the other hand, unsuccessful grief resolution essentially appears to involve the failure to effectively integrate the experience and re-work one's internal representations of the relationship. Unresolved grieving is often characterized by more-or-less active searches for the lost person (including the belief that the person will return), cognitive distortions about the experience (such as the belief that the loss really did not occur), preoccupation with the loss to the detriment of daily functioning, and mood disturbance (Bowlby, 1980; Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996).

Parental reactions to learning that their child has a birth defect or handicapping condition are descriptively similar to grief in response to a person's death (Blacher, 1984b; Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996; Trout, 1983; Waisbren, 1980; Wright, 1976). Parents describe feeling shocked and overwhelmed at first, with some degree of disbelief that the event is actually occurring and emotional "numbing" as they attempt to comprehend what is happening (Marvin & Pianta, 1996; Pianta et al., 1996). A variety of emotional responses are reported in the literature: anxiety, including fear and panic; anger, particularly toward persons perceived to be responsible for the child's condition, including health-care professionals and parents themselves; sadness, helplessness, pessimism, or disillusionment; and shame and guilt related to feeling partially or completely responsible for the child's condition, as well as feelings that they have somehow "failed" in their parenting duties (Blacher, 1984b; Emde & Brown, 1978; Jaynes-Nicewander, 1989; Marvin & Pianta, 1996; Miles & Demi, 1994; Nixon, 1990; Pianta et al., 1996; Waisbren, 1980).

Research on parental reactions to stillbirth is one area of research that may link the domain of parental reactions to their child's birth defects with studies of traditional grief reactions. Mothers commonly report feelings of shame and self-blame related to their child's stillbirth, regardless of any objective causes for the condition (Raphael, 1983). It is also common for mothers of stillborn children to blame health-care professionals for the condition, and to perceive them as providing little support or assistance in coping with the situation, again regardless of what may objectively occur (Condon, 1986).

As noted above, parental psychological disturbance has been related to increased difficulties with caregiving, negative parent-child interactions, and an increased incidence of socioemotional problems in children (Bugental, 1987; Field, 1995; George & Solomon, 1989). Disruption of the caregiving system by parental psychological disturbance is hypothesized to be a causal mechanism linking parental functioning with child development problems (Belsky, 1984; Belsky & Isabella, 1988; Main & Solomon, 1990). More specifically, parental unresolved loss has been systematically linked with an increased likelihood of children's development of an insecure attachment to that parent (Marvin & Pianta, 1996; Pianta et al., 1996). Mothers' continuing psychological disturbance related to the loss of a parent (or other primary caregiver) during their own childhood has been systematically related to insecure attachments in their children (Ainsworth & Eichberg, 1991; Lyons-Ruth et al., 1991; Main & Hesse, 1990; Main & Solomon, 1990). Mothers' unresolved trauma related to severe neglect or abuse has also been related to their own children's tendency to develop an insecure attachment with them.

It is important to note that it is not simply mothers' experience of trauma or loss, but rather mothers' failure to adequately resolve emotional trauma and adjust to the experience that appears to be the key link with children's development of insecure attachments (Main & Hesse, 1990). Mothers' unresolved grieving has been related to an increased risk of insecure attachments in their children; however, the presence of trauma/loss, but with adequate psychological resolution of this issue, has been linked with children's development of secure attachments (Ainsworth & Eichberg, 1991; Main & Hesse, 1990). In other words, mothers' incomplete re-organization of the internal representations related to the trauma, and subsequent adjustment difficulties, appear to interfere with their current psychological functioning and, more specifically, disrupt the caregiving system. Presumably, this is because the core of the caregiving system is based in mothers' histories of caregiving with their own parent(s) and experiences with other significant relationships (Bowlby, 1969, 1973, 1980; Main & Solomon, 1990; Marvin & Pianta, 1996). These historical experiences are believed to form "models" which guide current caregiving interactions. Therefore, failure to adequately adjust to early disruption to these models would increase the risk of current difficulties in response to similar traumatic events.

Assessment of parental unresolved loss, as this relates to the caregiving system and child attachment, has been based on parental responses to the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985). The AAI is a semi-structured interview about adults' conceptualizations of both relationships with their own parents and their current significant relationships. As such, the AAI reflects adult's attachment representations by assessing episodic recall of parents' early caregiving experiences with their own caregivers, and examines continuity between representations of these early experiences and current relationships. Possible links between internal representations and manifest behavioral patterns are thus possible. The AAI has enabled reliable classification of parents' unresolved loss experiences and current attachment representations (Ainsworth & Eichberg, 1991; Main & Hesse, 1990; Main & Solomon, 1990). Both parental attachment styles and loss experiences have been systematically linked with their own children's attachment styles (Ainsworth & Eichberg, 1991; Lyons-Ruth et al., 1991; Main & Hesse, 1990;

Main & Solomon, 1990).

Empirical studies are supporting the conceptualization of parental responses to children's handicaps as grief experiences. Based on attachment theory conceptualizations of grief, and patterned after the Adult Attachment Interview, Pianta, Marvin, and their colleagues (Marvin & Pianta, 1996; Pianta, Marvin, Britner, & Borowitz, 1996) have developed reliable methods for assessing parental grief reactions to the event of learning about their child's handicaps (the Reaction to Diagnosis Interview; RDI) and then classifying these reactions in terms of grief resolution (Reaction to Diagnosis Classification System; RDICS). The RDI is a semi-structured interview that probes for episodic recall of the event, including emotional, cognitive and behavioral reactions; examines subsequent and current coping efforts; and assesses any changes in the parent's psychological functioning since the event.

Based on the RDI, resolved grief is characterized by coherent discussion of the traumatic event (i.e., first learning of the child's birth defects or handicaps), recognition of positive changes in general emotional status and coping since the event, an active emphasis on reality and current coping, relatively accurate perceptions of the child's capabilities and needs, and acknowledgement of any emotional ambivalence toward the child (Bowlby, 1980; Marvin & Pianta, 1996; Pianta et al., 1996). These features suggest that mental representations of self, child and the parent-child relationship have been adaptively adjusted, and that the traumatic event itself has been integrated into current mental representations (Bowlby, 1980; Marvin & Pianta, 1996; Pianta et al., 1996). As such, the event is available to executive mental processes, and thus parents are able to effectively monitor and regulate their coping processes, and flexibly access and discuss their memories.

Conversely, lack of grief resolution is marked by a variety of indices suggesting extremes in emotional experiences and disruptions to current psychological functioning. For example, a parent may insist that they are unable to recall the event and related details, or they may be overly preoccupied with details while discussing the event; a parent may exhibit a notable absence of affect related to the subject, or a tendency to become emotionally overwhelmed to the point that the flow of discussion is disrupted (their train of thought may be lost altogether); there may be a tendency to utilize <u>present tense</u> while speaking about the past; or a parent's responses to questions may be disorganized, tangential or completely incoherent (Bowlby, 1980; Marvin & Pianta, 1996; Pianta et al., 1996).

The RDICS enables a major category classification (Resolved or Unresolved Grief) as well as a sub-classification within each major category. These sub-classifications describe the particular manifestation of parental grief experiences, including the predominant coping styles utilized by parents. Within the Resolved category, three different presentations have been identified: 1) Thinking-Oriented, 2) Feeling-Oriented, and 3) Action-Oriented. Within the Unresolved category, the following presentations have been identified: 1) Emotionally Overwhelmed, 2) Angrily Preoccupied, 3) Neutralizing, 4) Depressed or Passively Resigned, 5) Distorting, and 6) Confused. The majority of parents classified as resolved with respect to grief have thus far demonstrated thinking-oriented resolution styles (Marvin & Pianta, 1996; Pianta et al., 1996). However, no particular sub-classification has predominated in cases of unresolved grieving.

Consistent with previous research linking parental attachment representations and unresolved loss to their children's attachment classifcations, research using the RDI has systematically linked parental grief reactions to their child's handicaps with children's attachment patterns. Specifically, maternal grief resolution has been related to the likelihood that children will develop a secure attachment (Marvin & Pianta, 1996; Pianta et al., 1996). Unresolved maternal grief has been linked with an increased risk of children's developing an insecure attachment.

The categorical approach enlisted by the RDICS may have some important limitations. The classifications are essentially descriptive in nature, reflecting the primary presentation of grief syptomatology and coping strategies. However, features of both "resolved" and "unresolved" grief are expected to be present in most interviews (Marvin & Pianta, 1996; Pianta et al., 1996). The major classifications of Resolved/Unresolved grief refer to the particular configuration of features in parental responses, and thus reflect the general predominance of features suggesting either resolution or lack thereof. However, the literature on grief and coping suggests that resolution may actually be an on-going process for many years (Bowlby, 1980; Marwit, 1996; Middleton & Raphael, 1992; Miles & Demi, 1994; Sanders, 1983; Zisook & DeVaul, 1985). Moreover, the presence of grief symptomatology, including both the intensity and frequency of symptoms, may vary over time (Blacher, 1984b; Emde & Brown, 1978; Marvin & Pianta, 1996; Waisbren, 1980). Therefore, examination of grief resolution as a continuous variable may afford a better look at factors that may facilitate (or hinder) grief resolution.

The literature on grief related to death suggests that normal, or uncomplicated, grief reactions may last upwards of 1-2 years or more (Marwit, 1996; Middleton & Raphael, 1992; Sanders, 1983; Zisook & DeVaul, 1985). Moreover, the presentation of grief symptomatology may fluctuate as an individual works to regulate self-evaluation and affective experiences, come to terms with the loss, and cope with the demands of reality (Horowitz et al., 1979; Sanders, 1983). Some studies suggest that grief may never completely abate, but that the intensity and frequency of sypmtomatology may gradually decrease to the point that a person is able to function without significant disruption (Bowlby, 1980; Marvin & Pianta, 1996; Middleton & Raphael, 1992; Parkes, 1972, 1985; Pianta et al., 1996; Wright, 1976; Zisook & DeVaul, 1985). Occasional "episodes" of recurrent grief, triggered by stimuli associated with the lost person (e.g., their birthday, the anniversary of the loss, significant holidays that were shared with the lost person), have been identified as much as 10 years post-loss in persons who otherwise had adapted to the loss and were functioning effectively in their daily lives (Zisook & DeVaul, 1985).

Therefore, the existing literature suggests that grief resolution may actually reflect an adjustment process that eventually reaches an overall satisfactory or functional state. As such, factors that influence a parents' adjustment process (e.g., personality traits, coping styles and resources) would most likely be instrumental in facilitating grief resolution that is both timely and effective. Further, since attachment theory suggests that parental grief responses will be influenced by individual difference variables (e.g., personality factors; coping resources; attributions and expectations related to parenting, relationships and self-efficacy), an examination of such factors that may influence grief resolution is important.

Factors Related to Grief Resolution

Parental grief reactions to their child's handicaps is an emerging area of empirical study. At this time, little is known about factors that may account for individual differences in grief resolution (Marwit, 1996; Miles & Demi, 1994; Sanders, 1983). Although the phenomenon of grief has been discussed theoretically for at least 30-40 years (e.g., Bowlby, 1980; Emde & Brown, 1978; Green & Solnit, 1964; Trout, 1983; Waisbren, 1980; Wright, 1976), scant empirical findings have emerged to date (Marwit, 1996). However, substantial bodies of literature have accumulated comparing differences in levels of parenting stress and general psychological distress in parents of handicapped children, compared with parents of non-handicapped children (e.g., Crnic and Greenberg, 1990). In order to identify factors that may account for individual differences in parental grief reactions, a brief review of factors related to differential parental stress levels is in order.

Child Disability Parameters

It has historically been assumed that parents of handicapped children would experience more stress related to caregiving than parents of non-handicapped children (Beckman, 1983; Friedrich & Friedrich, 1991; Hanson & Hanline, 1990; Hauenstein, 1990). By the same token, an assumption has been made that parents of handicapped children would also experience higher levels of psychological distress. However, this has not invariably been the case (Frey et al., 1989; Kazak & Marvin, 1984; Kruekeberg & Kapp-Simon, 1993; Thompson et al., 1994a, 1994b; Wallander et al., 1989a, 1989b, 1989c). Based on the assumption that difficulties in caring for a handicapped child (including both understanding and practically managing the condition) would be causally related to parental psychological distress, many studies have examined specific child characteristics that may be related to parenting stress (e.g., Frey et al., 1989; Stoneman et al., 1983).

As discussed above, various studies have identified higher levels of psychological distress and difficulties related to caregiving in parents of handicapped children. However, many other studies have found that variability in parental stress/distress levels does not differ between samples of handicapped and non-handicapped children (e.g., Frey et al., 1989). Therefore, the available literature suggests that initial discovery of a child's birth defects may indeed be a traumatic event for parents, but one that does not necessarily bode poorly for parents' long-term psychological adjustment (Thompson et al., 1994a, 1994b; Wallander & Venters, 1995).

The overall severity of a child's condition has been examined as one disability parameter that may influence parental stress and psychological adjustment (Beckman, 1983; Jessop et al., 1988; Lustig et al., 1996; Stein & Reissman, 1980; Shonkoff et al., 1992). A distinction has been made between two indices of condition severity: 1) Biological Severity, which refers to biological aspects of a child's handicap, such as the particular biological system(s) affected and the extent of systemic involvement; and 2) Functional Severity, referring to the functional implications of a child's biological condition (Stein et al., 1987). Functional severity more specifically refers to the extent to which a child requires assistance in regulating arousal states and performing activities of daily living, or ADL's (e.g., feeding, sleeping, emotion regulation, communication, mobility, and performing self-care activities). Therefore, functional severity reflects aspects of the condition that may make it harder for parents to care for a child (Breslau et al., 1982).

In general, functional severity parameters have demonstrated stronger relationships with parental stress/distress than have biological parameters (Breslau et al., 1989b; Lustig et al., 1996; Stein et al., 1987). However, even using these more specific definitions of handicap severity, findings have been inconsistent. Some studies have found that children's overall level of mental development (a functional parameter) to be negatively correlated with parental stress and positively correlated with caregiving that is more sensitive, responsive, and contingent (Dunst & Trivette, 1986). Other studies have found a child's mental development to be negatively correlated with responsive caregiving practices (Brooks-Gunn & Lewis, 1984). At least one study has found that the extent of birth prematurity (a biological parameter), but not mental development level, was positively related to parental stress levels (Krauss, 1993). Child communication, responsiveness and sociability (parameters defined positively as functional abilities) have been negatively correlated with parental stress (Frey, Greenberg, & Fewell, 1989; Mullens, 1992), caregiving difficulties and maternal depression (Gowen et al., 1989). Parameters defined negatively as functional disabilities, such as the extent of a child's need for assistance in completing ADL's (Breslau et al., 1989a, 1989b), need for NICU services in the neonatal period (Forsyth et al., 1996), and the frequency/extent of current ancillary therapy usage (Plunkett et al., 1986), all have been positively linked with parents' perceived caregiving difficulties, overall parental stress levels, and parental psychological distress. When both functional and biological severity parameters have been examined simultaneously, the extent of a child's functional impairment has been found to be predictive of parental psychological distress, while biological severity parameters were unrelated to parental distress (Canning et al., 1996; Stein et al., 1987).

Demonstrated relationships between handicap severity, particularly functional severity, and parental stress/distres have not been straightforward. While condition severity has demonstrated some positive correlations with parental stress/distress, some curvilinear relationships have also been identified (Daltroy et al., 1992; Pianta et al., 1996). Pianta et al. (1996) found more psychological adjustment difficulties in mothers of children with moderately severe neurological handicaps, but mothers of children with mild or very severe conditions demonstrated better overall adjustment. Conversely, Daltroy et al. (1992) found more adjustment difficulties in mothers of children with mild conditions, with better overall adjustment observed in mothers of children with both moderate and severe conditions.

Given the inconsistent findings linking parental stress/distress with child handicap severity, attention has turned to examination of subjective parental experiences related to their child's condition (Gowen et al., 1989; Krauss, 1993; Thompson et al., 1994a, 1994b). It has been suggested that parental perceptions, or subjective experiences related to their child's condition, mediate the relationship between handicap severity and parental adjustment (Jessop, Reissman, & Stein, 1988; Lustig et al., 1995; Wallander & Venters, 1995; Wallander et al., 1989a, 1989b). Perceived role restriction has been defined as the extent to which a parent attributes limitations in their social-occupational mobilitity to their child's condition and caregiving needs (Breslau et al., 1989b; Wallander & Venters, 1995). In studies examining the relative contributions of disability parameters and maternal perceived role restriction, both disability type and child mental development level have been unrelated to maternal distress, but perceived role restriction was strongly related to distress (Breslau et al., 1982; Wallander & Venters, 1995). Moreover, perceived role restriction has been linked with both greater child dependence for performing ADL's and lower overall levels of parent satisfcation with the parent-child relationship (Breslau et al., 1989a, 1989b). Therefore, more proximal and subjective aspects of caregiving appear to be more strongly linked with parental stress and psychological adjustment.

As discussed above, parental factors have been more strongly linked with parental stress, caregiving difficulties, disruptions to the parent-child relationship, and child development problems than have child factors (Belsky, 1984; Belsky & Isabella, 1988; Van Ijzendoorn et al., 1992). Mothers' subjective experiences (e.g., perceived child competence, acceptability of the child to the parent, feeling warmth toward the child, perceived reinforcement from the child, and satisfaction with the parent-child relationship) have been linked with maternal responsiveness, while objective child characteristics were unrelated to caregiving practices (Onufrak et al., 1995). Maternal subjective appraisals of their child's overall psychological adjustment and attributions about the cause of their child's condition have been shown to mediate the relationship between child functional level and maternal psychological distress (Dadds et al., 1995). Mothers' perceived control over their child's condition (both in terms of treatment prognosis and their ability to effectively care for the child on daily basis) has been negatively related to maternal stress related to caregiving (Gowen et al., 1989;

Krauss, 1993). Therefore, even more than functional implications of children's handicaps, factors that influence parents' subjective experiences related to their child's condition appear to be important in understanding parental psychological adjustment to their child's condition.

Individual Difference Factors Related to Grief Resolution

Research on parental grief reactions to children's handicaps is rooted in an early observation of the "vulnerable child syndrome" (Green & Solnit, 1964). Parents' initial attributions about their child's condition (relating to its cause and implications) and emotional reactions have been shown to affect both parent and child long-term adjustment, regardless of objective indicators of children's progress. For example, parents of children who survived a supposedly terminal health problem at birth have expressed more long-term concerns about their child's health and sought preventive treatment for their children more often than parents whose children had not received these negative prognoses at birth (Forsyth et al., 1996). Moreover, children who survived apparently terminal birth conditions and matured into older children/young adolescents exhibited higher rates of behavior problems, regardless of their concurrent health status.

The clinical literature on "traditional" grief (i.e., grief related to death) has identified some factors that may be related to individual differences in grief resolution. However, these findings have been primarily theoretical in nature, based on clinical case studies and informal observations of bereaved individuals. While empirical verification is clearly required, informal observations such as these at least provide a starting point for empirical investigations.

It has been suggeseted that extreme initial emotional reactions at the time of loss might be related to difficulties with grief resoultion, operationalized as higher levels of psychological distress and on-going grief symptomatology more than one to two years after the loss (Marwit, 1996; Sanders, 1983). Further, it has also been suggested that higher levels of neuroticism, or trait negative affectivity, may also be related to complicated grieving (Costa & McCrae, 1990; Sanders, 1983). Higher levels of trait negative affectivity (characterized by feelings of inferiority, inadequacy, guilt, sadness, anxiety, or anger) may predispose an individual to more intense negative emotional reactions to stressful events such as loss (Watson & Clark, 1984).

It has been noted that an individual's cognitive appraisals about the circumstances surrounding a loss (e.g., causal attributions; inferences regarding the existential meaning of the event) may be related to long-term adjustment outcome (Middleton and Raphael, 1992; Miles and Demi, 1994). For example, individuals experiencing complicated bereavement have reported beliefs that a death may have been preventable (Miles and Demi, 1994) or that it was the result of possible mismanagement by caretakers and/or health-care professionals (Middleton and Raphael, 1992), regardless of the more objective circumstances surrounding a loss.

The grief literature has also suggested that coping styles and psychosocial coping resources may be related to grief resolution. Excessive tendencies to engage in coping activities that are avoidant in nature (e.g., denial; minimization of the emotional impact of the event; refusal to discuss the event or address issues related to the event, such as making pragmatic lifestyle changes) have been related to difficulties in resolving grief and greater psychological distress over time (Horowitz et al., 1979; Raphael, 1983; Roth and Cohen, 1986; Stroebe and Stroebe, 1987). However, as will be elaborated below, excessive engagement in "approach" coping activites (e.g., active consideration of the event, discussion of the event, instrumental activity directed at changing the event) may also be related to long-term adjustment difficulties (Klass & Marwit, 1988; Rando, 1993; Waisbren, 1980).

Social support has been identified as a factor that may modulate negative affect and facilitate more effective grief resolution. Reports of lower levels of social support have been related to complications in grief resolution and higher levels of psychological distress (Klass & Marwit, 1988; Rando, 1993; Waisbren, 1980). However, the grief literature has not tended to distinguish perceived social support from enacted social support (see Barerra, 1986, for a review of these topics). Rather, the assumption is typically made that actual supportive or helping behaviors by others will modulate an indivual's grief. However, the relation between social support and psychological well-being is not altogether straightforward, a topic that will be elaborated below. The presence of additional life stressors (e.g., strained social relationships, job or wage loss, social isolation, poverty) have been identified as factors that may complicate efforts at grief resolution and adaptation to loss (Sanders, 1983).

Studies of adjustment to both interpersonal loss and to the birth of a child with handicaps have suggested that much coping activity entails efforts to cognitively reframe the event, to find some meaning in the event, or to attain mastery over the experience (Affleck et al., 1985; Klass & Marwit, 1988). Cognitive coping in the form of adopting contextually appropriate standards for evaluating both a child's progress and one's own coping efficacy have been identified in cases where mothers have resolved their grief related to their child's diagnosis (Pianta et al., 1996). Parental attributions that their child's handicaps were potentially preventable have been linked with increased levels of parental psychological distress (Bugan, 1979). Other studies have suggested that parental uncertainty regarding their child's prognosis, rather than a blatantly poor prognosis, is related to greater psychological distress (Goldberg et al., 1995). These findings are consistent with the suggestion that adjustment to loss entails a reorganization of one's internal representations of the relationship with the lost person (in this case, the loss of the "ideal" or "perfect" child). In the case of parents of handicapped children, this may entail attributing some existential meaning to the event, and redefining their standards for competent parenting and/or their expecations for the parent-child relationship (Affleck et al., 1985; Emde & Brown, 1978; Klass & Marwit, 1988; Pianta et al., 1996).

Since grief involves the loss of a primary relationship (i.e., a disruption to an interpersonal attachment), understanding the experience of grief involves examining factors that may determine the personal meaning of the relationship, and thus the personal relevance of the loss (Weiss, 1983). The character and intensity of emotional reactions are important components of grief (Bowlby, 1980, Middleton & Raphael, 1992; Sanders, 1983). However, cognitive appraisals that ascribe personal meaning to the situation (i.e., attitudes about relationships and the self in relation to others; attributions about the cause, implications, and personal relevance of the event) may be of equal importance. Indeed, cognitive and affective processes interact in the course of psychological adjustment to life events (Lazarus, 1991; Lazarus and Folkman, 1984).

Grief is widely believed to involve traumatic loss, and thus may be conceptualized as a form of stress (Horowitz et al., 1979; Marvin & Pianta, 1996; Middleton & Raphael, 1992; Weiss, 1983). The literature on stress and coping, largely from the fields of personality and social psychology, is both empirically and conceptually more advanced than the clinical grief literature. Examination of stress-coping research may help to explicate factors that may be related to individual differences in grief reactions and grief resolution.

Coping Styles

Appraisal and coping processes have been identified as mediational links in the relationship between stress and psychological adjustment (Lazarus, 1991; Lazarus and Folkman, 1984; Thompson et al., 1994a, 1994b; Wallander and Varni, 1992; Wallander and Venters, 1995). "Approach" and "Avoidance" have been identified as global styles that characterize a person's general orientation toward coping with stress (Krohne, 1989, 1996; Roth and Cohen, 1986). Approach refers to coping responses that are generally oriented toward stressors (e.g., information-seeking, instrumental activity to change the situation). Avoidance coping reflects a general tendency to distance oneself from a source of stress (e.g., social withdrawal, minimization, terminating discussion of a topic). These global styles appear to subsume more situation-specific coping activities (Roth & Cohen, 1986). Moreoever, characteristic coping styles may be more strongly related to long-term adjustment outcomes than are situation-specific coping behaviors

(Lazarus, 1991).

Approach and avoidance coping do not represent opposite ends of a single coping continuum, but instead appear to reflect distinct dimensions of coping activity (Atkinson, Scott, Chisholm, Blackwell, Dickens, Tam, & Goldberg, 1995; Krohne, 1989, 1996; Roth and Cohen, 1986). Factor analytic studies utilizing different measures of coping activity have identified two factors that reflect Approach and Avoidance, with little overlap between the two (Atkinson et al., 1995). More use of approach coping has been related to greater psychological well-being, while more use of avoidance coping has been related to higher levels of psychological distress (Frey et al., 1989). Higher levels of approach and less reliance on avoidance coping have been related to greater self-confidence and higher levels of perceived social support (Holahan and Moos, 1987a & b). However, Atkinson et al. (1995) found evidence suggesting that over-reliance on either coping style may be related to greater psychological distress. In operational terms, excessive approach may essentially reflect rumination, and extreme avoidance may reflect denial. Further, Atkinson et al. (1995) found that avoidance coping was moderately related to decreased caregiving sensitivity in mothers of children with Down syndrome.

The conceptual distinction between approach and avoidance suggests that coping with a particular event may entail either type of coping, or some combination of the two. In fact, effective adaptation has been defined as the flexible and complementary use of approach and avoidance strategies across time and situations (Horowitz, 1982; Horowitz, Bonanno, & Holen, 1993; Horowitz, et al., 1979). An interaction of approach and avoidance coping, with each engaged to varying degrees over time, may serve to modulate the intensity of affective experiences, and thus facilitate effective coping with a situation (Atkinson et al., 1995; Horowitz, 1983; Horowitz et al., 1993; Horowitz et al., 1979; Lazarus, 1991; Miller, 1987, 1990; Roth & Cohen, 1986). Thompson et al. (1994) examined ratios of coping activity that included approach and avoidance strategies in mothers of children with cystic fibrosis and sickle cell anemia, and found that a higher approach:avoidance ratio tended to be related to better psychological adjustment (i.e., lower psychological distress). Other studies (Holahan and Moos, 1990, 1991) have also found a higher approach:avoidance ratio to be related to both greater perceived social support and lower psychological distress. Holahan and Moos (1987a & b) also found a higher ratio of avoidance, relative to approach coping, was related to greater psychological distress, both concurrently and prospectively.

It may be that engagement of a particular coping style that is inappropriate to context is the linkage with psychological distress (e.g., efforts to change an uncontrollable situation; minimizing the importance of an event that requires an instrumental response). Avoidance in the service of immediately reducing negative affect, yet at the expense of instrumental activity via distraction from the realistic demands of a situation, has been related to increased psychological distress and adjustment problems in the long run (Baumeister and Scher, 1988; Lazarus, 1991).

Approach and avoidance demonstrate levels of stability similar to more trait-like personality constructs (e.g., individual mood structure, self-esteem, dysfunctional attitudes). Approach has demonstrated stability coefficients of .71 to .80 over a period of two years, and avoidance has demonstrated coefficients ranging from .66 to .82 over the same time span (Atkinson et al., 1995). Thompson et al. (1994) also found rather consistent use of strategies reflecting a general coping style across a one-year period, with stability coefficients ranging from .53 to .72 for mothers of children with cystic fibrosis, and from .69 to .82 for mothers of children afflicted with sickle cell anemia.

These characteristic coping orientations may operate in much the same way as cognitive personality variables. It has been suggested that coping orientations are related to relatively stable styles of information processing related to stress (Lazarus, 1991; Roth and Cohen, 1986) or perceived threat (Krohne, 1989, 1996; Krohne et al., 1992). For example, avoidance has been related to a bias toward making threatening interpretations of ambiguous stimlui (Hock, Krohne, & Kaiser, 1996). Excessive engagement of approach strategies has been related to a low tolerance for uncertainty (Krohne, et al., 1996).

Other findings support the links between preferential coping style and trait-like personality variables. For example, greater reliance on avoidance coping has been related to higher levels of trait neuroticism (Costa and McCrae, 1990), higher levels of negative affect in response to perceived threat (Lazarus, 1991), and a reduced tolerance for negative affect related to perceived threat (Krohne, 1989, 1996). Conversely, higher levels of extraversion and sociability have been related to a tendency to rely on approach coping (Costa & McCrae, 1990).

The available research suggests that adaptation is an on-going, dynamic process, rather than a discrete event. Coping orientation may be an essential component of the adaptive process. However, coping appears to be functionally related to both stressor magnitude and an individual's tolerance for negative affect (Costa and McCrae, 1990; Krohne, 1989, 1996; Lazarus, 1991; Roth & Cohen, 1986). Stressor magnitude is at least partly based on personality factors (e.g., appraisal processes, attitudes, beliefs, values, inferences) that determine the personal meaning (e.g., implications for one's goals, self-evaluation, and perceived coping efficacy) of any stressful event (Beck, 1987; Folkman, Lazarus, Gruen, & DeLongis, 1986; Lazarus, 1991; Lazarus & Folkman, 1984; Roth & Cohen, 1986;

Valentiner, Holahan, & Moos, 1994). Appraisals, affect and coping activities interact over time throughout the adaptive process (Lazarus, 1991; Lazarus and Folkman, 1984), and these dynamic interactions appear to comprise a self-regulatory system related to psychological adjustment (Lazarus, 1991; Lazarus, Coyne, & Folkman, 1982).

As with coping with stress in general, grief resolution may involve the flexible and complementary use of both approach and avoidance strategies in regulating painful affect over time (Stroebe, Hansson, & Stroebe, 1983). Such coping may better enable a person to understand the event, reorganize their mental representations of their relationship with the lost person, and behaviorally make lifestyle adjustments as they come to terms with the loss (Horowitz, 1982; Horowitz et al., 1993, 1979; Miller, 1990; Moos and Schaefer, 1993; Roth and Cohen, 1986; Shuchter and Zisook, 1983; Stroebe, Hansson, & Stroebe, 1983). It has been suggested that over-reliance on avoidant coping is related to poor grief outcome (Brown & Stoudemire, 1983; Horowitz et al., 1979; Horowitz et al., 1993; Raphael, 1983; Stroebe & Stroebe, 1987). Therefore, characteristic coping orientations may interact with trait emotionality and stable attitudes about self, others and the world in determining adaptation outcomes.

Attributions and Dysfunctional Attitudes

Both attachment theory (Bowlby, 1969; 1973; 1980) and social cognition models of personality (e.g., Clark, Helgeson, Mickelson, & Pataki, 1994; Markus, 1977) propose that individuals differ in what they selectively notice, interpret, learn or remember in any given situation. Selective attention and information-processing are facilitated via self-schemata, which are conceptualized as internal cognitive structures that guide the organization and processing of information about the self (Markus, 1977). Self-schemata are regarded as stable generalizations about the self that are derived from past experience (Beck, 1983, 1987; Beck et al., 1979; Bowlby, 1980; Bretherton, 1987; Weissman & Beck, 1978). Environmental information is selectively processed based on its relevance, or congruency, with one's self-schemata. Such selective information processing is more efficient and serves to facilitate more effective, adaptive functioning (Bowlby, 1969, 1973, 1980; Epstein, 1980; Markus, 1977). More importantly, it forms the basis of cross-situational consistency in interpretations of environmental events (Markus, 1977; Weissman & Beck, 1978).

Self-schemata give rise to rather stable attitudes about self, others, the world, and the future. Some people develop self-schemata that are negatively valenced, based on more negative life experiences (Beck, 1983; Beck, 1987; Beck et al., 1979). Dysfunctional attitudes reflect negatively biased information processing, when more positive or neutral interpretations of events are equally plausible, if not more accurate (Derry & Kuiper, 1981; Hammen & Krantz, 1976; Krantz & Hammen, 1979; Kuiper, 1978; Kuiper & Derry, 1982;

Segal & Shaw, 1986; Sweeney et al., 1986). Automatic negative thoughts reflect the negative conclusions about the self, others, the world, or the future that are drawn when dysfunctional attitudes are activated by stressful life events (Beck et al., 1979; Weissman & Beck, 1978). Automatic negative thoughts and dysfunctional attitudes have both been related to mood disturbance (Beck et al., 1979; Segal & Shaw, 1986; Weissman & Beck, 1978).

Dysfunctional attitudes tend to reflect dichotomous thinking and negative over-generalizations, whereby one's self-worth or happiness is assessed via rigid and inappropriate contingency rules (Weissman & Beck, 1978). Automatic negative thoughts are the results of these inappropriate contingencies. Dysfunctional attitudes are therefore regarded as a cognitive predisposition toward mood disturbance via negatively biased self-evaluation in relation to environmental events (Segal & Shaw, 1986). Dysfunctional attitudes presumably function as cognitive trait-like phenomena, with mood disturbance resulting when individuals encounter situations relevant to those attitudes. This is the basis of Beck's diathesis-stress model, which states that psychological distress results when dysfunctional attitudes are primed by relevant stressful situations (Beck, 1983; Beck 1987; Beck et al., 1979). Stronger effects have been detected when specific categories of dysfunctional attitudes and stressful events are matched (e.g., self-critical attitudes and perceived achievement failure, or excessive dependency attitudes and relationship loss/disruption).

Dysfunctional attitudes have been prospectively related to depression (Rush, Weissenburger, & Evans, 1986) and have concurrently predicted mood disturbance beyond symptom measures (Williams, Healy, Teasdale, White & Paykel, 1990; Zemore & Veikle, 1989). Depressed persons have endorsed higher levels of dysfunctional attitudes than non-depressed individuals even during episodes of remission, although no differences were observed on symptom measures (Dobson and Shaw, 1986; Eaves and Rush, 1984).

Stressful events can be differentially experienced, largely as a function of their appraised meaning and personal implications (Beck, 1987; Lazarus, 1991; Lazarus & Folkman, 1984). These appraisals are at least partly based on relatively stable attitudes reflecting self-schemata. Differential appraisals of events have been shown to be functionally related to mood via interpretive biases (Beck & Weishaar, 1989; Derry & Kuiper, 1981; Kuiper & Derry, 1982). Given their relevance for interpretations of interpersonal events, and for self-evaluation related to these events, dysfunctional attitudes specific to birth defects, caring for a child with birth defects, and self-evaluation as a parent may play a similar functional role in parental grief reactions to their child's handicaps.

Trait Mood Structure

Positive and negative affectivity comprise two relatively distinct dimensions of affective structure, correlating only weakly and negatively with each other (Lakey, Tardiff, & Drew, 1994; McCaskill and Lakey, 1996; Watson, Clark, & Tellegen, 1988). Positive affectivity reflects feelings such as happiness, enthusiasm, activity and alertness; negative affectivity refers to feelings like anxiety, sadness, guilt, anger, and contempt.

Positive and negative affectivity also demonstrate differential relationships with measures of psychological distress, well-being, and perceived social relations. Positive affectivity has demonstrated positive relationships with social satisfaction and frequency of pleasant events (Watson et al., 1988, 1992) and perceived social support (Lakey, et al., 1994; McCaskill and Lakey, 1996). Positive affectivity has demonstrated moderate negative relationships with measures of depression (Watson et al., 1988) and a non-significant relationship with interpersonal stress (Lakey et al., 1994; McCaskill and Lakey, 1996). Negative affectivity has been positively related with perceived stress, the frequency of unpleasant events, depression and state anxiety (Watson et al., 1988) and interpersonal stress (Lakey et al., 1994; McCaskill and Lakey, 1996), while demonstrating a moderate negative relationship with perceived social support (Lakey et al., 1994; McCaskill and Lakey, 1996) and no relation to social satisfaction and the frequency of pleasant events (Watson et al., 1988, 1992).

Factor analytic studies have supported the conceptual distinction between positive and negative affectivity. Positive affectivity has loaded primarily on a factor with measures of psychological well-being and perceived social support (Lakey et al., 1994; McCaskill and Lakey, 1996). Negative affectivity has loaded primarily on a separate factor with measures of psychological distress and interpersonal stress (Lakey et al., 1994; McCaskill and Lakey, 1996).

Accumulating evidence suggests that positive and negative affectivity represent trait dimensions of emotionality, or stable individual differences in the proclivity toward certain emotional states in response to environmental events (Berry & Hasen, 1996; Costa & McCrae, 1980; Diener & Larsen, 1984; Emmons & Diener, 1985; Martin, Wisenbaker, & Huttunen, 1994; McCrae & Costa, 1991; Tellegen, 1985; Watson & Clark, 1984, 1992; Watson et al., 1992; Watson & Tellegen, 1985; Watson et al., 1988). Measures of positive and negative affectivity have demonstrated substantial cross-situational and temporal stability, similar to trait personality measures (Diener & Larsen, 1984; Watson et al., 1988). Both positive and negative affectivity have prospectively predicted psychological distress over periods of up to 7.5 years (Watson & McKee-Walker, 1996).

It has been suggested that positive and negative affectivity reflect higher-order factors underlying Extraversion and Neuroticism, two primary dimensions of the

Big Five Factor Model of personality (Berry & Hasen, 1996; Costa & McCrae, 1980, 1985; Emmons & Diener, 1985; McCrae & Costa, 1991; Tellegen, 1985; Watson & Clark, 1984, 1992; Watson et al., 1992). Positive affectivity has demonstrated a strong positive relation with trait extraversion, and only a minimal negative correlation with trait neuroticism (Berry & Hasen, 1996; Costa & McCrae, 1980, 1985; Emmons & Diener, 1985; McCrae & Costa, 1991; Tellegen, 1985; Watson & Clark, 1984, 1992; Watson et al., 1992). Conversely, negative affectivity has demonstrated a strong relation with trait neuroticism, and little relation with extraversion. Thus, positive and negative affectivity appear to reflect stable predispositions toward particular affective experiences. Similarly, positive and negative affectivity may predict individual differences in affective responses to environmental and interpersonal events.

Trait neuroticism, largely reflecting negative affectivity, has been related to an increased tendency to engage in more avoidant coping (Costa & McCrae, 1990). However, the possible relations between positive affectivity and characteristic stress-coping orientations are unknown at this time. Both trait negative affectivity and avoidance coping have demonstrated positive relationships with measures of psychological distress (Atkinson et al., 1995; Watson et al., 1988). Similarly, dysfunctional attitudes have been identified as a risk factor for psychological distress (e.g., Beck, 1987). Therefore, it may be the case that higher levels of dysfunctional attitudes co-exist with higher trait negative affectivity and a characteristic orientation toward avoidant coping. This particular configuration of variables may complicate efforts to come to terms with loss and resolve grief, which would be consistent with speculations in the grief literature about the role of trait negative affectivity, or neuroticism, in grief resolution (Marwit, 1996; Sanders, 1983). Specifically, it has been speculated that a higher level of negative affectivity may constitute a risk factor for complicated grieving by predisposing an individual to a more intensely negative initial reaction to loss, followed by a proclivity toward more negative affective experiences (Breslau et al., 1982).

Perceived Social Support

Perceived social support may also be related to grief resolution (Marwit, 1996; Sanders, 1983). It has historically been assumed that support or assistance from others can buffer one from the negative effects of stress (e.g., Cohen & Wills, 1985; Vinokur, Schul, & Caplan, 1987). This assumption has been evident in writings from a variety of health-care disciplines that address issues related to stress and coping, including personality and social psychology, psychotherapy, medicine, grief counseling, crisis intervention, nursing, and social work. However, early research on this topic yielded equivocal findings before a distinction was made between enacted and perceived social support (see Barerra, 1986, for a review). Enacted support refers to the actual helping behaviors of others; perceived support refers to the recipient's belief that their needs for reassurance or assistance will be reliably fulfilled by others (Barerra, 1986; Heller, Swindle, & Dusenberry, 1986; Lyons, Perrotta, & Hancher-Kvam, 1988; Procidano & Heller, 1983; Sarason, Sarason, & Shearin, 1986).

Enacted and perceived social support have consistently demonstrated minimal relationships with each other, suggesting that they are distinct constructs (Barerra, 1986; Cutrona, 1986, 1989; Heller et al., 1986; Lakey & Cassidy, 1990; Lakey, Tardiff, & Drew, 1994; Procidano & Heller, 1983; Sarason et al., 1986). Futher, perceived support has consistently demonstrated strong positive relationships with measures of psychological well-being, and moderate negative relationships with psychological distress measures (Barerra, 1986; Lakey et al., 1994). Measures of enacted support have yielded weak, if any, relationships with measures of psychological distress or well-being (Barerra, 1986; Lakey et al., 1994).

Perceived support has been conceptualized has a generalized appraisal of oneself and the social world which is rooted in actual environmental events (i.e., early social interactions with caregivers), but that over time comes to operate as a rather stable personality characteristic, based on repeated social experiences (Sarason, Pierce, & Sarason, 1990; Sarason et al., 1986). This hypothesis is supported by findings that mothers' reports of relationship quality with one of their college-age children have predicted the target child's ratings of global perceived support (i.e., social support not specific to family members), even controlling for mothers' ratings for any of their other children (Sarason et al., 1993). Further, perceived social support has also been prospectively related to college students' psychological well-being and satisfaction with social relationships four months after beginning college, controlling for initial psychological distress and personality variables (Lakey & Dickenson, 1994).

Perceived social support may at least partly function as a personality variable that influences interpretations of social transactions and patterns of interaction (Sarason et al., 1990). Perceived support has been related to biased interpretation of ambiguous social interactions (Lakey, Moineau, & Drew, 1992) and differential recall of others' supportive behaviors (Drew et al., 1995; Lakey & Cassady, 1990). Specifically, persons rated as high in perceived support have been shown to both interpret ambiguous social behaviors as being more supportive and to recall supportive actions more often than do persons low in perceived support. Moreover, measures of perceived support have been shown to be relatively stable over periods of up to three years, comparable to trait personality measures (Sarason et al., 1986; Thompson et al., 1994a, 1994b). Lakey and Cassidy

(1990) found that much of the variance in the perceived support-psychological distress relationship was shared with cognitive personality variables (i.e., dysfunctional attitudes, self-esteem, locus of control).

However, despite findings suggesting that perceived social support operates largely as a personality variable, Lakey et al. (1996) demonstrated that perceived support may more accurately reflect a person-environment interaction. Their findings were based on a series of studies utilizing both support recipient and provider self-reports, as well as subject ratings support provided during videotaped dyadic interactions. Utilizing generalizability theory, these studies demonstrated that the recipient-provider interaction term accounted for about 40% of the variance in perceived support ratings, while provider ratings accounted for about 20% and recipient ratings accounted for about 8%. Therefore, perceived social support appears to reflect neither perfectly veridical reports of social transactions nor completely idiographic personality variance. Rather, recipients' appraisals of the "goodness of fit" between their support needs/preferences and the actions/characteristics of their partners may be the crucial component of perceived support ratings.

Perceived support ratings have demonstrated strong positive relationships with both trait positive affectivity (Lakey et al., 1994; McCaskill & Lakey, 1996) and the Big Five personality dimension of Extraversion (Costa & McCrae, 1990). It has been suggested that both extraversion and positive affectivity are rooted in sociability, a component of infant temperament (Ahadi & Rothbart, 1994; Angleitner & Ostendorf, 1994). Both positive affectivity and extraversion have been related to higher rates of social interaction, membership in more extensive social networks, objective ratings of more reciprocity and general positive affective quality to dyadic interactions, and subjects' reports of greater satisfaction with social relations (Berry & Hasen, 1996). Therefore, perceived support ratings may reflect a person-environment interaction in as much as personality predispositions influence both the quality and quantity of social interactions, leading individuals to cultivate social networks that ultimately prove to be more active, responsive, and satisfying during times of need. Persons may in effect "create" social support networks that more or less match their individual preferences via their moods and sociability patterns. With respect to moderating grief experiences, subjects' appraisals of the overall quality and availability of social support will therefore be of greater interest than actual social network characteristics.

Parenting Daily Hassles

Major stressful life events have been related to higher levels of psychological distress (e.g., Lazarus & Folkman, 1984). They have also been identified as factors that may complicate grieving (Sanders, 1983). Daily hassles, referring to relatively common, on-going stress related to activities of daily living, have demonstrated stronger relations to psychological distress than major stressful life events (Compas et al., 1989). Daily hassles, by virtue of their relation to on-going activities and chronic nature, have been regarded as more proximal sources of stress; major life events reflect more distal, and less common, stressors. Further, the effects of major life events may manifest via daily hassles. Daily hassles have been shown to mediate the relationship between major stressful events and individual psychological distress (Compas et al., 1989).

Interpersonal stress refers to disturbances in social relations, and thus reflects a specific type of stress. Interpersonal stress appears to be conceptually distinct from daily hassles and major stressful life events, as it demonstrates unique relationships to psychological distress. Interpersonal stress does not simply reflect a lack of social support (e.g., Finch et al., 1989; Ruehlman & Wolchik, 1988). Rather, interpersonal stress and perceived support appear to be unique, though moderately related, social relations constructs that map onto the distinction between positive and negative affect (Lakey et al., 1994; McCaskill and Lakey, 1996). Interpersonal stress demonstrates stronger relationships with psychological distress (Finch et al., 1989; Lakey et al., 1994; McCaskill & Lakey, 1996; Pagel et al., 1987; Ruehlman & Wolchik, 1988), while perceived support demonstrates stronger relations to psychological well-being (Finch et al., 1989;

Ruehlman & Wolchik, 1988).

Another form of stress that has been identified specific to parenting is parenting daily hassles (Crnic et al., 1983; Crnic et al., 1984). Parenting daily hassles refer to parents' perceived stress related to caring for their child, as parents are asked to make judgments about both the frequency and the intensity of particular caregiving difficulties. Parenting hassles appear to comprise a specific form of interpersonal stress, as they reflect more proximal on-going stress related to caregiving and difficulties in parent-child interactions (Crnic and Greenberg, 1990).

Reports of parenting daily hassles appear to be rooted in actual environmental transactions, while also reflecting parents' subjective experiences of stress related to caregiving activities as stressful. Crnic and Greenberg (1990) found that parenting hassles were related to difficult child behaviors, but unrelated to specific maternal behaviors, during parent-child interactions, suggesting that hassles are rooted in actual caregiving difficulties. However, both parenting hassles and child behavior problems demonstrated unique relationships with maternal psychological distress, suggesting that perceived parenting hassles are not perfectly veridical reports of child behavior problems (Crnic and Greenberg, 1990). Further, parenting hassles demonstrated stronger relationships with both child behavioral problems and maternal psychological distress than did major stressful life events (Crnic and Greenberg, 1990), again suggesting that more proximal perceived stress exerts a more influential effect on psychological adjustment than more distal stressors.

Parental ratings of the intensity of parenting daily hassles appear to be rooted in actual environmental events, while partly reflecting subjective appraisals of the stressfulness of these events. Therefore, parenting daily hassles may provide a good estimate of the extent to which caring for a child is challenging, confusing, frustrating, or otherwise aversive for parents. It may also be the case that parenting hassles and perceived social support demonstrate differential relations to individual mood, mapping onto the distinction between positive and negative affect in much the same way as interpersonal stress and social support. However, the extent to which this is true and, more importantly, the relative contributions of these variables to grief resolution, is unknown at this time.

Demographic Factors

Demographic factors, such as SES, ethnicity, parental age and single parenthood status, have demonstrated inconsistent relationships with parental stress levels (Dadds et al., 1995; Dunst & Trivette, 1986; Lojkasek, Goldberg, Marcovitch, & MacGregor, 1990; Onufrak et al., 1995; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982; Schneider-Rosen & Cicchetti, 1984). Further, each of these factors has been identified as a possible moderator of grief reactions and outcome (Marwit, 1996; Sanders, 1980, 1983; Stroebe & Stroebe, 1987). The extent to which these demographic variables predict grief resolution will be assessed. Further, the extent to which controlling for these factors effects the predictive abilities of the other individual difference variables will be examined.

Goals of Study

A transactional stress and coping model (e.g., Lazarus & Folkman, 1984; Thompson et al., 1994a, 1994b) was utilized to assess factors that may mediate maternal adjustment to their child's condition. Consistent with current models of parental adjustment (e.g., Thompson et al., 1994a, 1994b), more proximal psychosocial variables (e.g., trait affectivity, dysfunctional attitudes about birth defects, characteristic coping orientation, perceived parenting hassles, perceived social support) were expected to be more strongly related to maternal grief resolution than more distal factors (i.e., child diagnosis, disability parameters, family demographics).

The following general predictions were examined in support of the proposed model:

1. Maternal psychosocial-coping variables were expected to mediate the relationship between child handicap severity and maternal resolution of grief related to their child's condition. Specifically, although child handicap parameters (i.e., functional severity and physical appearance anomalies) were expected to demonstrate significant simple relationships with maternal grief resolution, it was hypothesized that they would not uniquely predict maternal grief beyond more proximal psychosocial resource/coping variables. Maternal grief resolution was expected to be unrelated to child diagnostic group.

2. It was predicted that maternal psychosocial-coping

variables would also mediate the relationship between family demographic parameters and maternal grief resolution. Specifically, while maternal age, intellectual functioning, single-parent status, SES and/or ethnicity may demonstrate significant relationships with maternal grief resolution, none of them were expected to uniquely predict maternal grief beyond maternal psychosocial resource variables or child handicap parameters.

3. Controlling for relevant demographic variables (based on preliminary analyses), child diagnosis, and child disability parameters, the relative predictive abilities of several types of maternal psychosocial-coping variables were evaluated. It was predicted that maternal psychosocial-coping variables would account for the largest portion of variance in predicting grief resolution, followed by child disability parameters and then family demographic factors. The following psychosocial-coping variables were examined as potential predictors of grief resolution:

a. **Trait Emotionality:** Out of all the psychosocial-coping variables, it was hypothesized that trait positive and negative affectivity would demonstrate the strongest relationships with maternal grief resolution. Consistent with prior research, it was expected that positive and negative affectivity would not be significantly related with each other. However, positive affectivity was expected to be moderately related to grief resolution, and negative affectivity was predicted to be strongly, inversely related to grief resolution.

b. **Dysfunctional Attitudes About Child Birth Defects:** Dysfunctional attitudes, as these reflect negative self-cognition related to being a parent of a child with birth defects, were expected to uniquely predict maternal grief resolution beyond trait emotionality. Dysfunctional attitudes were also regarded as a more proximal personality variable, as these may reflect more stable information-processing styles. It was predicted that higher levels of dysfunctional attitudes would be related to an increased likelihood of unresolved grieving. Dysfunctional attitudes were expected to be strongly and positively related to trait negative affectivity, and inversely (moderately) related to positive affectivity.

c. **Characteristic Coping Style:** Approach and avoidance coping, reflecting more stable characteristic styles of responding to stress, were hypothesized to account for unique variance in maternal grief resolution, beyond dysfunctional attitudes and trait emotionality. Approach coping was expected to be moderately related to an increased likelihood of resolved grieving, and it was predicted that greater reliance on avoidance coping would be related to an increased likelihood of unresolved grieving. The potential relationships between approach and avoidance coping, dysfunctional attitudues, and trait emotionality were less clear and no specific predictions were made.

d. **Perceived Social Support:** Perceived social support was included to represent a more "positive" aspect of mothers' social environments and a potential psychosocial-coping resource that may influence grief resolution. Specifically, perceived support was taken to be a reflection of the adequacy of mothers' social relationships in providing support that is optimally useful for a particular mother. Conceptualized as one of the more "distal" of the psychosocial-coping variables, perceived social support was expected to uniquely account for a small amount of grief resolution variance, after controlling for trait emotionality, dysfunctional attitudes, and coping style. Specifically, greater perceived support was expected to be related to an higher grief resolution scores. Consistent with prior research, higher levels of perceived support were predicted to be strongly related to greater positive affectivity. Perceived support was expected to be unrelated to negative affectivity. It was predicted that perceived support would be moderately and negatively related to dysfunctional attitudes. No specific predictions were made regarding the relationship between perceived support and approach-avoidance coping.

e. **Parenting Daily Hassles:** The severity of mothers' perceived hassles related to caring for their child were regarded as a "negative" or stressful aspect of their personal-social environment that may complicate coping and grief resolution. Perceived severity of parenting hassles were assumed to be rooted in actual caregiving events, while partly reflecting mothers' interpretational biases. Higher levels of perceived parenting hassles were expected to be related to an increased likelihood of unresolved grieving. However, parenting daily hassles were expected to account for only a small portion of grief resolution variance, after controlling for more proximal personality and coping factors. Consistent with research on perceived social support and interpersonal stress, it was hypothesized that parenting hassles would be moderately and negatively related to perceived support. Parenting hassles were predicted to be strongly related to negative affectivity and unrelated to positive affectivity. Parenting hassles were expected to be moderately related to dysfunctional attitudes. No specific predictions were advanced regarding the relationship between parenting hassles and coping styles.

The simple relationships (Pearson correlations) between maternal psychosocial-coping variables and continuous grief resolution scores were examined as preliminary indications of grief resolution predictors. Then, psychosocial-coping variables were aggregated, based on their pattern of inter-correlations, to create psychosocial-coping composite factors. This approach was taken to reduce the number of variables to be utilized in multiple regressions, thereby increasing the subject:variable ratio and enabling a more stable evaluation of the grief prediction model.

C. METHODS

Subjects

The study sample consisted of 63 biological mothers and their toddler-age children. Sample demographics are presented in Table 1. Mothers' ages ranged from 18 to 42 years (mean = 30 years). 63% (n = 40) of the families were Caucasian, with 32% (n = 20) African-American, and 5% (n = 3) from other ethnic backgrounds (see Tables 1a & 1b). 67% (n = 42) of the mothers were married and currently living with their spouse, 9% (n = 6) were unmarried and living with their partner (the child's father), and 24% (n = 13) were single parents.

Family socioeconomic status (SES) was estimated, based on parental education and occupation, using the Hollingshead Index of Social Status (Hollingshead, 1975). Where two heads of household made significant contributions to the family's income, the family's social status score was obtained by summing social status scores for each head of household and then dividing this total by two. In the case of single-parent families, SES was based on the custodial parent's educational and employment status. Where custodial parents were single and unemployed, but either separated or divorced <u>and</u> receiving support payments from their partner, SES was based on the partner's most recent level of educational and occupational attainment. According to Hollingshead (1975), possible SES ratings range from a minimum score of 8 (low SES) to a maximum score of 66 (High SES). For the current study, SES ranged from 8 to 66, with a mean rating of 35 (SD = 1.97) reflecting a primarily middle class sample.

Toddlers' ages ranged from 13 to 33 months, with a modal age of 28 months (mean = 25 months, SD = 5 months). 60% (n = 38) of the toddlers were male and 40% (n = 25) were female. 60% (n = 38) were diagnosed with a neurological disorder and 40% (n = 25) were diagnosed with some form of craniofacial anomaly or limb deficiency. A review of each child's medical record confirmed the absence of significant neurological impairment in the latter group. All toddlers were free of debilitating sensory impairment (i.e., were able to apprehend and respond to mother, both visually and aurally, from a distance of 10-12 feet), were capable of some signalling or distance-interaction (e.g., able to look and maintain eye contact, change facial expression and/or alter vocal intonation during interactions, reach, or alter body orientation) and had at least partial mobility (i.e., minimally the ability to roll or scoot). All toddlers had been living with their mothers since birth, with no separations except for medical reasons (e.g., NICU hospitalization post-partum, brief hospitalizations for surgeries and/or treatment of illnesses).

Subjects were recruited from medical clinics in the Metropolitan area of Detroit, MI. These included two large inner-city hospitals (Children's Hospital of Michigan and Sinai Hospital), one close suburban hospital (Providence Hospital), and one outlying suburban hospital (University of

Michigan Mott Children's Hospital). These locations were chosen in order to sample from distributions approximating the demographics of Metropolitan Detroit and to maximize the number of toddlers with craniofacial anomalies, relative to the more frequently occurring neurological disorders.

Measures

Parent Measures

1. The Reaction to Diagnosis Interview (RDI; Marvin & Pianta, 1996) was used to assess resolution of maternal grief responses to their children's birth defects. The RDI is a semi-structured interview specifically designed to assess parents' resolution of emotional distress related to the experience of learning about their child's birth defects or chronic medical condition. Parents are prompted to respond to questions in the following domains: 1) Initial perceptions regarding a potential problem with their child's development and their feelings about this suspicion; 2) Emotional experiences related to receiving their child's diagnosis; 3) Changes in their psychological status since the initial perception of problems and subsequent diagnostic event; and 4) Attributions and/or personal explanations for their child's condition. (The complete RDI is presented in Appendix A.) The RDI was administered by four advanced graduate students who were trained according to administration criteria developed by Marvin and Pianta (e.g., probes associated with specific topical questions, maintaining neutrality during the interview). All interviews

were audiotaped for scoring and classification purposes. Interviews were transcribed into written format by graduate and undergraduate psychology majors blind to subjects' identities. All interviews were scored by the primary investigator according to criteria developed by RDI authors (elaborated below).

The <u>Reaction to Diagnosis Classification System, or RDCS</u> (Marvin & Pianta, 1996) is an organized system for assessing parents' general adaptation to their child's diagnosis (i.e., the extent to which they have resolved any emotional distress related to learning of their child's birth defects and/or diagnosis). The RDCS also elicits more descriptive information about parents' adaptive patterns by assessing the extent to which integrative and dissociative strategies for coping with grief/loss are indicated in their responses to the RDI. Subjects' responses to the RDI are coded according to the presence or absence of predetermined elements suggesting Resolution and Lack of Resolution of grief. Elements of both Resolution and Lack of Resolution are expected to be present in most interviews. Resolution is characterized by the predominance of integrative mental strategies reflecting the overall adaptive operation of executive mental functions on the loss experience. Lack of resolution is characterized by a predominance of dissociative strategies and the inadequacy of executive functioning (Marvin & Pianta, 1996). Descriptors of the interpersonal styles, emotional content and expressions, cognitive processes, and mental representations of self, child and diagnosis-related events suggestive of Resolution and Lack of Resolution are described in the RDCS.

In Marvin and Pianta's system, each coder judges the overall organizational pattern that best describes the configuration of elements present in a given interview, so that each subject is classified into a major category of Resolved (R) or Unresolved (U), reflecting their general adaptation to their child's diagnosis. Marvin and Pianta (1996) report inter-rater reliabilities of 92% for major classifications of Resolved/Unresolved. Their study rated parents of children with both cerebral palsy and epilepsy, with no differences in rates of agreement across diagnostic categories. For purposes of reliability, eleven interviews (18%) selected at random were independently scored by a faculty project consultant trained in RDI administration and scoring procedures. Initial agreement on classifications of Resolved/Unresolved was 82% (9/11), with a rate of 91% (10/11) attained following discussion of disagreements on scoring criteria. Reliability was further verified by Robert Pianta, Ph.D., who scored an additional six interviews selected at random, with an agreement rate of 83% (5/6).

For the current study, Likert-format scoring systems were developed for assessing parental grief resolution, so that grief resolution can also be treated as a continuous variable for data analytic purposes. Parental interviews were scored according to 7 criteria suggesting resolved grieving and another 7 criteria suggestive of unresolved grieving, based on the RDCS (Marvin & Pianta, 1996). The extent to which each criterion was reflected in a parent's interview was scored on a 5-point Likert format. Subjects' scores on each of these criteria were then summed to yield "Resolved" and "Unresolved" sub-scores. Unresolved items were reverse-keyed and the two subscales were summed to yield a <u>Total Grief Resolution</u> score, with higher scores reflecting greater resolution. (The rating scales used for scoring "Resolved" and "Unresolved" grief are presented in Appendix B.)

Since the continuous grief ratings were developed specifically for the current study, reliability was calculated in several ways. First, agreement between the primary investigator and the faculty project consultant on each criterion scoring (i.e., the seven indices of "Resolved" and seven indices of "Unresolved" grief) was calculated. Initial agreement rates to within 1 point of each other were 87% (67/77) for Resolved criteria and 84% (65/77) for Unresolved. After discussion of any disagreements, agreement rates within 1 point were 90% and 86% for Resolved and Unresolved, respectively. The less-than-perfect agreement reflected slight differences in the two raters' interpretations of individual items (e.g., weighting of content versus stylistic, or non-content factors). The decision was made to retain these slight differences for the current study. Future research examining the relative importance of verbal content, verbal expressive style, and emotional expression is needed to refine the coding system and increase inter-rater reliability.

Additionally, correlations between each rater's scorings for "Resolved" and "Unresolved" sub-scales and for the <u>Total Grief Resolution</u> scale were computed. Initial correlations were $r = .66$ for the "Resolved" sub-scale, $r = .79$ for "Unresolved", and $r = .72$ for the <u>Total Grief Resolution</u> scale. Following discussion of any scoring disagreements, correlations of $r = .80$ ("Resolved"), $r = .83$ ("Unresolved"), and $r = .81$ (<u>Total Grief Resolution</u> score) were attained.

Finally, the integrity of each grief resolution scale was verified via internal consistency ratings and relations to categorical grief ratings (The Resolved and Unresolved sub-scales are presented in Appendix B to illustrate the individual items for each scale). Coefficient alpha was .90 for the <u>Total Grief Resolution</u> scale, with alpha = .81 for the "Resolved" sub-scale and alpha = .82 for the "Unresolved" subscale. The "Resolved" and "Unresolved" sub-scales were strongly related to the total scale score, with correlations of $r = .97$ and $-.97$, respectively. The continuous variable scores were predictably related to categorical-level RDI classifications. Subjects classified as Resolved received higher total scale scores ($F = 149.28$, $p < .001$), higher scores on "Resolved" subscale ($F = 125.83$, $p < .001$) and lower scores on "Unresolved" ($F = 118.12$, $p <$

.001). Scores and distributions are presented in Table 2.

Length of the Reaction to Diagnosis Interview. An index of the overall length of mothers' responses to the RDI was taken in order to control for this potential factor incluencing grief resolution scoring. The total number of words spoken by each mother in the context of the interview was recorded by undergraduate members of the research team, who simply summed the number of words contained in the written RDI transcripts. Only substantive words were included in the totals (e.g., expressions suggesting pensiveness, such as "uh" and "um" were omitted from the totals). For the current sample, the average number of words in the RDI was 1313.2 (SD = 982.3, range = 100 to 4688).

2. The Dysfunctional Attitudes Regarding Birth Defects Scale (DARB) was designed specifically for this study to assess mothers' attitudes about their child's birth defects. The DARB is a 26-item scale patterned after the Dysfunctional Attitudes Scale (Weissman & Beck, 1978) and guided by Lazarus' (1991) theories related to stress, cognitive appraisals, and emotion. The presence of dysfunctional attitudes have been hypothesized to function as a stable cognitive predisposition to affective-disturbance via their relation to automatic negative thoughts (Beck et al., 1979). Therefore, dysfunctional attitudes may function more as cognitive trait-like phenomena reflecting negative, rigid, absolutistic, and/or over-generalized self-schemata. The Dysfunctional Attitudes

Scale (Weissman & Beck, 1978) has demonstrated high internal consistency (alpha = .92) and has been linked with an increased risk for depression.

The DARB was designed to assess parental appraisals of both the relational meaning (e.g., regarding self-as-individual, self-as-parent, self-in-relation-to-the-world, and child-in-relation-to-parent) and the long-term implications (for both self and child) of children's birth defects. Both negative <u>and</u> positive attitudes are assessed. For example, negative items include "You were not careful enough during your pregnancy", "You have failed as a parent", "Your child will blame you" and "You will miss out on many of the joys of being a parent." Examples of positive items include "You will become a stronger and wiser person as a result", "You have been specially chosen and blessed to care for such a vulnerable soul", "You will learn to appreciate greater joy for the simple beauty in life most people take for granted", and "It shouldn't have any effect on your life, since all children are equally special spirits and loveable individuals." Items were scored on a 5-point Likert format indicating the extent to which subjects agree or disagree with each statement. In the current study, the DARB demonstrated high internal consistency (alpha = .88). Separate internal consistency estimates for the items assessing negative attitudes (20 items) and positive attitudes (6 items) were acceptable at alpha's of .90 and .71, respectively. To enhance interpretive clarity, items on the DARB were reverse-coded so that higher scores on DARB-Neg reflected greater endorsement of dysfunctional attitudes, and higher scores on DARB-Pos reflected more endorsement of positively-valenced attitudes about birth defects.

3. The Approach-Avoidance Scale (AAS) (Cohen & Roth, 1988) was used to assess mothers' characteristic style of coping with stressors. The AAS consists of 15 items scored on a 5-point Likert scale. Approach items assess subjects' attempts to actively cope with their feelings about stressful events, or the extent to which subjects force themselves to think through their reactions to stressful events (e.g., "I tried to deal with my feelings about it", "There were things about it that I tried to find out more about" and "I tried to think about what I should do."). Avoidance items assess subjects' tendencies to avoid thinking about stressful events, or to avoid reminders of stressful events (e.g., "I tried not to think about it", "When someone brought it up, I usually tried to change the subject" and "I stayed away from reminders of it."). The AAS was developed via confirmatory factor analysis, with high (.97) goodness of fit of all items to a two-factor model. Further evidence of construct validity for the AAS is provided by Atkinson et al. (1995) wherein a conceptually distinct two-factor solution was consistently replicated at three separate measurement points across a two-year time span. In the current study, internal consistency was .86 for

Avoidance and .78 for Approach.

Mothers in the current study were asked to report on how they generally tend to cope with stressful events/situations, rather than how they have responded to a specific event, in order to assess their stylistic orientation to coping with stress. Since all mothers were interviewed for this study after the diagnosis of their child's handicap, it was impossible to prospectively assess mothers' grief resolution as a function of their dispositional coping style. It was reasoned that asking mothers to report on their typical coping responses would enable an estimate of mothers' trait-like predisposition for coping with stress and the extent to which this might be related to grief resolution. Presumably, such a trait-like coping style would exist prior to the child's birth and diagnosis, and thus precede maternal grief responses. Evidence supporting use of the Approach-Avoidance scale as a measure of general coping orientation, or a general style of coping with stress, has been provided by Atkinson et al. (1995). In their study, Approach-Avoidance coping demonstrated high stability across a 2-year span, with stability coefficients ranging from .80 to .71 for Approach, and from .82 to .66 for Avoidance. Stability coefficients tended to decline somewhat across time, as would be expected with a trait-like measure.

4. The Positive and Negative Affectivity Schedule (PANAS) (Watson, Clark, & Tellegen, 1988) was used to

measure mothers' trait emotional dispositions that may have influenced their emotional reactions to diagnostic events and subsequent grief resolution. The PANAS is comprised of two 10-item scales, one of which measures positive affectivity (PA) and another which measures negative affectivity (NA). Both scales consist of adjectives which are symptomatic of either positive (e.g., "alert", "enthusiastic", "strong", "active") or negative (e.g., "upset", "irritable", "afraid", "ashamed") affect and are scored according to a 5-point scale. Watson et al. (1988) report that shorter temporal references (e.g., "how you feel at the present moment") for rating each item are more indicative of mood states, while longer time frames (e.g., "how you feel in general, or on the average") reflect more trait-like dispositions. For the current study, mothers were asked to rate the _extent_ to which they feel a particular way _in general_, in order to obtain a more trait-like measure. Extensive evidence for the construct validity of the PANAS is presented in Watson et al. (1988), as is data supporting the convergent and discriminant validity. Using longer temporal references (i.e., "in general", "on the average"), the PANAS has demonstrated stability estimates similar to those yielded by personality trait measures (Watson et al., 1988). Internal consistency estimates in the current study were alpha = .87 for Positive Affectivity and alpha = .93 for Negative Affectivity.

5. _The Social Provisions Scale (SPS)_ (Russell &

Cutrona, 1985) was used to assess mothers' perceived social support. The Social Provisions Scale (SPS) was designed to assess the six relational provisions described by Weiss (1974) which are attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. The six-factor structure of the SPS has been confirmed via factor analysis (Russell & Cutrona, 1985). Sufficient evidence of convergent and discriminant validity for the SPS are provided in Cutrona (1986). The SPS consists of 12 statements regarding the degree to which an individual's social relationships are currently supplying each of the six social provisions (e.g., "There are people I can depend on to help me if I really need it", "I feel personally responsible for the well-being of another person", and "I have relationships where my competence and skill are recognized."). Subjects are asked to describe their social relations in general, as opposed to specific relationships, so the SPS is regarded as a measure of global perceived support. Respondents rate the presence or absence of particular support provisions on a 5-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree", to describe their current social relationships. Scores can be calculated for each provision separately, or scores can be summed to yield a total social support score. Only the total perceived support score was used in the current study. It had an internal consistency estimate of alpha = .84, which is consistent with those found by Cutrona (1986) and Russell and Cutrona (1985).

6. The Parenting Daily Hassles Scale (PDHS) (Crnic & Greenberg, 1990) is a 20-item measure of typical daily events related to parenting and parent-child interactions which may be regarded as aversive or stressful to parents (e.g., "The kids' schedules interfere with meeting your own or household needs", "The need to keep a constant eye on where the kids are and what they're doing" and ""Babysitters are difficult to find"). For each item, parents rate both the frequency of occurrence (on a 4-point scale, ranging from "rarely" to "constantly") and the intensity of perceived hassle for the event (on a 5-point scale, ranging from "none" to "big hassle"). Evidence of validity for the PDHS is provided in Crnic and Greenberg (1985). In the current study, the two scales were correlated at r = .61. Therefore, they were combined into a single measure of Parenting Daily Hassles (Total Hassles), reflecting global parental perceptions of hassles associated with caring for their handicapped child. Internal consistency for the Total Hassles measure was alpha = .86.

7. The Comprehension Subscale of the Wechsler Adult Intelligence Scale-Revised (WAIS-R Comprehension Scale) (Wechsler, 1981). The WAIS-R Comprehension Subscale was administered with mothers using a structured interview format (as per standard WAIS-R administration procedures) in order to obtain an estimate of mothers' intellectual functioning. Items on the Comprehension subscale assess a

general understanding of a variety of concepts related to daily living, as well as verbal reasoning with some abstract concepts (e.g., "Why do we wash clothes?", "What are some reasons why many foods need to be cooked?", "Why do people who are born deaf have trouble learning to talk?", "What should you do if while in the movies you are the first person to see smoke and fire?" and "Why do you need a doctor's prescription to buy certain drugs?"). In the WAIS-R standardization samples, scores on the Comprehension Subscale demonstrated average correlations of r = .76 with Verbal IQ and r = .74 with Full-Scale IQ scores, supporting the use of the Comprehension score as an estimate of both global and verbally-mediated intellectual functioning. Estimates of maternal intellectual functioning were obtained in the current study in order to control for this as a potential factor related to grief resolution. The Comprehension subscale yields a standardized score, with a mean of 10 (SD = 3). In the current study, the mean Comprehension score was 9.4 (SD = 3.03, range = 3 to 16, modal score = 8).

8. Time Since Diagnosis. Elapsed time from the date of diagnosis confirmation to the time of data collection (i.e., date that the RDI was completed) was also computed for each case. Only diagnoses that would result in inclusion in the study were considered in these computations (i.e., associated conditions, such as bronchopulmonary dysplasia or gastroesophogeal reflux, were not considered in these

computations). In cases were a child had been given more than one diagnosis, where either would qualify him/her for inclusion in the study, two separate computations were made: 1) **Time Since First Diagnosis**, and 2) **Time Since Most Recent Diagnosis**. In the current sample, the mean time since first diagnosis was 20.6 months (SD = 7.6 months, range = 7 to 34 months, modal time = 28 months). The mean elapsed time since the most recent diagnosis was 14.6 months (SD = 7.6 months, range = 1 to 28 months, modal time = 10 months).

Child Measures

1. The Bayley Scales of Infant Development -- Second Edition (Bayley-II; Bayley, 1993) were used to estimate children's developmental levels. The Bayley-II assesses skills from two broad domains of functioning: 1) Mental Development, which reflects a child's overall cognitive functioning, including receptive and expressive language, visual-spatial and problem-solving skills, and personal-social skills; and 2) Psychomotor Development, which assess the child's gross and fine motor skills. Scores from each domain were used to obtain a standardized developmental equivalency (DE) for each child -- Mental Developmental Equivalency (MDE) and Psychomotor Developmental Equivalency (PDE). In the current study, the mean MDE was 19.74 months (SD = 6.64, range = 5 to 36 months, modal MDE = 15 months). The mean PDE was 17.95 months (SD = 7.96), with a range of 1 to 35 months and a modal PDE of 17 months.

Internal consistency ratings for the Bayley-II are provided in the test manual, with average alphas across the standardization sample of .88 for the MDI and .84 for the PDI. Stability coefficients (test-retest intervals ranging from 1-16 days, median interval = 4 days) are reported of r = .87 for the MDI and r = .78 for the PDI. Inter-rater agreement levels of .96 are reported for the MDI, with .75 for the PDI. Evidence of satisfactory predictive and discriminant validity for the Bayley-II is reported in the test manual. The MDI and PDI subscales become more predictive of later intellectual, language and academic performance as a function of increasing age at which they are administered to a child. More importantly, the Bayley-II has demonstrated the ability to reliably discriminate infants at risk (e.g., autism, developmental delays, prenatal drug exposure, premature birth, asphyxia at birth) from those developing normally.

For the current study, the Bayley-II was administered by five psychology graduate students. Inter-rater reliability was estimated by having every third Bayley-II independently scored by a second administrator (one of the same individuals trained in Bayley-II administration and scoring procedures, identified above). Reliability scorings were conducted either live (from behind a two-way mirror, simultaneous with the actual test administration) or via videotape. Reliability was estimated by calculating inter-rater agreement at the level of individual test items for each subject (i.e., agreement regarding whether an item was scored as "credit" or "no-credit" according to criteria provided in the test manual). A total of 18/63 Bayley-II's (29%) were scored for reliability. For the sample as a whole, agreement levels of .95 (n = 18) were calculated for the MDI and .91 (n = 13) for the PDI. For the neurological sub-group, there was agreement of .96 (n = 9) for the MDI and .95 (n = 5) for the PDI. Within the craniofacial sub-group, agreement levels were .94 (n = 9) for the MDI and .77 (n = 8) for the PDI.

2. Handicap Severity Indices In order to estimate children's functional disabilities, three indices of handicap severity were developed:

a. Each child received a **Functional Severity Index (FSI)** score, reflecting an average of the discrepancies between a child's functional and chronological ages across the two broad developmental domains of mental and motor skills. The following formula was used: [(Child's chronological age - Bayley mental developmental equivalency) + (Child's chronological age - Bayley motor developmental equivalency)]/2. In short, (Mental + Motor Discrepancy Scores)/2 = **Overall Functional Severity Index**. Higher scores reflect greater severity, based on discrepancies between the child's chronological and developmental ages across two global domains of functioning (mental and motor skills). Negative scores reflect above-average functioning, relative to the child's chronological age. Toddlers in the current study demonstrated an average FSI of 6.2 (SD = 6.7), with scores ranging from -2.5 to 25.0.

b. Each child also received an **Appearance Impact Rating (AIR)** score, based exclusively on an independent observer's appraisal of the child's physical appearance. An undergraduate psychology student watched a 2-minute videotaped segment of each child during the Bayley administration. The rater was asked to attend to any and all aspects of the child's _physical appearance_ (e.g., facial features and expressions, posturing), but _not_ to the child's activities or functional skills. The rater was also asked to attend to their own emotional reactions to the child (based on appearance) and to imagine the extent to which the child would stand out from their peers in a group. Immediately after viewing each videotape, a rating was made based on a 5-point scale of "Appearance Impact Severity", developed for this study, based on the observer's global impressions (see Appendix C). This _Appearance Impact Rating_ was designed to determine the extent to which the child's physical appearance is immediately noticeable and/or disconcerting to others. As such, this index was used as an estimate of the severity of the child's appearance anomalies, relative to same-age peers, in the view of laypersons. More importantly, this enabled analyses of the extent to which both "Child Apperance Severity" and "Child Functional Severity" were related to mothers' grief resolution. Toddlers in the current study received a mean AIR of 1.9 (SD = 1.1, range = 1 to 4).

Scoring criteria for the AIR were collaboratively developed and refined by three members of the research team. Videotapes of the first ten subjects were viewed by these three raters in the same sitting, with extensive discussion of the scoring criteria during these viewings. Following the viewing of each individual subject, each rater provided an Appearance Impact Rating. Any disagreements were discussed and a final rating was reached via consensus. Following these "training sessions" on the first ten subjects, a single rater (an undergraduate research assistant) viewed and scored the remaining 53 subjects.

For purposes of reliability, a second rater independently viewed 43 (81%) of the remaining subjects. A third rater independently viewed 21 (40%) of the remaining subjects. In all, 21/53 ratings were made by three independent coders, 22/53 were made by two independent coders, and 10/53 (19%) were made by a single coder. There was 71% perfect inter-rater agreement in AIR scores (either 3/3 or 2/2 raters). When those subjects rated by two and three coders were combined, agreement between <u>at least</u> 2/3 coders was 90% (either 2/2, 2/3, or 3/3). Ratings for the first ten subjects were based on the consensus achieved during the training sessions.

c. Each child also received a **Global Severity Rating (GSR)**. The GSR index was also developed specifically for this study to provide a more global estimate of the severity of each child's condition, taking into account both their functional deficits and any compensatory skills that might not be reflected adequately in the Functional Severity Index (FSI, based on the child's Bayley-II performance) or in the Appearance Impact Rating (AIR). More importantly, this scale was developed to allow a closer comparison of the two diagnostic groups in terms of the overall severity of children's medical conditions.

Similar to the AIR, the GSR was determined by a rating on a single 5-point scale, based on an independent observer's appraisal of the child's functional capabilities in a relatively free-form situation (see Appendix D). Ratings were based on each child's actions during a 6-minute segment of videotape, including 3 minutes of free-play between mother and child, followed by 3 minutes of more independent play by the child while mother completed questionnaires. These two situations were included in the total segment to be rated in order to compare the child's skills during a time wherein mother was more likely to be actively engaging, with a time wherein mother was more likely to be disengaged and requirements for the child to demonstrate initiative were greater. Overall, the child's ability to "operate on" their environment (i.e., functional skills, independence, intentionality of actions, responsiveness) was the target of the GSR ratings. Raters were provided with each child's chronological age prior to viewing the videotaped segments, in order to appraise each child's skills relative to expectations for same-age peers.

This index was used as an estimate of the global severity of the child's handicaps from a layperson's standpoint. More importantly, this enabled analyses of the extent to which "Global Handicap Severity" was rated to mothers' grief resolution, relative to both "Child Apperance Severity" and "Child Functional Severity." The mean GSR score for our sample was 2.3 (SD = 1.2, range = 1 to 5).

As with the AIR, three members of the research team were trained to reliability using the first ten subjects of the current study. Videotapes of the first ten subjects were viewed by these three raters in the same sitting, with extensive discussion of the scoring criteria during viewings. Following the viewing of each individual subject, each rater provided an a Global Severity Rating. Any disagreements were discussed and a final rating was reached via consensus. Following these "training sessions" on the first ten subjects, a single rater (an undergraduate psychology major) viewed and scored the remaining 53 subjects.

For purposes of reliability, a second rater independently viewed 43 (81%) of the remaining subjects. A third rater independently viewed 21 (40%) of the remaining subjects. In all, 21/53 ratings were made by three independent coders, 22/53 were made by two independent coders, and 10/53 (19%) were made by a single coder. There was 69% perfect inter-rater agreement in AIR scores (either 3/3 or 2/2 raters). When those subjects rated by two and three coders were combined, agreement between at least 2/3 coders was 90% (either 2/2, 2/3, or 3/3).

Procedures

Permission to contact potentially eligible families for the study was obtained from the clinics' medical directors, and official approval was obtained from the Institutional Review Boards of the respective hospitals involved in the project. Potentially eligible families were identified via review of hospital registration records for children who met age and diagnostic criteria for the study. Mothers were initially contacted with a brief letter describing the project. Project staff then followed-up with a telephone call to the parent(s) to more fully describe the project, address any questions or concerns, and schedule mother and child for an assessment if they chose to participate.

Mother and child were asked to come to the Child and Family Study Group office on the Wayne State University campus. Participants were given the choice of either transporting themselves to/from the lab and then being reimbursed for their travel expenses (up to a maximum of $15), or they could elect for project staff to arrange transportation for them. As an alternative to a single lab appointment, mothers could elect to complete some interview and questionnaire measures during a briefer appointment in their home, followed by a short lab appointment to complete parent-child interaction paradigms and the Bayley-II. A packet of questionnaires for mothers to complete as part of the study, including an informed consent form, was mailed to them before their lab appointment. Completed questionnaires were returned to the investigators at the time of the lab appointment.

Once participants arrived at the lab and before data collection actually began (including collection of questionnaires completed at home), mothers' informed consent was officially obtained. Any questions or misconceptions were anticipated and clarified for them. Finally, mothers and children were informed that they would be spending some play time together and that the children would also be playing some games with one of the examiners. Mothers and children were reassured that they could stop participating at any time during the proceedings. A general overview of data collection procedures was then provided, beginning with some interaction tasks (Ainsworth's Strange Situation, Parent-Child Interaction Tasks) that were part of the larger research project from which the current study is derived. Mother and child then remained together while the Bayley-II was administered. Mothers then completed some brief interviews (including the RDI and WAIS-R Comprehension subscale) and questionnaires (including the DARB), while the child participated in some play activities with one of the examiners. Breaks were taken throughout the proceedings as needed, with snacks available for both mothers and children. After completion of all proceedings, both the mother and child were thoroughly debriefed. Regardless of the child's compliance with proceedings, she/he was awarded a sticker/prize. Mothers were paid an additional $35 as compensation for their time and participation.

Results

Descriptive statistics were used to examine the distributions of all variables. Categorical variables were collapsed when cell sizes became small. In this regard, ethnicity was dichotomized into "Caucasian" and "Minority" groupings, and mothers' marital status was divided into "Single" and "Non-Single" groups, depending on whether the mother was residing with a spousal partner at the time of the study. Distributions of the dichotomized ethnicity and marital status variables, by child diagnostic group and maternal grief resolution status, are presented in Tables 1a and 1b, respectively.

The distributions of all continuous variables were examined for outliers and potential violations of normality. Only two variables contained outliers: "Approach", with one score between three and four standard deviations below the mean; and "RDIWords" (number of words spoken by mother during the Reaction to Diagnosis Interview), which had one case located between three and four standard deviations above the mean. There were negligible changes in the correlations of "Approach" and "RDIWords" with either the dependent or any of the remaining predictor variables when the two outlier cases were removed. The decision was made to retain these two cases in order to maximize the number of cases available for correlational analyses. To address problems with kurtosis, log transformations were performed on both Approach and RDIWords in order to meet normality assumptions (since log transformations are typically recommended for addressing problems with kurtosis; see Tabachnick & Fidell, 1989). Descriptives for the transformed variables indicated acceptable normality approximations, so the log-transformed scores were used in all subsequent analyses.

The hypothesized model of factors related to maternal grief resolution called for examination of family demographic variables, child disability parameters, and maternal psychosocial-coping factors. Specificially, the model hypothesized that more proximal factors (e.g., maternal psychosocial-coping variables) would be more strongly related to grief resolution than would more distal factors (e.g., demographics). Therefore, initial examination of factors related to grief resolution proceeded in three stages: 1) Demographics, 2) Child Disability Parameters, and 3) Maternal Psychosocial-Coping Variables.

Demographic Factors and Grief Resolution

Comparing mothers with "Resolved" vs. "Unresolved" grief classifications, no differences were observed in mothers' ages or in elapsed time since the child's initial diagnosis was given (see Table 3). However, in those cases wherein a second major diagnosis had been given (n = 30), there was a trend toward greater elapsed time since the diagnostic event in cases of resolved grieving (F (28,1) = 3.79, p = .06). There was also a non-significant trend toward higher WAIS-R Comprehension scores (estimated intellectual functioning) in mothers classified as Resolved (F (61,1) = 3.49, $p < .07$). The total number of words spoken by mothers in the course of completing the RDI (or the overall length of their responses) were on average significantly greater in cases of unresolved grieving (F (61,1) = 6.45, $p < .05$).

Significant relationships were obtained between diagnostic grouping, ethnicity and the categorical grief resolution variable, RDI (see Table 4). Mothers of children with craniofacial anomalies were more likely to be classified as resolved with respect to grief reactions than were mothers of children with neurological disorders (Chi-square = 12.75, $p < .001$). Caucasian mothers were more likely than minorities to be classified as resolved (Chi-square = 10.74, $p < .001$). However, there was also a significant relationship between ethnicity and diagnostic group (Chi-square = 7.52, $p < .01$). Equal numbers of Caucasian as minority children were diagnosed with neurological disorders, but there were over five times as many Caucasian children with craniofacial anomalies as there were minority children. This finding is consistent with research suggesting that craniofacial anomalies are more prevalent in Caucasians than in African-Americans (Vanderas, 1987), who made up the majority (20/23, or 87%) of our minority group. Neither SES nor marital status were related to grief resolution.

Since there were significant relations between ethnicity and diagnosis, and since both diagnosis and ethnicity were related to grief resolution, two hierarchical regressions onto the continuous grief resolution scores were conducted in order to assess the unique predictive abilities of diagnosis and ethnicity (both dummy-coded for the purpose of multiple regression). In the first analysis, ethnicity was entered on the first step, followed by diagnostic group, in order to assess the unique predictive abilities of diagnosis after accounting for ethnicity. Diagnostic group significantly predicted grief resolution beyond any effects due to ethnicity (R-square change = .15, F-change = 12.08, $p < .001$; Beta = .41, $t = 3.48$, $p < .001$). With both variables in the equation, ethnicity evidenced a non-significant trend toward predicting grief resolution (Beta = .22, $t = 1.89$, $p < .07$). The ethnicity-diagnostic group interaction was non-significant.

The above analysis was repeated with diagnostic group entered before ethnicity, in order to assess the unique predictive abilities of ethnicity. Again, ethnicity evidenced a non-significant trend beyond the effects of diagnosis (R-square change = .04, F-change = 3.58, $p < .07$; Beta = .22, $t = 1.89$, $p < .07$), while diagnosis remained a significant predictor of grief resolution (Beta = .41, $t = 3.48$, $p < .001$). These regression analyses suggested that diagnostic group uniquely predicted grief resolution, and that diagnostic group accounted for a larger portion of grief resolution variance than did ethnicity. Since the continuous grief resolution variable had been created specifically for the current study, two logistic regressions onto the categorical grief resolution rating were conducted in order to verify the unique predictive abilities of diagnostic group and ethnicity. Using this method of analysis, grief classification rates were improved by adding both diagnostic group (Chi-square = 7.63, $p < .01$) and ethnicity (Chi-square = 5.99, $p < .05$) to the equation. With both variables in the equation, each significantly predicted grief resolution (Diagnosis $B = .82$, $R = .27$, $p < .01$; Ethnicity $B = .79$, $R = .22$, $p < .05$). Taken together with the multiple regressions onto the continuous grief resolution scores, these results suggested that both child diagnostic group and ethnicity were uniquely related to maternal grief resolution. However, child diagnostic group accounted for a larger portion of the variance in maternal grief resolution than did ethnicity.

Since ethnicity was related to grief resolution, relations between maternal psychosocial variables and ethnicity were also examined (see Table 5). Four of the maternal psychosocial variables differed by ethnicity: Caucasian mothers endorsed higher levels of approach coping ($F(58,1) = 10.64$, $p < .005$), lower levels of avoidance coping ($F(58,1) = 10.30$, $p < .005$), higher levels of perceived social support ($F(60,1) = 13.85$, $p < .001$) and more daily parenting hassles ($F(54,1) = 4.30$, $p < .05$), compared with mothers from ethnic minority groups.

The extent to which differences in maternal psychosocial-coping variables might be due to SES and/or maternal IQ, as opposed to being directly attributable to ethnicity, was unclear. Therefore, a series of partial correlations were run in order to examine the relative contributions of ethnicity, SES and estimated maternal IQ to the maternal psychosocial-coping variables, particularly those that had been observed to differ by dichotomized ethnic categories. (Zero-order correlations among the dummy-coded ethnicity variable, SES, maternal IQ, and the psychosocial-coping variables are presented in Table 6). Controlling for maternal IQ had negligible effects on the ethnicity-coping relationships (Avoidance $r = -.36$, $p < .01$; Approach $r = .31$, $p < .05$) and small effects on the SES-coping relationships (Avoidance $r = -.27$, $p < .05$; Approach $r = .24$ $p = .07$). Controlling for SES had small effects on the ethnicity-coping relationships (Avoidance $r = -.30$, $p < .05$; Approach $r = .28$, $p < .05$) and eliminated the IQ-Approach relationship ($r = .13$, $p = .34$). Controlling for SES mildly reduced the ethnicity-perceived support relationship ($r = .31$, $p < .05$), but slightly strengthened the ethnicity-hassles relationship ($r = .36$, $p < .01$). However, controlling for ethnicity practically eliminated both the IQ-Approach relationship ($r = .12$, $p = .35$) and the SES-coping relationships (Avoidance $r = -.17$, $p = .21$; Approach $r = .20$, $p = .13$). Controlling for ethnicity mildly weakened the SES-perceived support relationship ($r = .27$, $p < .05$), but significantly strengthened the SES-hassles relationship ($r = -.26$, $p = .05$). Therefore, maternal psychosocial-coping variables appeared to differ primarily by ethnicity, rather than SES or IQ. Ethnicity and SES appeared to make similar, but separate, contributions to mothers' perceived social support ratings.

Although maternal grief resolution differed by diagnostic category, none of the psychosocial-coping variables differed on the basis of diagnostic groupings. On the basis of the above analyses, the decision was made to control for child diagnostic group, ethnicity, and the number of words in mothers' RDI responses in subsequent multivariate analyses of predictors of grief resolution.

Child Disability Parameters and Grief Resolution

Relations between child age, Appearance Impact Rating (AIR), Functional Severity Index (FSI), Global Severity Rating (GSR), and mothers' grief classifications were examined next (see Table 7). Neither children's ages nor their AIR scores varied by maternal grief resolution. However, mothers with unresolved grieving had children with greater functional impairment (higher FSI scores, $F\ (1,59) = 7.35$, $p < .01$) and higher GSR scores ($F\ (1,59) = 12.35$, $p < .001$), suggesting more severe handicapping conditions overall. Therefore, both child GSR and FSI were controlled in subsequent multivariate analyses of grief resolution predictors.

The severity of toddlers' disability parameters tended to vary by diagnostic group (see Table 8). Children with craniofacial anomalies tended to have higher AIR scores (F (1,61) = 4.13, $p < .05$), indicating more atypical physical appearance. However, children with neurological disorders exhibited greater functional impairment as indicated by FSI scores (F (1,59) = 43.21, $p < .001$) and GSR scores (F (1,59) = 31.87, $p < .001$).

Examining Continuous Predictors of Grief Resolution

Correlations among maternal demographics, child disability parameters, maternal psychosocial-coping variables, and continuous grief resolution scores were examined in order to compare findings with categorical grief ratings (above) and identify potential predictors of grief outcome.

First, maternal demographic factors were examined as potential predictors of grief resolution (see Table 9). Similar to findings with categorical grief classifications, the overall length of maternal responses during the RDI was related to an increased risk of unresolved grieving ($r = -.31$, $p < .05$). Elapsed time since the child's most recent diagnosis demonstrated a non-significant trend toward predicting grief resolution ($r = .33$, $p < .08$). Neither mothers' age, estimated intellectual functioning, nor SES were related to grief resolution.

Next, relations among different child disability parameters were examined in order to further examine the

Functional Severity Index, which was partly based on Bayley-II scores (see Table 10). FSI was observed to be strongly and negatively related to children's mental developmental equivalency ($r = -.64$, $p < .01$) and to children's motor development ($r = -.71$, $p < .01$). Further, children's FSI scores were significantly related to mothers' unresolved grief ($r = -.32$ with mothers' total grief resolution score, $p < .05$). However, children's mental development equivalency scores demonstrated only a non-significant trend toward predicting grief resolution ($r = .21$, $p < .10$), while children's motor development scores were not significantly related to grief resolution ($r = .20$, NS).

Similar to findings using categorical variables, children's GSR scores demonstrated moderate-strong negative relations with maternal grief resolution ($r = -.47$, $p < .01$). Strong positive relationships were observed between children's FSI and GSR scores ($r = .80$, $p < .01$), suggesting that these indices of handicap severity are measuring similar, but not entirely identical, constructs. Further, GSR correlations with Bayley-II mental ($r = -.68$, $p < .01$) and motor ($r = -.75$, $p < .01$) were consistent with those demonstrated by FSI scores. Children's Appearance Impact Ratings (AIR) demonstrated only a mild trend with mental development equivalency scores ($r = -.21$, $p < .10$), providing evidence of discriminant validity for the indices of functional severity. AIR scores were unrelated to FSI, GSR, or maternal grief resolution scores. Together, these findings suggest that the overall severity of children's birth defects, and particularly the global functional severity, is related to an increased risk of mothers' unresolved grieving.

With regard to maternal psychosocial variables (see Table 11), only approach coping was significantly related to grief resolution ($r = .26$, $p < .05$). Since approach coping was strongly related to higher perceived social support ($r = .50$), the partial correlation between approach and grief resolution was examined while controlling for perceived support. This left the predictive ability of approach virtually unchanged ($r = .27$, $p < .05$). These findings replicated the relations between maternal psychosocial variables and categorical grief classification (see Table 12). Only approach-coping was significantly related to grief resolution, with resolved mothers endorsing a greater orientation toward approach coping ($F(58,1) = 3.93$, $p < .05$).

Intercorrelations among the maternal psychosocial-coping variables were generally consistent with previous findings. The relation between approach and avoidance was a weak trend ($r = -.24$, $p < .06$), replicating previous findings (Atkinson et al., 1995) suggesting that these are distinct coping constructs. There was a small negative relationship between positive and negative affectivity ($r = -.34$, $p < .01$), supporting the contention that they reflect distinct dimensions of emotionality; however, their significant relationship was somewhat inconsistent with previous findings of no relation between these constructs (e.g., Lakey et al., 1994; McCaskill & Lakey, 1996; Watson et al., 1988). Perceived social support and hassles were unrelated. Perceived support was related to positive affectivity ($r = .32$, $p < .05$), but not to negative affectivity; parenting hassles were related to negative affectivity ($r = .36$, $p < .01$), but not to positive affectivity ($r = -.14$, NS), replicating previous findings (e.g., Lakey et al., 1994; McCaskill & Lakey, 1996) suggesting that perceived support and interpersonal stress (of which parenting hassles can be considered a form) are unique constructs that map onto the distinction between positive and negative affectivity.

Dysfunctional attitudes were unrelated to the coping variables, but they were related to trait emotionality in predictable ways. Positively-valenced dysfunctional attitudes were moderately related to positive affectivity ($r = .45$, $p < .01$); negatively-valenced dysfunctional attitudes were related to negative affectivity ($r = .30$, $p < .05$), positive affectivity ($r = -.27$, $p < .05$) and parenting hassles ($r = .34$, $p < .05$).

Main Analyses: Evaluation of the Psychosocial-Coping Model

Based on the observed pattern of correlations among the psychosocial predictor variables, two composite variables were created in an attempt to improve prediction of grief resolution, beyond that offered by Pearson correlations.

First, all maternal psychosocial variables (i.e., positive and negative affectivity, positive and negative dysfunctional attitudes, approach and avoidance coping, perceived social support, and total parenting hassles) were converted to standard scores (z-scores). Next, the standardized scores were grouped into two composites: 1) a "Positive" composite, consisting of PA, positively-valenced attitudes about birth defects, approach coping, and perceived social support; and 2) a "Negative" composite, consisting of NA, negative attitudes about birth defects, avoidance coping, and parenting hassles. Since the variables within each of the two composite groupings were positively correlated with each other, their individual z-scores were summed into total "Positive" and "Negative" factor scores, in preparation for regression analyses. Correlations between each of the psychosocial predictor variables and the two composite factors are presented in Table 13a.

Hierarchical regression predicting the continuous grief resolution score was conducted in order to evaluate the hypothesized model. Order of variable entry proceeding sequentially, beginning with those hypothesized to be more distally related to grief resolution and concluding with those thought to be more proximally related to grief. In this way, the unique predictive abilities of more proximal variables could be evaluated, controlling for the contributions of more distal factors. The dichotomized diagnostic group and ethnicity variables were dummy-coded and entered simultaneously on Step 1 (demographic factors), with toddlers' FSI and GSR scores simultaneously entered on Step 2 (child disability parameters), mothers' total number of words spoken in the RDI entered on Step 3, followed by the simultaneous entry of the Positive and Negative factors on Step 4 (psychosocial predictors).

The group of demographic variables (child diagnostic group, ethnicity) accounted for the largest portion of variance in grief resolution (R-square change = .28, F-change = 10.90, $p < .001$), followed by the child disability parameters, FSI and GSR (R-square change = .09, F-change = 3.78, $p < .05$). Length of mothers' interview responses evidenced a non-significant trend (R-square change = .03, F-change = 3.02, $p < .09$). Neither of the composite psychosocial factors predicted grief resolution beyond the demographics or child disability parameters (R-square change = .01, F-change = .36, NS). With all variables in the equation, toddlers' GSR demonstrated the strongest relation to grief resolution (Beta = -.48, t = 2.65, $p < .01$), followed by FSI scores (Beta = .47, t = 2.36, $p < .05$), diagnostic group (Beta = .39, t = 2.56, $p < .05$) and ethnicity (Beta = .26, t = 2.01, $p < .05$). The length of mothers' RDI responses (Beta = -.23, t = 1.88, $p < .07$) demonstrated a trend toward predicting grief resolution. The final model accounted for 41% of the variance in grief resolution (F(52,7) = 5.07, $p < .001$). Statistics for the hierarchical regression model are presented in Table 14.

A second approach to compositing the psychosocial predictors was undertaken in an attempt to improve prediction of grief resolution. Principle Components Analysis with Varimax rotation generated a two-factor solution which accounted for 52% of the common variance among the psychosocial-coping variables. The composition of these factors differed slightly from those based on primarily theoretical reasons. Factor 1 ("Affect, Attitudes and Hassles") was characterized primarily by trait affectivity, dysfunctional attitudes, and parenting hassles. Factor 2 ("Coping and Social Support") was characterized by coping orientation and perceived social support. The specific loadings of each psychosocial predictor on the two composite factors are presented in Table 13a.

For each subject, two factor scores (corresponding to the above 2-factor solution) were created by first multiplying each psychosocial predictor by its respective factor coefficient, resulting in two scores per psychosocial predictor -- one corresponding to the "Affect, Attitudes and Hassles" factor and the other corresponding to the "Coping and Support" factor. These scores were then standardized and summed within their respective groupings, according to the 2-factor solution (negative scores, based on a negative factor coefficient, were subtracted, rather than added to the total for a particular factor). This resulted in both an "Affect, Attitudes and Hassles" and a "Coping and Support" score for each subject. The factor score coefficients for each predictor are presented in Table 13b.

The hierarchical regression predicting mothers' grief resolution was then attempted a second time using the composite factor scores. Hierarchical entry again proceeded according to the hypothesized model, with more distal factors preceeding more proximal factors. Since mothers' perceived social support, approach and avoidance coping had all differed on the basis of ethnicity, an interaction term (Coping-Support x Ethnicity) was entered on the final step. The interaction was not significant and the factor-analytic approach to compositing psychosocial variables did not change the findings of the first hierarchical regression.

Prediction and Classification of Categorical Grief Variable

Since the continuous grief rating had been developed specifically for the current study, two approaches were taken to identify potential predictors of grief resolution at the categorical level (i.e., Resolved vs. Unresolved). First, logistic regression onto the categorical grief resolution was conducted, using hierarchical entry according to the hypothesized model. Demographics (diagnostic group and ethnicity) were entered on the first step, followed by child disability parameters (GSR and FSI) on the second step, length of mothers' interview responses on the third step, and the simultaneous entry of the two factor-analytically derived psychosocial composites (Coping-Support and Affect-Attitudes-Hassles) on the fourth step. The model with the best predictive ability included diagnostic group

(B = .61), ethnicity (B = .62), and GSR (B = .56), correctly classifying an average of 78% of the cases (80% of the Resolved cases and 76% of the Unresolved cases). Including all variables in the model actually reduced the accuracy of prediction, with an average of only 76% classified correctly (76% of the Resolved cases and 76% of the Unresolved cases). Length of mothers' interview responses, the Coping-Support factor and the Affect-Attitudes-Hassles factor were all unrelated to grief classification. Logistic regression statistics are presented in Table 15.

A third approach at identifying predictors of grief resolution was undertaken to compare results with those obtained via multiple regression. Discriminant Function Analysis (DFA) was used to predict grief classification, using diagnostic group, ethnicity, Global Severity Rating (GSR), Functional Severity Index (FSI), length of mothers' interview responses, and the two psychosocial composite factors (Coping-Support and Affect-Attitudes-Hassles). The discriminant function had an eigenvalue of .45 and correctly classified an average of 76% of the cases (80% of the Resolved cases and 72% of the Unresolved cases; Chi-square (7) = 17.87, $p < .01$). Diagnostic group, length of mothers' interview responses, GSR, ethnicity and FSI primarily defined the discriminant function, with only one of the psychosocial composite factors ("Coping & Support") demonstrating a small, non-significant loading ($r = .26$) on the function. The specific correlations of each variable with the discriminant function are presented in Table 16a.

Since the subject:variable requirements are less stringent for discriminant function analysis than for multiple regression (Tabachnick & Fidell, 1989), a second DFA was performed with each psychosocial-coping variable entered separately, rather than using the two composite factors. This approach yielded a single discriminant function with an eigenvalue of .58, correctly classifying an average of 78% of the cases (80% for Resolved, 76% for Unresolved; Chi-square (13) = 20.68, p < .08). The following variables, listed in descending order of the strength of their relationships, significantly defined the discriminant function: diagnostic group, length of RDI responses, GSR, ethnicity, FSI, negatively-valenced dysfunctional attitudes and approach coping. In both analyses, the discriminant functions were defined by essentially the same variables in the same order of magnitude. Specific variable loadings on the discriminant function are presented in Table 16b.

Discussion

This study sought to identify predictors of mothers' resolution of grief related to their child's handicap diagnosis. The only other studies directly examining this topic (e.g., Marvin and Pianta, 1996; Pianta et al., 1996) found no relations between grief resolution and child disability parameters (e.g., diagnosis, mental or motor development), as well as no relation between grief resolution and family demographics (e.g., SES, mothers' marital status). Recent studies of maternal coping with children's chronic health problems (e.g., Thompson et al., 1994) have suggested that psychosocial coping variables mediate the relations between handicap parameters, demographics and maternal psychological adjustment. The current study attempted to evaluate a similar model and identify psychosocial variables that predict grief resolution, beyond any disability parameters or family demographics.

Overall, 56% (35/63) of the mothers in our sample were classified as having unresolved grief reactions related to learning of their child's diagnosis. This is consistent with rates of unresolved grief obtained in the only two other studies on this topic (53% in Marvin & Pianta, 1996; 52% in Pianta et al., 1996). Across all analyses, demographic factors (i.e., children's diagnostic group and, to a lesser extent, family ethnicity) and child disability parameters (the overall severity of children's handicaps) were predictive of grief resolution. The length of mothers' interview responses consistently emerged as a trend, occasionally emerging as a significant predictor in addition to demographics and child disability parameters. However, the psychosocial-coping variables did not predict grief resolution beyond demographics and disability parameters. Approach coping demonstrated a significant bivariate correlation with grief resolution, but did not predict grief beyond disability parameters and demographics.

Discussion of these findings will proceed according to the hypothesized model, beginning with demographics (which had been hypothesized to be the group of variables most distally related to grief resolution), followed by child disability parameters, and concluding with maternal psychosocial-coping variables (hypothesized to be the most proximally-related to grief resolution). Finally, strengths and limitations of the current study will be outlined, and suggestions for future research will be provided.

Demographic Findings

Although there were no relations between grief resolution and family socioeconomic status (SES) or mothers' marital status, significant ethnic differences were identified. Specifically, higher rates of resolved grieving were observed in Caucasian mothers compared with ethnic minority mothers (primarily African-Americans). Mothers' ethnicity, marital status and SES were interrelated -- minority mothers were more often single and from lower SES situations, and single mothers tended to have lower SES ratings. However, the relation between ethnicity and grief resolution remained significant, even when the effects of marital status and SES were statistically controlled.

Upon further inspection, ethnic differences in rates of grief resolution appeared to be at least partly related to ethnic differences in the epidemiologies of the broad diagnostic categories included in our sample. As indicated above, a greater likelihood of resolved grieving was observed in mothers of children with craniofacial anomalies and 84% of these mothers (21/25) were Caucasian. Of the four minority mothers of children with craniofacial anomalies, three were African-American (the other was Hispanic-American). These representations are somewhat consistent with epidemiological data suggesting that craniofacial anomalies are nearly twice as prevalent in Caucasians as in African-Americans (Vandera, 1987). By comparison, Caucasians and ethnic minorities were equally represented in the sample of neurological disorders (19 in each group, with 17/19 minorities being African-Americans). However, a greater likelihood of unresolved grieving was observed in mothers of children with neurological disorders, compared with mothers of children with craniofacial anomalies. These findings suggest that differences in grief resolution were primarily related to child diagnosistic factors, with some of the apparent effects of ethnicity reflecting an artifact of diagnostic epidemiologies. The series of multiple regressions examining the unique predictive abilities of diagnosis and ethnicity support this contention.

There were no relations between grief resolution and maternal age, estimated intellectual functioning, or elapsed time since receiving their child's diagnosis. However, mothers classified as Unresolved tended to provide longer responses to the Reaction to Diagnosis Interview, a finding that was not anticipated. Informal observations of the verbal and affective content of mothers' interviews, as well as the extent to which mothers' responses were organized and coherent, suggest that mothers classified as Unresolved tended to provide responses that lacked a coherent conceptual framework for describing their experiences, contained more negative (e.g., anger, sadness) and/or inappropriate affect (e.g., pervasive blaming that interferes with realistic coping needs, or denial of any affective responses), and evidenced more fixation on the event of learning of their child's diagnosis. With hindsight, this finding is not especially surprising, given the basic criteria for classification of RDI responses include: a) The extent to which responses are coherent, fluent and pertinent; b) The extent to which expressed affect is appropriate to context and effectively managed by the respondent, as opposed to being overwhelming, pervasive, or inappropriately absent; and c) The extent to which parents have accepted their child's diagnosis (including the lack of medical explanations for the etiology of the diagnosis), rather than continuing to search for reasons for their child's handicap which may be unavailable, given current scientific knowledge (Marvin & Pianta, 1996; Pianta et al., 1996).

Indirect support for the relation between length of interview response and lack of grief resolution is provided by previous findings that rumination and excessive self-focused analysis are associated with greater psychological distress following negative events (Nolen-Hoeksema, 1996), more difficult adjustment to trauma (Lyubomirsky & Nolen-Hoeksema, 1995), and complicated bereavement one year after the death of a romantic partner (Nolen-Hoeksema, McBride, & Larson, 1997). In our sample, those mothers who provided longer interview responses and who demonstrated unresolved grieving may have been ruminating on topic(s) of continuing concern to them, possibly reflecting attempts to ascribe some sense of order or meaning to their experience related to their child's birth defects. In this way, ruminative and/or excessive interview responses may have reflected mothers' on-going attempts to cognitively assimilate events and adjust to their child's condition, a process which has been described as integral to grief resolution (e.g., Bowlby, 1980; Emde & Brown, 1978; Marvin & Pianta, 1996; Pianta et al., 1996; Weiss, 1983). This possibility is supported by findings (Weiss & Richards, 1997) suggesting that the extent to which the event of a romantic partner's death could more easily be assimilated, both cognitively and emotionally, was predictive of grief outcome one year post-loss. Therefore, the overall length of mothers' responses in the current study may be a marker for more specific indices of outcome, such as on-going attempts to assimilate the experience of learning of their child's handicaps into long-standing mental models of the self in relation to the world, and develop an orientation toward current coping needs.

Child Disability Parameters

A relation between child diagnostic group and maternal grief resolution had not been predicted; however, such a finding emerged consistently. Mothers of children with neurological disorders were more likely to evidence unresolved grieving than were mothers of non-neurologically impaired children with craniofacial anomalies. Initially, this finding appeared inconsistent with those of Marvin and Pianta (1996) and Pianta et al. (1996), who found no relation between grief resolution and diagnsosis. However, these studies only compared children with either cerebral palsy or epilepsy, both of which are neurological disorders. Our sample compared children with more salient differences between broad diagnostic categories. Therefore, the processes involved in grief resolution may be somewhat different for parents of children with fundamentally different birth defects. Several factors that tend to vary by diagnostic condition may begin to account for these differences in grief resolution, including the functional severity of a child's condition, severity of a child's physical appearance anomalies, the nature of the diagnostic event (or the diagnostic process, to be elaborated below) and the prognoses associated with different diagnostic categories, including the type and extent of treatments involved.

Consistent with prior research in this area (e.g., Marvin & Pianta, 1996; Pianta et al., 1996), we found no significant relations between children's developmental equivalencies and maternal grief resolution. However, relations between the overall severity of children's conditions and mothers' grief resolution were consistently found. Two ratings developed specifically for this study attempted to capture the general impact of a child's birth defects on their functional capabilities as observed in practical daily activities, rather than estimating condition severity based simply on developmental level or a symptom-frequency count. The Functional Severity Index (FSI) was based on the average discrepancy between a child's chronological age and his/her functional level in both mental and motor skills. The Global Severity Rating (GSR) was an observational rating of the extent to which a child was able to successfully operate on his/her environment, including any compensation for specific handicaps, relative to same-age peers. Both the FSI and the GSR were consistently related to mothers' grief resolution, suggesting that functional impairment relative to age-expectations may be the salient variable related to parental psychological adjustment, rather than simply considering developmental delays. There were no relations between children's ages or the severity of physical appearance anomalies and maternal grief resolution, the implications of which will be discussed shortly.

Examining children's FSI, GSR, and physical appearance severity (AIR) scores across diagnostic groups supported a priori hypotheses. Children with neurological disorders had significantly higher ratings of functional severity, whereas children with craniofacial anomalies had higher appearance anomaly ratings. Children's physical appearance was unrelated to functional severity. These findings are consistent with the observed relations between diagnostic group and grief resolution, in that children with neurological disorders tend to exhibit greater functional impairment and their mothers are more likely to exhibit unresolved grief reactions. Therefore, the overall practical, or functional, severity of a child's condition is one factor that tended to vary by diagnostic group <u>and</u> that was systematically related to grief resolution.

The lack of a relationship between physical appearance anomalies and grief resolution suggests that, while mothers may indeed have emotional reactions to their child's anomalies (especially initially), this factor may not play a pivotal role in mothers' grief resolution. However, it may also be the case that <u>improvements</u> in a child's physical appearance over time (associated with reconstructive surgeries) may have gradually reduced the impact of this factor on maternal adjustment by the time mothers were interviewed for the current study. Although time since diagnosis was not related to grief resolution, mothers of children with craniofacial anomalies were interviewed an average of almost 24 months post-diagnosis, compared with an average of just over 18 months for mothers of neurologically-impaired children. The implications of this finding are discussed below.

Elapsed time since diagnosis may serve as a marker variable for fundamental differences between the treatment strategies and prognoses of the two diagnostic groups. For example, the physical appearance of children with cleft lip and palate is typically positively modified with a series of corrective surgical procedures beginning at about 3 months of age, such that clues to the existence of birth defects may be greatly reduced or even undetectable by early childhood or adulthood (Munro, 1995; Shepard & Magai, 1995). By the time of their participation in the current study, 92% of the children with craniofacial anomalies had had at least one reconstructive surgical procedure and 28% had been hospitalized at least once. Therefore, mothers of children with craniofacial anomalies may have observed improvement in their child's physical appearance (or even a <u>lack</u> of deterioration in their child's appearance), and witnessing this improvement may play a role in mothers' grief resolution process. By the same token, mothers may have felt more able to play an active role in their child's treatment, by virtue of participation in treatment planning, attendance at doctors' appointments, and presence both before and after their child's surgeries. However, these mechanisms must remain speculative at this point.

Compared to children with craniofacial anomalies, the prognoses for children with neurological disorders are often less predictable, depending on the severity of initial impairment and complications by other health problems, such as cognitive impairment, seizures, respiratory disturbance, GE reflux and/or failure-to-thrive (Nelson, Swaiman, & Russman, 1994). Of the children with neurological disorders, 20% had been hospitalized at least once (12% more than once) and 56% had had at least one surgical procedure (28% more than one). Frequency of occurrence for hospitalizations was not different across diagnostic groups, but children with craniofacial anomalies had more surgical procedures completed (92% vs. 56%). As with the craniofacial group, mothers' perceptions of change in their children's functioning were not formally obtained for the neurological group, nor were mothers' descriptions of their roles in children's treatment plans. It may be that variable responses to treatment interventions and/or variable functional changes over time in the children with neurological disorders may complicate their mothers' grief resolution efforts, in that their conditions may be more confusing or frustrating to manage.

A measure of mothers' perceived parenting hassles was included to assess the extent to which mothers experience stress or frustration related to caring for their handicapped child. However, scores on this variable did not differ by diagnostic group and they were unrelated to grief resolution. Further inspection of the items on this measure suggest that it asked mothers to assess the degree of hassles related to discrete caregiving events. While mothers' ratings may have been partly influenced by their subjective experiences of stress related to caregiving, it may be that the component of maternal frustrations related *specifically* to caregiving is not the component linked with grief resolution. Rather, it may be the case that maternal concerns for their child's well-being, rather than personal frustrations related to daily caregiving hassles, are the link with grief resolution. Specifically, mothers' frustrations related to the lack of clear, definitive professional guidance regarding the etiology, treatment and/or prognosis for their child's condition may be related to the grief resolution process. If this is the case, mothers' expectations for their child's prognosis, mothers' perceptions of their roles in their child's treatment, and mothers' perceived coping efficacy would all need to be assessed.

The nature of the diagnostic event itself may also account for differences in grief resolution between the mothers of craniofacial and neurologically-impaired children. A review of children's medical records indicated that, on average, craniofacial diagnoses had been confirmed at birth or within 2 weeks of the child's birth. However, primary neurological diagnoses had not been confirmed until an average of over 7 months following the child's birth, a difference that was statistically significant ($F(61,1) = 19.12$, $p < .001$). Mothers of neurologically-impaired children certainly had less elapsed time, on average, between the confirmation of their child's diagnosis and participation in the study. Therefore, mothers of neurologically-impaired children may have had less time to adjust to the diagnosis before their participation in the study, resulting in greater incidence of unresolved grieving relative to mothers of children with craniofacial anomalies. This finding would be consistent with the suggestion that grief resolution involves assimilation of the loss experience into existing mental models, a process that most likely occurs over time (Bowlby, 1980).

An alternative perspective involves the amount of time that elapsed <u>before</u> a child's diagnosis was confirmed. The majority of children with craniofacial anomalies had diagnoses confirmed at or near birth (mean = 0.4 months of age, ranging from 4 months' gestation to 10 months of age), but children with neurological disorders were an average of just over 7 months old by the time their primary diagnosis was confirmed (sd = 7.39 months, ranging from 7 months' gestation to 20 months of age). These differences in elapsed time before confirmation of a diagnosis are probably systematically related to the nature of the disorders. Craniofacial anomalies are typically visible and easily confirmed by the time of birth, such that diagnosis is more likely to be a discrete event. However, neurological disorders usually are not as clearly recognizable until the child is older, except for extremely severe cases. For example, cerebral palsy is typically not diagnosed until a child is at least 10-12 months of age (Nelson et al., 1994). Possible precursors of cerebral palsy (e.g., abnormalities in muscle tone, developmental delays, intraventricular hemorrhage, respiratory difficulties) are often identifiable early in infancy, as well as their functional implications (e.g., difficulties with feeding, movement and/or temperament) (Barabas & Taft, 1986; Paneth, 1986; Taft, 1984). However, due to normal variabilities in infant growth and development, specific problems may be identified and treated, but more definitive neurological syndromes may not be diagnosed until developmental delays become significant relative to age-expectations. Therefore, mothers may recognize and attempt to address their children's difficulties for several months before an official diagnosis (and thus some explanatory factor) is confirmed.

In the current study, many of the mothers of children with neurological disorders described recognizing symptoms of their child's functional impairment early on and then spending upwards of several months attempting to convince others (e.g., relatives, friends, health-care professionals) that objective problems actually existed. Several mothers indicated that they were overtly dismissed as "anxious parents" and/or that they doubted their own "sanity" at times, as they attempted to convince others of the veracity of their observations. At the very least, many mothers described feeling very confused as they attempted to reconcile their observations of functional difficulties in their children with the lack of official confirmation of any problems. By comparison, most mothers of children with craniofacial anomalies described the diagnostic event as a rather clear, definitive and immediate event. Therefore, while the craniofacial diagnostic event may typically be clear and discrete, neurological diagnoses may often unfold over time in a relatively ambiguous, confusing process (from the parent's perspective).

This phenomenon may become even more salient in the growing emphasis on managed care models of health care, where patients may not always be seen by the same physician at each clinic appointment, thus increasing the risk that each evaluation will be a discrete event and continuity of care may be compromised. Neurological disorders, which already can be ambiguous and difficult to diagnose initially, may be even more likely to be missed if a child's functioning is not evaluated in the context of development over time. Mothers who, by virtue of insurance coverage limitations, do not have the luxury of choosing their physicians may find it even more difficult to convince health-care professionals that something is wrong with their child's development if a different physician evaluates their child at each appointment. This problem may be more likely to occur in families from lower SES backgrounds who are more likely to lack the financial resources and/or insurance coverage to ensure consistent, high-quality health care, but must rely on walk-in community health clinics or hospital emergency rooms for the majority of their health care needs.

Psychosocial Coping Models

Maternal psychosocial-coping variables were hypothesized to account for the largest amount of variance in grief resolution, and were expected to predict grief resolution beyond child disability or demographic factors. However, the results did not support these hypotheses. Hierarchical regressions were used to evaluate this hypothesis, with theoretically more distal factors entered in the first steps and those hypothesized to be more proximal to maternal adjustment in the last step, in order to evaluate their relative predictive abilities. Multiple regressions onto the continuous grief resolution score suggested that the severity of children's conditions (GSR and FSI), broad diagnostic groupings, and family ethnicity were significant predictors, with trends observed for the length of mothers' interview responses. Logistic regression onto the categorical grief ratings were similar and indicated that children's diagnostic groupings, global severity rating, and ethnicity were the only significant predictors of maternal grief resolution.

An alternative approach used discriminant function analysis to identify a comination of variables that might classify grief resolution. Using this approach, children's diagnostic group, condition severity (GSR and FSI), ethnicity, and the length of mothers' interview responses loaded significantly on the single discriminant function. A composite variable (composed of maternal approach and avoidance coping, and perceived social support) had a small, but non-significant loading on the discriminant function.

As discussed above, both the nature of the diagnostic processes associated with the two broad categories (neurological vs. craniofacial) and the extent to which children's conditions handicapped their practical daily activities appeared to be the most salient factors predictive of mothers' grief resolution. The practical significance of children's handicap severity includes, not only the extent to which children may require assistance in performing activities (e.g., communication, social interaction, self-help), but also the extent to which parental expectations for children's behavior are consistent with children's functional abilities. Both of these issues may tax parental emotional and/or physical coping resources. Parental developmental expectations were not directly assessed as part of the current study, but two variables that *were* assessed point to their salience with regard to grief resolution: 1) Children's Functional Severity Index was defined as the discrepancy between children's chronological ages and developmental equivalencies, and 2) The Reaction to Diagnosis Interview Classification System includes the global accuracy of parental appraisals of their child's functioning and prognosis, based on available information, and parental sensitivity to their child's needs as relevant factors in considering the adequacy of parental adjustment. Therefore, the extent to which parents are able to clearly and readily attain some explanation for their child's difficulties, and the extent to which parents are able to accurately represent their child's special needs and adjust their caregiving accordingly, both may play salient roles in parental psychological adjustment to their child's condition.

It has also been suggested that rumination (and, for purposes of the current discussion, excessive interview response lengths) reflects excessive engagement in approach, relative to avoidance coping, and that rumination is related to increased psychological distress by virtue of an inability to effectively modulate affect through the intermittent use of approach and avoidance coping strategies (Horowitz, et al., 1979; Lazarus, 1991). However, length of mothers' interview responses (which may reflect on-going attempts to cognitively assimilate, or come to terms with, the diagnostic event) was unrelated to approach, avoidance, or positive or negative affectivity. Length of interview responses was related to negatively-valenced dysfunctional attitudes about birth defects (r = .30, p < .05), and the presence of dysfunctional attitudes may be related to ruminative activity. The partial correlation between grief resolution and length of interview responses, controlling for dysfunctional attitudes, was relatively unchanged from the zero-order correlation (from r = -.24, p = .06 to p(r) = -.22, p < .10). Alternatively, controlling for length of interview responses reduced the already non-significant relationship between negative dysfunctional attitudes and grief resolution practically to the point of non-existence (from r = -.08, NS to p(r) = -.01, NS). Therefore, although length of interview responses and dysfunctional attitudes were significantly related, their relationship did not overlap with grief resolution. Alternatively, difficulties with cognitively disengaging from ruminative activity in order to enact instrumental coping responses, rather than ruminative activity per se', may be the mechanism related to unresolved grieving.

Examination of Relations Among Psychosocial-Coping Variables

A possible explanation for the lack of significant relationships between psychosocial-coping variables and grief resolution may involve the nature of the grief resolution construct itself. The measure of grief resolution used in the current study is multi-faceted: it not only involves assessment of affective experience, but also change in affective experiences over time, attributions about the events and one's coping efforts, focus of one's coping efforts (e.g., self, child, doctors, others), and the extent to which one's assessment of these variables is organized, coherent, and fluent. Moreover, the Reaction to Diagnosis Interview assesses adjustment, including affective and coping experiences, related to a relatively circumscribed event (i.e., learning of a child's diagnosis), rather than general psychological distress. Therefore, classification of grief resolution involves an integrative multi-dimensional assessment of a subject's current experiences with their child's diagnosis, relative to their immediate reactions at the time of the diagnostic event (based on their recall of this event). However, previous studies involving the psychosocial-coping variables included in the current study have tended to link positive and negative affectivity (e.g., Watson et al., 1988), dysfunctional attitudes (Beck et al., 1979; Weissman & Beck, 1978), approach and avoidance coping (Atkinson et al., 1995), perceived social support (e.g., Lakey and Cassady, 1990; Lakey et al., 1994) and parenting daily hassles (e.g., Crnic and Greenberg, 1985, 1990) with measures of general psychological distress or specific affective distress (e.g., depression, anxiety). It is possible that positive and negative affectivity, dysfunctional attitudes, approach and avoidance coping, perceived hassles and perceived social support _are_ related to the style in which an individual resolves grief experiences, rather than grief outcome as was assessed in the current study.

Results of the current study suggest that differences in grief resolution were related primarily to child diagnostic factors, but that ethnicity may partly account for some of the differences in grief resolution. However, the exact extent to which diagnostic group and ethnicity were confounded remains somewhat unclear. Current results also suggest some differences in psychosocial-coping variables on the basis of ethnicity. Ethnic minority mothers reported less use of approach and more use of avoidance coping, as well as lower perceived social support and fewer parenting hassles, compared with Caucasian mothers. Partial correlations between these psychosocial variables and ethnicity remained significant when controlling for SES, whereas controlling for ethnicity eliminated any significant relations to SES. The same was true when marital status was controlled, suggesting that ethnic differences in the psychosocial-coping variables did not simply reflect differences in social or economic conditions.

A complete examination of the nature of ethnic differences in coping, the style of grief resolution, or the expression of grief reactions was beyond the scope of the current investigation. However, future studies designed specifically to understand ethnic differences in parental reactions to their child's diagnosis, the expression of parental reactions to their child's diagnosis, parental coping with children's birth defects, and long-term parental adjustment to their child's handicaps are clearly needed. For example, future studies may wish to emphasize equal representation of several ethnic groups in order to more adequately compare differences among ethnic groups. Additionally, future studies utilizing the Reaction to Diagnosis Interview as a dependent measure should make it a point to have both the administration and scoring of this instrument conducted by persons from several different ethnic backgrounds, to more fully examine possible ethnic biases in the assessment of grief resolution.

Another possible explanation for the lack of significant relationships between most of the psychosocial-coping variables (except for approach) and grief resolution involves the extent to which the variables in this study reflect trait-like characteristics as opposed to more specific, situational coping responses. It had been reasoned that more trait-like characteristics would influence long-term grief outcome via acute responses to the diagnostic event -- trait characteristics would predispose mothers to a particular configuration of affective and coping responses (McCrae & Costa, 1991; Watson & Clark, 1984; Tellegen, 1985), and these trait-like orientations would influence grief resolution above and beyond social-environmental and child disability parameters. However, our results suggest that grief resolution is less dependent on trait-like characteristics than had been hypothesized, but rather more related to child disability and demographic parameters.

Some authors (e.g., Stein, Folkman, Trabasso, & Richards, 1997) have suggested that more situational coping-appraisal processes (i.e., those more proximally related to psychological experiences associated with a specific event) are more strongly related to long-term psychological adjustment to loss than are pre-existing personality variables. Further, the same authors have suggested that social and/or interpersonal conditions existing at the time of the loss also may play a stronger role in influencing both situational grief responses and long-term grief resolution than pre-existing personality characteristics.

Alternatively, given that child handicap severity and diagnostic category were consistently the strongest predictors of grief resolution, it may be that the severity or chronicity of children's birth defects predicts long-term parental adjustment (operationalized here as grief resolution outcome), whereas acute parental reactions to the diagnostic event might be predicted by trait-like personality characteristics. Birth defects are, by definition, permanent; however, the extent to which their practical (i.e., visible and/or functional) implications can be ameliorated, corrected, or adequately modified varies by condition. In the current study, a greater likelihood of resolved grieving was observed in mothers of children with craniofacial anomalies, a broad diagnostic grouping typically associated with more tangible progress and a clearer prognosis. Neurological disorders, in contrast, are more variable in terms of their responses to treatments and their prognoses. In the case of neurological disorders, not only may condition severity play a role in parental adjustment, but also chronicity, as the condition may never abate pragmatically.

Another variable of possible importance to both acute parental reactions to the diagnostic event and long-term parental adjustment to their child's condition involves the manner in which the diagnosis is first discussed with parents and the general interpersonal style of the health-care professional involved in this discussion. There is some evidence to suggest that socioemotional processes play just as strong a role as, if not stronger than, more objective aspects of service delivery in parental ratings of satisfaction with their child's physician (Worchel, Prevatt, Miner, Allen, Wagner, & Nation, 1995). In the study cited here, parental satisfaction with their child's pediatrician was predicted by the extent to which parents perceived the doctor to have met their expectations for communication and involvement in their child's care. The extent to which parents perceived pediatricians as being interpersonally sensitive (e.g., patiently and sensitively addressing their concerns, treating them with respect) was the strongest predictor of parent satisfaction. The extent to which parents felt that pediatricians involved them as partners in their child's care and the extent to which parents felt that their needs for information were met accounted for smaller, but significant, portions of the variance in parent satisfaction ratings. Many mothers in the current study discussed the nature of their contact with health-care professionals as being germane to both their acute reactions to learning of their child's diagnosis and their on-going adjustment over time (e.g., one mother classifed as "Resolved" recalled that her OB/GYN specialist directly, but sensitively, described her son's cleft lip and palate immediately post-partum, and offered confident reassurance by outlining the treatment plan and likely prognoses; on the other hand, a mother classified as "Unresolved" perceived health-care professionals as being abrupt and evasive by labelling her child's condition and indicating the lack of certainty regarding the cause of the condition). Parental perceptions of the interpersonal aspects of the diagnostic event, as well as their ratings of subsequent contacts with the same physician and other professionals over time, may prove interesting in terms of understanding the process of grief resolution.

Grief is, by definition, a multi-faceted experience (Bowlby, 1980; Marvin & Pianta, 1996; Marwit, 1996; Pianta et al., 1996; Sanders, 1980; Weiss, 1983) and resolution of grief appears to be a somewhat complicated, and to varying degrees gradual, process. Grief resolution does not appear to involve the simple reduction of symptomatology on a unidimensional measure of psychological experience, nor does it seem to involve a linear association between coping resources and grief outcome. Moreover, it is important to recall that resolution of grief related to learning of a child's birth defects (i.e., the loss of the "idealized" child) is not equivalent to resolution of grief related to loss via death. Future studies should take care to discriminate these events by examining similarities and differences in factors related to positive outcome across these two events.

The cross-sectional design of the current study does not allow conclusions about causality, nor an adequate assessment of proximal conditions that may influence acute maternal grief responses and thus grief resolution over time. However, future studies should be conducted as closely in time to the diagnostic event as possible, in order to assess the circumstances surrounding acute grief responses (including trait-like personality and coping constructs, pre-existing social and environmental factors, concurrent social and coping resources, acute emotional and attributional responses to the event, subsequent behavioral coping responses, and changes in these variables over time). Longitudinal research, designed to begin as closely as possible in time to the diagnostic event, might be able to elucidate the relations between personality characteristics, social-environmental resources, acute reactions, coping processes, and long-term outcome. Ideally, such a project would begin with the identification of mothers at risk for having a child with birth defects (e.g., mothers with a history of delivering babies prematurely and/or with low birth weight), so that personality, coping, and psychological adjustment variables could be assessed prenatally.

Obviously, a longitudinal design would enable a better assessment of factors related to change in grief experiences over time. The nature of the issues under investigation will make such a study difficult to conduct, but necessary nonetheless. Parents will need to be approached with great sensitivity to their distress and to the urgency (both objective and perceived) of the situations surrounding their child's health. It is possible that members of treatment teams associated with hospitals' Neonatal Intensive Care Units will be in advantageous positions to undertake such an investigation, possibly as part of interventions for parents of infants born at high risk for developmental and/or chronic health problems (e.g., those born prematurely and/or with low birth weight).

Results of the current study suggest that effective parental adjustment to their child's birth defects might be assisted via attention, not only to the manner in which a child's diagnosis is first discussed with parents, but also to the manner in which parental concerns are addressed across time, regardless of health-care professionals' assessments of the veracity of parental concerns. By and large, mothers in the current study described appreciating forthright, patient, and socially and emotionally sensitive contacts with health-care professionals, wherein their concerns were taken seriously, both known and unknown aspects of their child's condition were discussed directly and openly, and with treatment plans discussed to whatever extent possible. Moreover, health-care professionals may do well to be mindful of the possibility that parents' repeated questions over time, or recurrent difficulties in understanding their child's condition and/or specific caregiving needs, may reflect on-going attempts to cognitively assimilate and emotionally come to terms with their child's condition, as opposed to resistance or treatment non-compliance.

Appendix A

ID#____________ **Examiner**____________ **Date**____________

THE REACTION TO DIAGNOSIS INTERVIEW

1. When did you first realize that [child] had a medical problem? (Probe for details)

2. What were your feelings at the time of this realization?

3. How have these feelings changed over time?

4. Tell me exactly what happened when you learned of your child's diagnosis. (Where were you? Who else was there? What were you thinking and feeling at that moment? Have these feelings changed since then?)

5. Parents sometimes wonder or have ideas about why they have a child with special needs. Do you have anything like that that you wonder about?

<u>For example</u>: Some parents feel that they might have done something to contribute to their child's condition, others believe that God must have a reason for giving them this child. What do you wonder about?

Appendix B

Total Grief Resolution Scale

Part I: Resolved Indices

Score each of the seven criteria, regarding the extent to which each is reflected in the interview, according to the following 5-point scale:

1 = Very Slightly or Not at All
2 = Somewhat
3 = Moderately
4 = Quite a Bit
5 = Extremely

1) Acknowledgment that the experience of the diagnosis was difficult.
1-----2-----3-----4-----5

2) Recognition of change (i.e., in personal affect, attitudes, coping, general functioning, and well being) since the time of diagnosis.
1-----2-----3-----4-----5

3) Acceptance of the child's condition, with a focus on the present and the need to move on in life.
1-----2-----3-----4-----5

4) Suspension of active or "frantic" searches for existential reasons or causes for the child's condition.
1-----2-----3-----4-----5

5) Relatively accurate perceptions of the child's functional capabilities and expectations for the future.
1-----2-----3-----4-----5

6) Balance between an acknowledgment of personal growth/benefits related to the situation and acknowledgment of difficulties to self (the larger context involving child difficulties and limitations).
1-----2-----3-----4-----5

7) Effective executive control during the interview, with an ability to recall details flexibly and relatively fluently (e.g., does not lose train of thought or, if so, reorients self to prevent self-contradiction), and experience affect appropriate to context and manage it so that the parent does not become overwhelmed or disconnected (e.g., is not rambling, disorganized, or incoherent).
1-----2-----3-----4-----5

Part II: Unresolved Indices

Score each of the seven criteria, regarding the extent to which each was evidenced during the interview, according to the following 5-point scale. Note that this scale is <u>reverse-keyed</u>, compared with the Resolution Scale.

1 = Extremely
2 = Quite a Bit
3 = Moderately
4 = Somewhat
5 = Very Slightly or Not at All

1) Cognitive distortions related to the child's functional capabilities, expectations for the child's prognosis, beliefs about the cause of the child's condition, or the presence of the child's handicap (e.g. denial, wished-for realities);

1-----2-----3-----4-----5

2) Active continuation of search for reasons or causes of the child's condition, in conflict with the demands of reality (e.g., failure to accept a definitive lack of medical knowledge or the possibility that there may be no discernible cause; searching to the detriment of appropriate child care);

1-----2-----3-----4-----5

3) Affect strong or pervasive enough to suggest that the mother is disoriented by being "stuck in the past" (e.g., using present tense while discussing the past; presenting as overwhelmed, as if the event were on-going or currently being experienced; strong, pervasive, or unfocused anger or blaming);

1-----2-----3-----4-----5

4) Boundary violations (e.g., attempts to draw the interviewer into collusion against medical personnel);

1-----2-----3-----4-----5

5) Excessive focus on the self (e.g., identification as a victim or survivor, to rationalize painful affect; focus on hardships or benefits to the self from coped with this situation, to neglect of child considerations);

1-----2-----3-----4-----5

6) Disorientation, disorganization, confusion, or incoherence in parental responses (e.g., losing one's train of thought and contradicting oneself), suggesting lack of organized mental framework or strategy with which to communicate about the experience;

1-----2-----3-----4-----5

7) Tending to minimize or deny any emotional impact on the self, at any point in time (e.g., excessive focus on event-related details so that affective content is effectively neutralized; evident uncertainty and/or need for reassurance about the appropriateness and efficacy of parental coping efforts; abrupt changes in topics; objectification of the child and/or birth defects, such as speaking about the child in the abstract), or a tendency to be cut off from the experiences related to the events of diagnosis and/or initial realization of child health problems (i.e., impaired recall, episodic memory and/or affect sufficiently unavailable).

1-----2-----3-----4-----5

Appendix C

Appearance Impact Rating Scale

Subject #MT-________ **Date ___________**

Tape Segment Viewed: Start Time ________ **Stop Time ________**

View the 2-minute segment, during the Bayley, containing the close-up of the child's facial appearance. Note all aspects of the child's physical appearance -- facial expressions, facial features, posturing, etc. Try to imagine how the child would look to you if you had a still-shot, or snapshot, of them. Imagine whether the child would stand out to you if you were viewing them amongst a large group of children on a playground. As you observe the child, pay attention to your emotional reactions to their appearance, as well as any thoughts that occur to you (e.g., concern for the child, pity, empathy, amazement, sorrow, joy, gratitude, thoughts about how other people may treat the child, thoughts about how the child's peers may react). Merely observe your internal reactions, and don't be concerned with what you think you should be feeling or thinking about the child. Immediately after viewing the taped segment, please choose one of the following to represent your general impression after watching the child. Choose only one rating. If you have trouble choosing, go with your "gut reaction."

1 = No apparent anomalies in physical appearance, relative to other children of similar age. You didn't notice anything unusual.

2 = Some slight oddities in physical appearance, but you had to study the child carefully to make this determination. Little, if any, concern for the child, based on physical appearance.

3 = Moderate appearance anomalies that are immediately noticeable, but are not too distracting once you acclimated to the child. Acclimation took only a few moments and occurred well before the videotaped segment was completed. Your degree of discomfort or concern for the child was mild, moderate at most.

4 = Significant physical anomalies that elicited your concern, or even some distress. Physical anomalies appeared to interfere with the child's social interactions (based on observed interactions with mother and/or examiner). You may or may not have completely acclimated to the child's appearance, and your concern or discomfort with viewing the child was of moderate severity.

5 = Severe anomalies that were omnipresent and/or remained distracting to you throughout the videotaped segment, or that were emotionally upsetting for you to view. Your degree of discomfort was of a moderate-severe degree.

Appendix D

Global Functional Severity Rating Scale

Subject #MT-________ **Date ____________**

Tape Segment Viewed: Start Time ________ **Stop Time ________**

This rating will be based on viewing a 6-minute segment of the parent-child interaction sequence. Using the "Filmer Guideline" sheet that accompanies each subject's videotape, find the point on the tape where the "distraction" component is added to the on-going parent-child interactions (i.e., "Parent-Child Interaction w/Distraction"). Then, rewind the tape so that you start viewing exactly 3-minutes <u>before</u> the distraction is added, and then conclude your viewing exactly 3-minutes <u>after</u> the distraction was added. In other words, the first 3 minutes of your viewing will include "freestyle" parent-child interactions and the last 3 minutes will include more structured interactions. This will enable a comparison of the child's skills during a time when mother is more likely to be actively engaging, versus a time when mother is more likely to be disengaged and requirements for the child to demonstrate initiative will most likely be greater.

Before your viewing of the child during these interactions, note the child's chronological age (in months), then view the tape segment. Here, you are rating the <u>global severity</u> of the child's birth defects based on the <u>totality</u> of their <u>abilities</u> during the tape segment. Essentially, try to answer the following question: "To what extent do the child's birth defects handicap, limit, or interfere with their functioning?" In other words, how impaired are the child's functional skills, relative to what you might expect for same-age peers? Do not rate the quality of parent-child interactions. Do not simply rate the "extent" to which developmental delays are observed (e.g., in communication, social interaction). Do not rate physical appearance or attractiveness. Rather, rate the quality, consistency, and efficacy of the child's functional skills -- their abilities to <u>operate</u> on their environment.

Immediately after viewing the taped segment, please choose one of the following ratings (on the following page) to represent your <u>global</u> impression after watching the child. Choose <u>only one</u> rating. If you have trouble choosing, go with your "gut reaction."

GSR (2)

Subject #MT-______ **Date __________**

Tape Segment Viewed: Start Time ______ **Stop Time ______**

1 = No apparent difficulties, relative to same-age peers. Child readily explores, plays and otherwise operates on the environment without difficulty.

2 = Some slight difficulties or anomalies in the child's functioning, relative to same-age peers. However, the child typically compensates effectively (e.g., via alternative functional behaviors) and usually operates on the environment without extensive difficulty or much need for assistance.

3 = Moderate difficulties that are immediately apparent. Child's attempts to explore, play or operate on the environment are successful about 50% of the time. Some compensatory skills are evident, but operations also appear "hit-and-miss" about half the time. Child needs assistance about half the time.

4 = Significant difficulties that require assistance more than half the time. Child attempts exploration, play or operation, but usually needs help to complete their tasks or objectives. Child's operational attempts <u>may</u> be minimal, but their interest or engagement is usually evident.

5 = Severe difficulties that were evident throughout the tape segment. Child exhibits/initiates little or no exploration, play, or operation on the environment. They need help to participate in all, or nearly all, tasks. Their interest or engagement may or may not be apparent at times.

Appendix E

THIS DOCUMENT IS A PERMANENT PART OF THE MEDICAL RECORD
CHILD DEVELOPMENT AND CHRONIC HEALTH CONDITIONS
CONSENT FORM

DEFINITION OF RESEARCH AND INFORMED CONSENT

You and your child are being asked to participate in a clinical research study. Clinical research is the study of human conditions and behavior in an attempt to improve diagnosis and treatment. In order to decide whether or not you should agree for you and your child to be part of this research study, you should understand enough about its risks and benefits to make a judgment. This process is called informed consent.

This consent form gives information about the research study which will be discussed with you. Once you understand the study, you will be asked to sign this form, if you wish for you and your child to participate. You will have a copy for your records.

PURPOSE OF THE RESEARCH STUDY

The aim of this study is to better understand the normal social and emotional development of children with craniofacial and neurological medical conditions. An important part of studying children's emotional adjustment is understanding how children's medical conditions affect their parents/families, in this case their mothers. A better understanding of these issues will allow health-care professionals to assist families in more fully understanding and managing their child's medical condition. This, in turn, may assist families in promoting their child's development to its fullest potential. To achieve these goals, we will be assessing the following areas: children's mental and motor development; temperament (e.g., activity level, moods); adaptive/self-help behaviors (e.g., feeding, social interaction skills); and their emotional arousal and expressiveness during play and interactions with their mothers. We will also be asking mothers to describe their feelings and attitudes about their children's medical conditions.

DESCRIPTION OF RESEARCH PROCEDURES

Your participation will consist of <u>either</u> a single visit to the project office <u>or</u> two briefer visits (one of which can be done in your own home). The project office is located in the Rackham Building at Wayne State University. A single office visit will last about 4 hours, while the briefer visits will last about 2 hours each. Visits will be scheduled at a time that is most convenient for you and your child. There are 5 essential parts to the project:

1. You will be asked to sit back and watch your child play. You and your child will be videotaped during this situation. The camera will be located behind a two-way mirror. You are asked not to tell your child that he/she is being filmed.

2. Following the shared play situation, your child will participate in some tasks with one of the examiners. These tasks are part of a widely-used and standardized measure of mental and motor skill development. You will be with your child during these tasks.

3. Your child's heart rate will be monitored during another play situation by means of three disposable electrodes placed on his/her chest. The electrodes pose no known risk to your child.

4. While your child engages in free play in our office, you will be interviewed by one of the examiners about your feelings and views about your child's health condition. This interview will be audiotaped.

5. Lastly, you will be asked to complete some brief questionnaires about your child's moods, behavior and self-help skills. You will also be asked to complete two questionnaires about your own views and feelings about your child's health condition. Some of these questionnaires can be completed at home before your office visit, in order to maximize convenience to you.

POSSIBLE RISKS

There are no foreseeable risks of participating in the study. All questionnaires, and the test of your child's mental and motor skills, are standard measures which are widely used in psychological research. The means of monitoring your child's heartrate during the interaction is a non-invasive procedure which constitutes no known risk to his/her health, safety or well-being. Should your child become upset during any part of this study, your child will be comforted.

POSSIBLE BENEFITS

Results from this study will be used to better understand the emotional, social and behavioral development of children with chronic health conditions. By better understanding the effect of medical conditions on children's emotional development, and the ways in which these medical conditions affect parent-child interaction, parents and health-care professionals will be in a better position to help children develop to their fullest potential. Health-care professionals will also be better able to assist families in working with their children's medical conditions. There may be no direct benefit to you or your child.

RIGHT TO REFUSE OR WITHDRAW

This is a research project and it may not be of any direct benefit to you or your child. You may take yourself and your child out of this study at any time. If you do take yourself and your child out of it, the Hospital/Institute and the doctors will still give your child the best care that they can, if your child is treated here.

FINANCIAL COST

As a token of our appreciation, your family will be paid $35 for your time and participation. Additionally, you will either be: (1) transported to/from the study, which the project staff will arrange for you; or (2) reimbursed for your own travel expenses to/from the study, up to a maximum of $15. Other than travel expenses, for which you will be reimbursed, there are no foreseeable costs to either yourself or your child for participating in this research study. In the unlikely event of injury resulting from participation in this study, no compensation and no free medical treatment or reimbursement is offered by Wayne State University, the Detroit Institute for Children, Children's Hospital of Michigan, University of Michigan Mott Children's Hospital, the Michigan Institute for Neurological Disorders, the Craniofacial and Cleft Palate Diagnostic Center, William Beaumont Hospital, Providence Hospital, Sinai Medical Center, Dr. Linebaugh or any other party involved in this study.

PRIVACY/CONFIDENTIALITY OF RECORDS

Your family will be assigned an identification number, which will be the only identifying information placed on any of the measures used in this study, including the questionnaires, audiotapes and videotapes. No names or any other personally identifying information will be used. All questionnaires, videotapes and audiotapes will be kept in a locked filing cabinet in the project director's office at Wayne State University.

Information about what the doctors learn from this study may be published or given to other people doing research, but neither your name nor your child's name will be used. The information gathered on you and your child as part of this study will be part of his/her hospital medical record and will be kept confidential to the extent permitted by law. Since funding for this study is being provided by the March of Dimes Foundation and by the National Institute of Mental Health (NIMH), records related to data collection may be inspected by March of Dimes or NIMH. However, confidentiality for both yourself and your child will be maintained by these organizations.

QUESTIONS/CONSENT TO PARTICIPATE IN THE RESEARCH STUDY

Any questions you have asked about this study have been answered to your satisfaction. If you have any other questions later on, or if you believe that you or your child have suffered injury as a result of participating in this study, you may call either of the project coordinators for this study, Ms. Kelli Hill or Mr. John McCaskill, both of whom can be reached at 577-5585. You may reach Dr. Douglas Barnett, the director of this study, directly at 577-2958.

If you have questions regarding your own or your child's rights as they relate to your/your child's participation in this study, you may contact Dr. Peter A Lichtenberg, Chairman of the Human Investigation Committee at Wayne State University. Dr. Lichtenberg can be reached at (313) 577-5174.

By signing this paper you are saying that you have read it, understand it, and that you agree that you and your child will participate in this study.

Child's Printed Name	Date of Birth	Med. Rec. #
Mother's Printed Name		Today's Date
Signature of Mother or Legal Guardian	Signature of Investigator or Physician	
Witness		

The child assented (as applicable) to participate in this project.

Investigator

APPENDIX F

Table 1a

Sample Demographics by Diagnostic Category

	Neurological n = 38	**Craniofacial** n = 25
Child's Age	m = 25.61	m = 24.28
(Months)	(SD = 4.38)	(SD = 6.36)
Gender:		
Female	14 (37%)	11 (44%)
Male	24 (63%)	14 (56%)
Ethnicity:		
Ethnic Minority	19 (50%)	4 (16%)
Caucasian	19 (50%)	21 (84%)
X (1) = 7.52, p < .01		
Mental Developmental		
Equivalency (months)	m = 17.11	m = 23.52
F (59,1) = 17.53, p < .001	(SD = 5.71)	(SD = 6.12)
Psychomotor Developmental		
Equivalency (months)	m = 14.24	m = 23.00
F (57,1) = 24.56, p < .001	(SD = 6.55)	(SD = 6.93)
Mother's Age	m = 29.84	m = 29.68
(Years)	(SD = 5.63)	(SD = 5.51)
Mother's Marital Status:		
Single	9 (25%)	4 (16%)
Non-Single	27 (75%)	21 (84%)
X (1) = .71, NS		
Family SES	m = 30.69	m = 40.90
	(SD = 15.48)	(SD = 13.26)

Table 1b

Sample Demographics by Grief Resolution Category

	Resolved	Unresolved
	n = 28	n = 35
Child's Age	m = 23.96	m = 25.97
(Months)	(SD = 5.88)	(SD = 4.57)
F (61,1) = 2.32, NS		
Gender:		
Female	11 (39%)	14 (40%)
Male	17 (61%)	21 (60%)
X (1) = .003, NS		
Ethnicity:		
Ethnic Minority	4 (14%)	19 (54%)
Caucasian	24 (86%)	16 (46%)
X (1) = 10.74, p < .001		
Mental Developmental		
Equivalency (months)	m = 21.00	m = 18.67
F (59,1) = 1.90, NS	(SD = 5.90)	(SD = 7.12)
Psychomotor Developmental		
Equivalency (months)	m = 19.81	m = 16.48
F (57,1) = 2.60, NS	(SD = 7.54)	(SD = 8.09)
Mother's Age	m = 29.39	m = 30.09
(Years)	(SD = 4.69)	(SD = 6.20)
Mother's Marital Status:		
Single	5 (18%)	8 (24%)
Non-Single	23 (82%)	25 (76%)
X (1) = .37, NS		
Family SES	m = 37.86	m = 32.35
F (59,1) = 1.98, NS	(SD = 14.66)	(SD = 15.70)

Table 2

Categorical by Continuous Grief Ratings

	RDI Classifications	
	Resolved	**Unresolved**
Total Grief Resolution Score	m = 59.64 (sd = 4.81)	m = 42.20 (sd = 6.21)
Resolved Subscale Score	m = 29.18 (sd = 2.83)	m = 20.57 (sd = 3.17)
Unresolved Subscale Score	m = 11.54 (sd = 2.40)	m = 20.37 (sd = 3.73)

Intercorrelations Among Continuous Grief Ratings

	Total Grief Res. Score	**Resolved Subscale**	**Unresolved Subscale**
Total Grief Res. Score	1.00		
Resolved Subscale	** .97	1.00	
Unresolved Subscale	** -.97	** -.88	1.00

** $p < .01$

Table 3

Mothers' Demographic Factors by Grief Resolution

	Resolved	**Unresolved**
Mothers' Age (in years)	m = 29.39 (sd = 4.69)	m = 30.09 (sd = 6.20)
Mothers' IQ Estimate (WAIS-R Comprehension) F (61,1) = 3.49, p < .07	m = 10.18 (sd = 2.46)	m = 8.77 (3.32)
Family SES	m = 37.86 (sd = 14.66)	m = 32.35 (15.70)
Length of RDI (No. of Words) F (61,1) = 6.45, p < .05	m = 976.29 (465.78)	m = 1577.83 (1180.68)
Elapsed Time since First Diagnosis	m = 21.96 (sd = 7.46)	m = 19.51 (sd = 7.58)
Elapsed Time since Second Diagnosis (n = 30) F (28,1) = 3.79, p = .06	m = 18.30 (sd = 8.15)	m = 12.80 (sd = 6.86)

Table 4

Mothers' Grief Resolution by Diagnostic Group

	Neurological	**Craniofacial**
RDI Classification		
(Categorical Variable):		
Resolved	10 (26%)	18 (72%)
Unresolved	28 (74%)	7 (28%)
X(1) = 12.75, p < .001		
Total Grief Resolution	m = 45.92	m = 56.08
(Continuous Variable)	(SD = 10.19)	(SD = 7.27)
F (61,1) = 18.58, p < .001		

Mothers' Grief Resolution by Ethnic Status

	Caucasian	**Ethnic Minority**
RDI Classification		
(Categorical Variable)		
Resolved	24 (60%)	4 (17%)
Unresolved	16 (40%)	19 (83%)
X (1) = 10.74, p < .001		
Total Grief Resolution	m = 52.78	m = 45.04
(Continuous Score)	(SD = 10.16)	(SD = 8.97)
F (61,1) = 9.19, p < .005		

Mothers' Ethnicity by Child Diagnostic Group

	Neurological	**Craniofacial**
Caucasian	19 (50%)	21 (84%)
Ethnic Minority	19 (50%)	4 (16%)
X (1) = 7.52, p < .01		

Table 5

Mothers' Psychosocial Predictors by Ethnicity

	Caucasian	Ethnic Minority
Trait Emotionality		
Negative Affectivity	m = 21.36 (SD = 8.87)	m = 19.14 (SD = 7.65)
Positive Affectivity	m = 36.58 (SD = 6.21)	m = 36.80 (SD = 7.89)
Dysfunctional Attitudes about Birth Defects		
Total Score	m = 15.77 (SD = 10.85)	m = 15.04 (SD = 11.88)
Negative Items	m = 10.33 (SD = 8.88)	m = 9.74 (SD = 10.09)
Positive Items	m = 18.56 (SD = 3.70)	m = 18.70 (SD = 4.46)
Coping Orientation		
Approach* F (58, 1) = 10.64, p < .005	m = 33.37 (SD = 4.24)	m = 29.05 (SD = 5.99)
Avoidance* F (58, 1) = 10.30, p < .005	m = 13.68 (SD = 4.67)	m = 18.09 (SD = 5.85)
Perceived Social Support* F (60, 1) = 13.85, p < .001	m = 52.74 (SD = 6.37)	m = 46.30 (SD = 6.93)
Perceived Parenting Hassles* (Total Score) F (54, 1) = 4.30, p < .05	m = 102.45 (SD = 41.93)	m = 77.50 (SD = 42.32)

Table 6

Relations Between Dummy-Coded Ethnicity Variable, SES and Maternal IQ with Maternal Psychosocial-Coping Variables

	Ethnicity	SES	IQ
Approach	.38 **	.33 **	.27 *
Avoidance	-.39 **	-.30 *	-.15
DARB-Pos	-.02	-.15	-.25 *
DARB-Neg	.03	-.08	.01
Pos. Affect	-.02	-.03	-.03
Neg. Affect	.13	.10	-.01
Per Soc Sup	.43 ***	.41 ***	.27 *
Hassles	.27 *	-.11	.06

*	$p < .05$
**	$p < .01$
***	$p < .001$

Relations Among Ethnicity, SES and Maternal IQ

	Ethnicity	SES	IQ
Ethnicity	--		
SES	.43 ***	--	
IQ	.43 ***	.49 ***	--

*	$p < .05$
**	$p < .01$
***	$p < .001$

Table 7

Child Disability Parameters by Grief Resolution

	RDI Classifications	
	Resolved	**Unresolved**
Child's Age F (1,61) = 2.32, NS	m = 23.96 (SD = 5.88)	m = 25.97 (SD = 4.57)
Appearance Impact Rating	m = 1.89 (SD = 1.07)	m = 1.88 (SD = 1.12)
Functional Severity Index F (1,59) = 7.35, $p < .01$	m = 3.80 (SD = 5.89)	m = 8.24 (SD = 6.75)
Global Severity Rating F (1,59) = 12.35, $p < .001$	m = 1.71 (SD = 0.94)	m = 2.73 (SD = 1.26)

Table 8

Child Disability Parameters

	Neurological	Craniofacial
Appearance Impact Rating F (1,61) = 4.13, p < .05	m = 1.64 (SD = 1.02)	m = 2.20 (SD = 1.12)
Functional Severity Index F (1,59) = 43.21, p < .001	m = 9.81 (SD = 6.52)	m = 1.02 (SD = 1.66)
Global Severity Rating F (1,59) = 31.87, p < .001	m = 2.86 (SD = 1.20)	m = 1.40) (SD = 0.58)

Table 9

Maternal Control Factors

	TGRS	Age	IQ	SES	RDI # Words	Dx Time1	Dx Time2
TGRS	1.00						
Age	.005	1.00					
IQ	.17	.12	1.00				
SES	.20	.23+	.49**	1.00			
RDI # Words	-.24++	.27*	.28*	.11	1.00		
Dx Time1	.20	-.15	.18	.23+	.02	1.00	
Dx Time2	.33+	.13	.13	-.02	-.03	.65**	1.00

* $p < .05$
** $p < .01$

\+ $p < .08$
++ $p < .06$

Table 10

Relations Between Maternal Grief Scores, Child Disability Parameters, and Bayley-II Developmental Equivalencies

	TGRS	**Res**	**Unrs**	**MDE**	**PDE**	**FSI**	**GSR**	**AIR**
TGRS								
Res								
Unrs								
MDE	.21+	.17	-.24++					
PDE	.20	.15	-.24+	.90**				
FSI	-.32*	-.27*	.35**	-.64**	-.71**			
GSR	-.47**	-.43**	.49**	-.68**	-.75**	.80**		
AIR	.05	.06	-.03	-.21+	-.11	-.01	.15	

* p < .05
** p < .01

\+ p < .10
++ p < .06

Table 11

Intercorrelations Among Maternal Psychosocial Predictors and Total Grief Resolution Score

	TGRS	NA	PA	DARB -neg	DARB -pos	Apch	Avd	PSS	Tot Has
TGR	1.00								
NA	-.03	1.00							
PA	-.16	** -.34	1.00						
D-	-.08	* .30	* -.27	1.00					
D+	-.15	-.18	** .45	* -.31	1.00				
App	* .26	.21	.15	-.11	.02	1.00			
Avd	-.11	-.06	+ -.23	.13	-.11	++ -.24	1.00		
PSS	.05	-.01	* .32	-.19	.17	** .50	* -.32	1.00	
Has	.15	** .36	-.14	* .34	-.20	.16	-.10	.03	1.0

* $p < .05$

** $p < .01$

\+ $p < .08$

++ $p < .06$

(TGRS = Total Grief Resolution Score; NA = Negative Affectivity; PA = Positive Affectivity; D- = Negatively Valenced Dysfunctional Attitudes; D+ = Positively Valenced Dysfunctional Attitudes; App = Approach; Avd = Avoidance; PSS = Perceived Social Support; Has = Parenting Daily Hassles)

Table 12

Mothers' Psychosocial Predictors by Grief Resolution

	Resolved	Unresolved
Trait Emotionality		
Negative Affectivity	m = 20.35 (SD = 8.66)	m = 20.70 (SD = 3.39)
Positive Affectivity	m = 36.00 (SD = 6.65)	m = 37.20 (SD = 7.00)
Dysfunctional Attitudes about Birth Defects		
Total Score	m = 14.04 (SD = 11.87)	m = 16.63 (SD = 10.60)
Negative Items	m = 8.16 (SD = 9.11)	m = 11.54 (SD = 9.26)
Positive Items	m = 18.22 (SD = 4.29)	m = 18.91 (SD = 3.72)
Coping Orientation		
Approach*	m = 33.31 (SD = 3.86)	m = 30.62 (SD = 6.04)
Avoidance	m = 14.42 (SD = 4.25)	m = 15.97 (SD = 6.29)
Perceived Social Support	m = 51.59 (SD = 7.60)	m = 49.40 (SD = 6.91)
Perceived Parenting Hassles (Total Score)	m = 96.00 (SD = 41.48)	m = 92.97 (SD = 45.59)

Only "Approach" was significantly different based on RDI classification.
$F\ (58,1) = 3.93,\ p < .05$

Table 13a

Correlations Between Individual Psychosocial-Coping Variables and Theoretically-Derived Composite Factors

1.	"Positive Factor"	"Negative Factor"
Approach	.75	.14
Avoidance	-.36	.40
DARB-Pos	.20	.09
DARB-Neg	.10	.17
Postive Aff.	.46	-.25
Negative Aff.	.03	.59
PSS	.76	-.05
Hassles	.13	.57

Individual Variable Loadings on the Rotated Factor Solution (Principle Components Analysis with Varimax Rotation)

2.	Coping-Support	Affect-Attitudes-Hassles
Approach	.77	.13
Avoidance	-.62	.06
DARB-Pos	.22	-.62
DARB-Neg	-.18	.66
Postive Aff.	.40	-.63
Negative Aff.	.23	.71
PSS	.78	-.17
Hassles	.28	.65

	Positive	**Negative**	**Cope-Supp**	**A-A-H**
Positive	---			
Negative	-.05	---		
Cope-Supp	.79**	.08	---	
A-A-H	.01	.46**	.002	

** $p < .01$

Table 13b

Factor Score Coefficient Matrix for Rotated Principle Components Analysis

	Factors	
Variables	Coping-Support	Affect, Attitudes & Hassles
Approach	.40	.10
Avoidance	-.32	-.01
Perceived Social Support	.39	-.04
Negative Affectivity	.16	.34
Positive Affectivity	.17	-.27
Dysfunctional Attitudes (Negative)	-.06	.30
Dysfunctional Attitudes (Positive)	.08	-.27
Parenting Daily Hassles (Total Score)	.18	.32

Table 14

Hierarchical Regression Predicting Continuous Grief Resolution

Step	R-Square Change	F-Change	p	Beta	t	p
1. Demographics	.28	10.90	.000			
Diagnosis				.39	2.56	.01
Ethnicity				.26	2.01	.05
2. Disability Parameters	.09	3.78	.03			
GSR				-.48	-2.65	.01
FSI				.47	2.36	.02
3. #Words	.03	3.02	.09	-.23	-1.88	.06
4. Psychosocial-Coping Factors	.008	0.36	.70			
Positive				-.02	-.13	.90
Negative				-.10	-.84	.40

(GSR = Global Severity Rating; FSI = Functional Severity Index)

Table 15

Logistic Regression Predicting Maternal Grief Resolution

Variable	B	R	p
Diagnosis	.61	.05	.14
Ethnicity	.62	.13	.08
GSR	.56	.00	.19
FSI	-.05	.00	.55

Average of 78% of cases correctly classified:
Resolved = 80%
Unresolved = 76%

Table 16a

Discriminant Function Analysis Classifying Maternal Grief Resolution with Composite Psychosocial Variables, Child Disability Parameters and Demographics

Variable	Loading	Wilks'	*F*	*p*
Diagnosis	.66	.84	10.02	.003
RDIWords	-.61	.86	8.67	.005
GSR	-.61	.86	8.53	.005
Ethnicity	.54	.88	6.86	.05
FSI	-.49	.90	5.57	.05
Cope-Supp	.26	.97	1.57	.22
A-A-H	-.01	.99	.002	.97

Eigenvalue = .45

Average of 76% of cases correctly classified:
Resolved = 80%
Unresolved = 72%

Chi-square (7) 17.87, $p < .05$

(FSI = Functional Severity Index; GSR = Global Severity Rating; Cope-Supp = "Coping and Support" factor; A-A-H = "Affect, Attitudes and Hassles" factor)

Table 16b

Discriminant Function Analysis Classifying Maternal Grief Resolution with Individual Psychosocial-Coping Variables, Child Disability Parameters and Demographics

Variable	Loading	Wilks'	F	p
Diagnosis	.58	.84	10.02	.01
RDIWords	-.54	.86	8.67	.01
GSR	-.53	.86	8.53	.01
Ethnicity	.48	.88	6.86	.05
FSI	-.43	.90	5.57	.05
DARB-Neg	-.34	.94	3.40	.07
Approach	.33	.94	3.29	.08
Per.Soc.Supp	.19	.98	1.04	.31
Pos. Affect	-.15	.99	.65	.42
Avoidance	-.12	.99	.43	.51
DARB-Pos	.09	.996	.23	.64
Total Hassles	.03	.999	.03	.87
Neg. Affect	-.02	.999	.01	.93

Eigenvalue = .58

Average of 78% of cases correctly classified:
Resolved = 80%
Unresolved = 76%

Chi-square (13) 20.68, $p < .08$

(DARB-Pos = Positively-valenced dysfunctional attitudes;
DARB-Neg = Negatively-valenced dysfunctional attitudes)

REFERENCES

Affleck,G., Tennen,H., & Gershman,K.(1985). Cognitive adaptations to high-risk infants: The search for mastery, meaning and protection from future harm. American Journal of Mental Deficiency, 89, 653-656.

Ahadi,S.A., & Rothbart,M.K. (1994). Temperament, development and the Big Five. In C.F. Halverson, Jr., G.A. Kohnstamm, & R.P. Martin (Eds.), The developing structure of temperament and personality from infancy to adulthood (189-207). Hillsdale, NJ: Erlbaum.

Ainsworth,M.D.S., Blehar,M.C., Waters,E., & Wall,S.(1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, NJ: Erlbaum.

Ainsworth,M.D.S., & Eichberg,C.(1991). Effects on infant-mother attachment of mother's unresolved loss of an attachment figure, or other traumatic experience. In C.M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), Attachment Across the Life Cycle (pp.160-183). New York: Tavistock-Routledge.

Angleitner,A. & Ostendorf,F. (1994). Temperament and the big five factors of personality. In C.F. Halverson, Jr., G.A. Kohnstamm, & R.P. Martin (Eds.), The developing structure of temperament and personality from infancy to adulthood (69-90). Hillsdale, NJ: Erlbaum.

Atkinson,L., Scott,B., Chisholm,V., Blackwell,J., Dickens,S., Tam,F., & Goldberg,S. (1995). Cognitive coping, affective distress,and maternal sensitivity: Mothers of children with Down Syndrome. Developmental Psychology, 31, 668-676.

Barabas,G., & Taft,L.T. (1986). The early signs and differential diagnosis of cerebral palsy. Pediatric Annals, 15, 203-214.

Barrera,M. (1986). Distinctions between social support concepts, measures, and models. American Journal of Community Psychology, 14, 413-45.

Baumeister,R.F. & Scher,S.J. (1988). Self-defeating behavior patterns among normal individuals: Review and analysis of common self-destructive tendencies. Psychological Bulletin, 104, 3-22.

Bayley,N. (1993). Bayley scales of infant development-Second Edition. New York: The Psychological Corporation.

Beck,A.T. (1983). Cognitive therapy of depression: New perspectives. In P.J. Clayton & J.E. Barrett (Eds.), Treatment of Depression: Old Controversies and New Approaches (pp. 265-290). New York: Raven Press.

Beck,A.T. (1987). Cognitive therapy. In J. Zeig (Ed.), Evolution of Psychotherapy. New York: Brunner/Mazel.

Beck,A.T., Rush,A.J., Shaw,B.F., & Emery,G. (1979). Cognitive Therapy of Depression. New York: Guilford Press.

Beck,A.T., & Weishaar,M. (1989). Cognitive therapy. In A.Freeman, K.M. Simon, L.E. Beutler, & H. Arkowitz (Eds.), Comprehensive Handbook of Cognitive Therapy (pp. 21-36). New York: Plenum.

Beckman,P.J. (1983). Influence of selected child characteristics on stress in families of handicapped infants. American Journal of Mental Deficiency, 88, 150-156.

Belsky,J. (1984). The determinants of parenting: A process model. Child Development, 55, 83-96.

Belsky,J. & Cassidy,J. (1994). Attachment: Theory and evidence. In M. Rutter, D. Hay, & S. Baron-Cohen (Eds.), Developmental Principles and Clinical Issues in Psychology and Psychiatry, (pp. 373-402). Oxford: Blackwell.

Belsky,J., & Isabella,R. (1988). Maternal, infant, and social-contextual determinants of attachment security. In J. Belsky & T. Nezworski (Eds.), Clinical Implications of Attachment (pp. 41-94). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Belsky,J., & Rovine,M. (1987). Temperament and attachment security in the Strange Situation: An empirical rapprochement. Child Development, 58, 787-795.

Belsky,J., Rovine,M. & Taylor,D.G. (1984). The Pennsylvania Infant and Family Development Project, III: The origins of individual differences in infant-mother attachment: Maternal and infant contributions. Child Development, 55, 718-728.

Berlin,L.J., Cassidy,J., & Belsky,J. (1995). Infant-mother attachment and loneliness in young children: A longitudinal study. Merrill-Palmer Quarterly, 41, 91-103.

Berry,D.S. & Hansen,J.S. (1996). Positive affect, negative affect, and social interaction. Journal of Personality and Social Psychology, 71, 796-809.

Bischof,N. (1975). A systems approach towards the functional connections of fear and attachment. Child Development, 46, 801-817.

Blacher,J. (1984a). Attachment and severely handicapped children: Implications for intervention. Developmental and Behavioral Pediatrics, 5, 178-183.

Blacher,J. (1984b). Sequential stages of parental adjustment to the birth of a child with handicaps: Fact or artifact? American Journal of Mental Deficiency, 89, 653-656.

Blacher,J., & Meyers,C.E. (1983). A review of attachment formation and disorder of handicapped children. American Journal of Mental Deficiency, 87, 359-371.

Bowlby,J. (1969). Attachment and Loss, Vol. 1: Attachment, (2nd Ed.). New York: Basic Books.

Bowlby,J. (1973). Attachment and Loss, Vol. 2: Separation: Anxiety and Anger. New York: Basic Books.

Bowlby,J. (1980). Attachment and Loss, Vol. 3: Loss: Sadness and Depression. New York: Basic Books.

Breslau,N., Staruch,K.S., & Mortimer,E.A. (1982). Psychological distress in mothers of disabled children. American Journal of Disabilities in Chilhood, 136, 682-686.

Bretherton,I. (1980). Young children in stressful situations: The supporting role of attachment figures and unfamiliar caregivers. In G.V. Coelho & P. Ahmed (Eds.), Uprooting and Development (pp. 179-210). NY: Plenum.

Bretherton,I. (1987). New perspectives on attachment relations: Security, communication, and internal working models. In J. Osofsky (Ed.), Handbook of Infant Development, 2nd Ed. (pp. 1061-1100). NY: John Wiley and Sons.

Broder,H.L., Smith,F.B., & Strauss,R.P. (1994). Effects of visible and invisible orofacial defects on self-perception and adjustment across developmental eras and gender. Cleft Palate-Craniofacial Journal, 31, 429-436.

Brooks-Gunn,J., & Lewis,M. (1984). Maternal responsivity in interactions with handicapped infants. Child Development, 55, 782-793.

Brown,J.T., & Stoudemire,G.A. (1983). Normal and pathological grief. Journal of the American Medical Association, 250, 378-382.

Bugental,D.B. (1987). Attributions as moderator variables within social interactional systems. Journal of Social and Clinical Psychology, 5, 469-484.

Canning,R.D., Harris,E.S., & Kelleher,K.J. (1996).

Factors predicting distress among caregivers to children with chronic medical conditions. Journal of Pediatric Psychology, 21, 735-749.

Cassidy,J. (1994). Emotion regulation within attachment relationships. In N. Fox (Ed.), Emotion regulation: Behavioral and biological considerations. Monographs of the Society for Research in Child Development, 59, (2-3, Serial No. 240).

Clark,M.S., Helgeson,V.S., Mickelson,K., & Pataki,S.P. (1994). Some cognitive structures and processes relevant to relationship functioning (pp. 189-238). In R.S. Wyer, Jr., and Srull, T.K. (Eds.), Handbook of Social Cognition, Second Edition: Volume Two, Applications. Hillsdale, NJ: Lawrence Erlbaum Associates.

Clark,L.A., & Watson,D. (1988). Mood and the mundane: Relations between daily life events and self-reported mood. Journal of Personality and Social Psychology, 54, 296-308.

Cohen,L.J., & Roth,S. (1988). The Approach-Avoidance Scale: A measure of coping strategies. Unpublished manuscript.

Cohen,S., & Wills,T.A. (1985). Stress, social support, and the buffering hypothesis. Psychological Bulletin, 98, 310-357.

Cohn,J.F., & Tronick,E.Z. (1983). Three-month-old infants' reaction to simulated maternal depression. Child Development, 54, 185-193.

Compas,B.E. (1987). Coping with stress during childhood and adolescence. Psychological Bulletin, 101, 393-403.

Compas,B.E., Howell,D.C., Phares,V., Williams,R.A., & Ledoux,N. (1989). Parent and child stress and symptoms: An integrative analysis. Developmental Psychology, 25, 550-559.

Condon,J.T. (1986). Management of established pathological grief reaction after stillbirth. American Journal of Psychiatry, 14, 987-992.

Costa,P.T., & McCrae,R.R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. Journal of Personality and Social Psychology, 38, 668-678.

Costa,P.T., & McCrae,R.R. (1985). The NEO Personality Inventory manual. Odessa, FL: Psychological Assessment Resources.

Costa,P.T., & McCrae,R.R. (1988). Personality in adulthood: A six-year longitudinal study of self-reports and spouse ratings on the NEO Personality Inventory. Journal of Personality and Social Psychology, 54, 853-863.

Costa,P.T., & McCrae,R.R. (1990). Personality, stress, and coping: Some lessons from a decade of research. In K.S. Markides & C.L. Cooper (Eds.), Aging, Stress, Social Support, and Health. NY: Wiley.

Crnic,K.A., Friedrich,W., & Greenberg,M. (1983). Adaptation of families with mentally retarded children: A model of stress, coping, and family ecology. American Journal of Mental Deficiency, 88, 125-138.

Crnic, K.A., & Greenberg, M.T. (April, 1985). Parenting daily hassles: Relationships among minor stresses, family functioning and child development. Presented at the biennial meeting of the Society for Research in Child Development, Toronto, Ontario, CA.

Crnic,K.A., & Greenberg,M.T. (1990). Minor parenting stresses with young children. Child Development, 61, 1628-1637.

Crnic,K.A., Greenberg,M.T., Ragozin,A.S., Robinson,N.M., & Basham,R.B. (1983). Effects of stress and social support on mothers of premature and full-term infants. Child Development, 54, 209-217.

Crnic,K.A., Greenberg,M.T., Robinson,N.M., & Ragozin,A.S. (1984). Maternal stress and social support: Effects on the mother-infant relationship from birth to eighteen months. American Journal of Orthopsychiatry, 54, 224-235.

Crnic,K.A., Greenberg,M.T., & Slough,N. (1986). Early stress and social support influences on mothers' and high-risk infants' functioning in late infancy. Infant Mental Health Journal, 7, 19-33.

Crnic,K.A., Ragozin,A.S., Greenberg,M.T., Robinson,N.M., & Basham,R.B. (1983). Social interaction and developmental competence of preterm and full-term infants during the first year of life. Child Development, 54, 1199-1210.

Cullberg,J. (1972). Mental reactions of women in perinatal death. Psychosomatic medicine in obstetrics and gynaecology, 3rd International Congress. Basel: S. Karger.

Cutrona,C.E. (1986). Objective determinants of perceived social support. Journal of Personality and Social Psychology, 50, 349-355.

Cutrona,C.E., & Russell,D. (1987). The provisions of social relationships and adaptations to stress. In W.H. Jones & D. Perlman (Eds.), Advances in personal relationships (Vol. 1, pp. 37-67). Greenwich, CT: JAI Press.

Dadds,M.R., Stein,R.E.K., & Silver,E.J. (1995). The role of maternal psychological adjustment in the measurement of children's functional status. Journal of Pediatric Psychology, 20, 527-544.

Daltroy,L.H., Larson,M.G., Eaton,H.M., Partridge,A.J., Pless,M.P., & Liang,M.H. (1992). Psychosocial adjustment in juvenile arthritis. Journal of Pediatric Psychology, 17, 277-289.

Day,D.W. (1985). Craniofacial birth defects. In N. Hobbs & J.M. Perrin (Eds.), Issues in the Care of Children with Chronic Illness. San Francisco: Jossey-Bass.

Derry,P.A. & Kuiper,N.A. (1981). Schematic processing and self-reference in clinical depression. Journal of Abnormal Psychology, 90, 286-297.

Diener,E., & Emmons,R.A. (1984). The independence of positive and negative affect. Journal of Personality and Social Psychology, 47, 1105-1117.

Diener,E., & Larson,R.J. (1984). Temporal stability and cross-situational consistency of affective, behavioral, and cognitive responses. Journal of Personality and Social Psychology, 47, 871-883.

Dobson,K.S., & Breiter,H.J. (1983). Cognitive assessment of depression: Reliability and validity of three measures. Journal of Abnormal Psychology, 92, 107-109.

Dobson,K.S. & Shaw, B.F. (1986). Cognitive assessment with major depressive disorders. Cognitive Therapy and Research, 10, 13-29.

Drew,J.B., Lakey,B., & Sirl,K. (1995). Clinical depression, SES and cognitive processes in perceived support. Paper presented at the annual meeting of the Association for the Advancement of Behavioral Therapy, Washington, D.C.

Dunst,C.J., & Trivette,C.M. (1986). Looking beyond the parent-child dyad for the determinants of maternal styles of interaction. Infant Mental Health Journal, 7, 69-80.

Easterbrooks,M.A. & Goldberg,W.A. (1990). Security of toddler-parent attachment: Relation to children's sociopersonality functioning during kindergarten. In M.T. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), Attachment in the Preschool Years: Theory, Research and Intervention (pp. 221-244). Chicago: University of Chicago Press.

Eaves,G. & Rush,A.J. (1984). Cognitive patterns in symptomatic and remitted unipolar major depression. Journal of Abnormal Psychology, 93, 31-40.

Edelstein,L. (1984). Maternal Bereavement: Coping With the Unexpected Death of a Child (pp. 29-56, 75-84).

Eder,R.A. (1995). Individual differences in young children's self-concepts: Implications for children with cleft lip and palate (pp. 141-157). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. New York: Springer-Verlag.

Egeland,B., & Farber,E.A. (1984). Infant-mother attachment: Factors related to its development and changes over time. Child Development, 55, 753-771.

Emde,R., & Brown,C. (1978). Adaptation to the birth of a Down's Syndrome infant: Grieving and maternal attachment. American Academy of Child Psychology, 17, 299-323.

Emmons,R.A., & Diener,E. (1985). Personality correlates of subjective well-being. Personality and Social Psychology Bulletin,11, 89-97.

Epstein,S.J. (1980). The self-concept: A review and the proposal of an integrated theory of personality. In E. Staub (Ed.), Personality: Basic Issues and Current Research, (pp. 82-132). Englewood Cliffs, NJ: Prentice Hall.

Farran,D., Metzger,J., & Sparling,J. (1986). Immediate and continuing adaptations in parents of handicapped children: A model and an illustration. In J.J. Gallagher & P.M. Vietze (Eds.), Families of Handicapped Persons. Baltimore: Paul H. Brooks.

Field,T. (1995). Early interaction of infants with craniofacial anomalies (pp. 99-110). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. New York: Springer-Verlag.

Finch, J. F., Okun, M. A., Barrera, M. Jr., Zautra, A. J., & Reich, J. W. (1989). Positive and negative social ties among older adults: Measurement models and the prediction of psychological distress and well-being. American Journal of Community Psychology, 17, 585-605.

Folkman,S., Lazarus,R.S., Gruen,R.J., & DeLongis,A. (1986). Appraisal, coping, health status, and psychological symptoms. Journal of Personality and Social Psychology, 50, 571-579.

Fonagy,P., Steele,H., & Steele,M. (1991). Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. Child Development, 62, 891-905.

Forsyth,B.W.C., Horwitz,S.M., Leventhal,J.M., Burger,J., & Leaf,P.J. (1996). The Child Vulnerability Scale: An instrument to measure parental perceptions of child vulnerability. Journal of Pediatric Psychology, 21, 89-101.

Frey,K.S., Greenberg,M.T., & Fewell,R.R. (1989). Stress and coping among parents of handicapped children: A multidimensional approach. American Journal on Mental Retardation, 94, 240-249.

Friedrich,W. (1979). Predictors of the coping behavior of mothers of handicapped children. Journal of Consulting and Clinical Psychology, 47, 1140-41.

Friedrich,W.N., & Friedrich,W.L. (1981). Psychosocial assets of parents of handicapped and non-handicapped children. American Journal of Mental Deficiency, 85, 551-553.

Friedrich,W., Wilturner,L., & Cohen,D. (1985). Coping resources and parenting mentally retarded children. American Journal of Mental Deficiency, 90, 130-139.

George,C., & Solomon,J. (1989). Internal working models of caregiving and security of attachment at age six. Infant Mental Health Journal, 10, 222-237.

George,C., Kaplan,N., & Main,M. (1985). Adult attachment interview. Unpublished manuscript, University of California, Berkeley.

Goldberg,S., Gotowiec,A., & Simmons,R.J. (1995). Infant-mother attachment and behavior problems in healthy and chronically ill preschoolers. Development and Psychopathology, 7, 267-282.

Goldsmith,H.H., & Alansky,J.A. (1987). Maternal and infant temperamental predictors of attachment: A meta-analytic review. Journal of Consulting and Clinical Psychology, 55, 805-816.

Gowen,J.W., Johnson-Martin,N., Goldman,B.D., & Appelbaum,M. (1989). Feelings of depression and parenting competence of mothers of handicapped and nonhandicapped infants: A longitudinal study. American Journal on Mental Retardation, 94, 259-271.

Green,M. & Solnit,A.J. (1964). Reactions to the threatened loss of a child: A vulnerable child syndrome. Pediatrics, 34, 58-66.

Hall,R.C.W., Beresford,T.P., & Quinones,J.E. (1987). Grief following spontaneous abortion. Psychiatric Clinics of North America, 10, 405-420.

Hanson,M.J., & Hanline,M.F. (1990). Parenting a child with a disability: A longitudinal study of parental stress and adaptation. Journal of Early Intervention, 14, 234-248.

Hansson,R.O., Carpenter,B.N., & Fairchild,S.K. (1983). Measurement issues in bereavement. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Hauenstein, E.J. (1990). The experience of distress in parents of chronically ill children: Potential or likely outcome? Journal of Clinical Child Psychology, 19, 356-364.

Heller, K., Swindle, R. W., Jr. & Dusenbury, L. (1986). Component social support processes: Comments and integration. Journal of Consulting and Clinical Psychology, 54, 466-70.

Hill,A., & Volpe,J.J. (1994). Hypoxic-ischemic cerebral injury in the newborn. In K. Swaiman (Ed.), Pediatric Neurology: Principles and Practice. St. Louis: Mosby.

Hock,M., Krohne,H.W., & Kaiser,J. (1996). Coping dispositions and the processing of ambiguous stimuli. Journal of Personality and Social Psychology, 70, 1052-1066.

Holahan,C.J., & Moos,R.H. (1987a). Personal and contextual determinants of coping strategies. Journal of Personality and Social Psychology, 52, 946-955.

Holahan,C.J., & Moos,R.H. (1987b). Risk, resistance, and psychological distress: A longitudinal analysis with adults and children. Journal of Abnormal Psychology, 96, 3-13.

Holahan,C.J., & Moos,R.H. (1990). Life stressors, resistance factors, and improved psychological functioning: An extension of the stress-resistance paradigm. Journal of Personality and Social Psychology, 58, 909-917.

Holahan,C.J., & Moos,R.H. (1991). Life stressors, personal and social resources, and depression: A 4-year structural model. Journal of Abnormal Psychology, 100, 31-38.

Hollingshead,A.B. (1977). Four Factor Index of Social

Status. Unpublished manuscript, Department of Sociology, Yale University, New Haven, CT.

Hoppes,K., & Harris,S.L. (1990). Perceptions of child attachment and maternal gratification in mothers of children with autism and Down syndrome. Journal of Clinical Child Psychology, 19, 365-370.

Horowitz,M. (1982). Psychological processes induced by illness, injury, and loss. In T. Milton, C. Green, & R. Meagher (Eds.), Handbook of Clinical Health Psychology. NY: Plenum Press.

Horowitz,M.J., Bonanno,G.A., & Holen,A. (1993). Pathological grief: Diagnosis and explanation. Psychosomatic Medicine, 55, 260-273.

Horowitz,M.J., Wilner,N., & Alvarez,W. (1979). Impact of event scale: A measure of subjective stress. Psychosomatic Medicine, 41, 209-218.

Isabella,R.A., & Belsky,J. (1991). Interactional synchrony and the origins of infant-mother attachment: A replication study. Child Development, 62, 373-384.

Isabella,R.A., Belsky,J., & von Eye,A. (1989). Origins of infant-mother attachment: An examination of interactional synchrony during the infant's first year. Developmental Psychology, 25, 12-21.

Izard,C.E., Haynes,O.M., Chisholm,G., & Baak,K. (1991). Emotional determinants of infant-mother attachment. Child Development, 62, 906-917.

Jaynes-Nicewander,J. (1989). The experience of parenting a child with cerebral palsy: An exploratory investigation. Dissertation Abstracts International.

Jessop,D.J., Riessman,C.K., & Stein,R.E.K. (1988). Chronic childhood illness and maternal mental health. Developmental and Behavioral Pediatrics, 9, 147-156.

Kapp-Simon,K. (1981). Psychological adaptation of patients with craniofacial malformations. In G.W. Lucker, J.A. Ribbens, & J.A. MacNamara (Eds.), Psychological Aspects of Facial Form. Ann Arbor: University of Michigan Press.

Kazak,A.E., & Marvin,R.S. (1984). Differences, difficulties and adaptation: Stress and social networks in families with a handicapped child. Family Relations, 33, 67-77.

Klass,D., & Marwit,S.J. (1988). Toward a model of parental grief. Omega, 19, 31-50.

Krauss,M.W. (1993). Child-related and parenting stress: Similarities and differences between mothers and fathers of children with disabilities. American Journal on Mental Retardation, 97, 393-404.

Krohne,H.W. (1989). The concept of coping modes: Relating cognitive person variables to actual coping behavior. Advances in Behavior Research and Therapy, 11, 235-248.

Krohne,H.W. (1993). Vigilance and cognitive avoidance as concepts in coping research. In H.W. Krohne (Ed.), Attention and Avoidance: Strategies in Coping with Aversiveness (pp. 19-50). Toronto: Hogrefe & Huber.

Krohne,H.W. (1996). Individual differences in coping. In M. Zeidner & N.S. Endler (Eds.), Handbook of Coping: Theory, Research, Applications (pp. 381-409). New York: Wiley.

Krohne,H.W., Hock,M., & Kohlmann,C.W. (1992). Coping dispositions, uncertainty, and emotional arousal. In K.T. Strongman (Ed.), International Review of Studies on Emotion (Vol. 2, pp. 73-95). Chichester, England: Wiley.

Krueckeberg,S.M., & Kapp-Simon,K.A. (1993). Effects of parental factors on social skills of preschool children with craniofacial anomalies. Cleft Palate-Craniofacial Journal, 30, 490-496.

Krueckeberg,S.M., Kapp-Simon,K.A., & Ribordy,S.C. (1993). Social skills of preschoolers with and without craniofacial anomalies. Cleft Palate-Craniofacial Journal, 30, 475-481.

Kuiper,N.A. & Derry,P.A. (1982). Depressed and non-depressed content self-reference in mild depressives. Journal of Personality, 50, 67-79.

Kuiper,N.A., Olinger,L.J., MacDonald,M.R., & Shaw,B.F. (1985). Self-schema processing of depressed and non-depressed content: The effects of vulnerability to depression. Social Cognition, 3, 77-93.

Lakey,B., & Cassady,P.B. (1990). Cognitive processes in perceived social support. Journal of Personality and Social Psychology, 59, 337-348.

Lakey,B., & Dickinson,L.G. (1994). Antecedents of perceived support: Is perceived family environment generalized to new social relationships? Cognitive Therapy and Research, 18, 39-53.

Lakey,B., McCabe,K.M., Fisicaro,S.A., & Drew,J.B.

(1996). Environmental and personal determinants of support perceptions: Three generalizability studies. Journal of Personality and Social Psychology, 70, 1270-1280.

Lakey,B., Moineau,S., & Drew,J.B. (1992). Perceived social support and individual differences in the interpretation and recall of supportive behavior. Journal of Social and Clinical Psychology, 11, 336-348.

Lakey,B., Tardiff,T.A., & Drew,J.B. (1994). Negative social interactions: Assessment and relations to social support, cognition and psychological distress. Journal of Social and Clinical Psychology, 13, 42-62.

Lazarus,R.S. (1991). Emotion and Adaptation. NY: Oxford University Press.

Lazarus,R.S., Coyne,J.C., & Folkman,S. (1982). Cognition, emotion and motivation: The doctoring of Humpty-Dumpty. In R.W.J. Neufield (Ed.), Psychological Stress and Psychopathology (pp. 218-239). New York: McGraw-Hill.

Lazarus,R.S., & Folkman,S. (1984). Stress, Appraisal and Coping. NY: Springer.

Lazarus,R.S., & Folkman,S. (1987). Transactional theory and research on emotions and coping. In L. Laux & G. Vossel (Special Eds.), Personality in biographical stress and coping research. European Journal of Personality, 1, 141-169.

Lojkasek,M., Goldberg,S., Marcovitch,S., & MacGregor,D. (1990). Influences on maternal responsiveness to developmentally delayed preschoolers. Journal of Early Intervention, 14, 260-273.

Lustig,J.L., Ireys,H.T., Sills,E.M., & Walsh,B.B. (1996). Mental health of mothers of children with juvenile rheumatoid arthritis: Appraisal as a mediator. Journal of Pediatric Psychology, 21, 719-733.

Lyons, J. S., Perrotta, P. & Hancher-Kvam, S. (1988). Perceived social support from family and friends: Measurement across disparate samples. Journal of Personality Assessment, 52, 42-47.

Lyons-Ruth,K., Alpern,L., & Repacholi,B. (1993). Disorganized infant attachment classification and maternal psychosocial problems as predictors of hostile-aggressive behavior in the preschool classroom. Child Development, 64, 572-585.

Lyons-Ruth,K., Repacholi,B., Mcleod,S., & Silva,E. (1991). Disorganized attachment behavior in infancy: Short-term stability, maternal and infant correlates, and risk-related subtypes. Development and Psychopathology, 4, 377-396.

Lyubomirsky,S. & Nolen-Hoeksema,S. (1995). Effects of self-focused rumination on negative thinking and interpersonal problem solving. Journal of Personality and Social Psychology, 69, 176-190.

Main,M. and Hesse,E. (1990). Parents' unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M.T. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), Attachment in the Preschool Years: Theory, Research, and Intervention (pp. 161-182). Chicago: The University of Chicago Press.

Main,M., Kaplan,N., & Cassidy,J. (1985). Security in infancy, childhood, and adulthod: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), Growing points in attachment theory and research. Monographs of the Society for Research in Child Development, Vol. 50 (1 and 2), pp. 66-104. Serial No. 209.

Main,M., & Solomon,J. (1990). Procedures for classifying infants as disorganized/disoriented during the Ainsworth strange situation. In M.T. Greenberg, D. Cicchetti, and E.M. Cummings (Eds.), Attachment in the Preschool Years: Theory, Research, and Intervention (pp. 121-160). Chicago: University of Chicago Press.

Markus,H. (1977). Self-schemata and processing information about the self. Journal of Personality and Social Psychology, 35, 63-78.

Martin,R.P., Wisenbaker,J., & Huttunen,M. (1994). Review of factor analytic studies of temperament measures based on the Thomas-Chess structural model: Implications for the Big Five. In C.F. Halverson, Jr., G.A. Kohnstamm, & R.P. Martin (Eds.), The developing structure of temperament and personality from infancy to adulthood (157-172). Hillsdale, NJ: Erlbaum.

Marvin,R.S., & Pianta,R.C. (1996). Measuring and classifying parents' reactions to their child's diagnosis: Reliability and description. Journal of Child Clinical Psychology.

Marwit,S.J. (1996). Reliability of diagnosing complicated grief: A preliminary investigation. Journal of Consulting and Clinical Psychology, 64, 563-568.

Matas,L., Arend,R.A., & Sroufe,L.A. (1978). Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. Child Development, 49, 547-556.

McCaskill,J.W., & Lakey,B. (1996). Perceived family support, family interpersonal stress and adolescent psychological distress: Idiosyncratic and shared perspectives of adolescents and their families. Poster presentation at the Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN, April 1-3, 1995. Under editoral review, Journal of Social and Clinical Psychology.

McCrae,R.R. (1984). Situational determinants of coping responses: Loss, threat, and challenge. Journal of Personality and Social Psychology, 46, 919-928.

McCrae,R.R., & Costa,P.T. (1991). Adding Liebe und Arbeit: The full five-factor model and well-being. Personality and Social Psychology Bulletin, 17, 227-232.

Melnyk, B.M. (1995). Coping with unplanned childhood hospitalization: The mediating functions of parental beliefs. Journal of Pediatric Psychology, 20, 299-312.

Middleton,W., & Raphael,B. (1992). Bereavement. In E.S. Paykel (Ed.), Handbook of Affective Disorders, 2nd Ed. NY: The Guilford Press.

Middleton,W., Raphael,B., Martiner,N., & Misso,V. (1983). Pathological grief reactions. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Miles,M.S., & Demi,A.S. (1994). Historical and contemporary theories of grief. In I.B. Corless & B.B. Germino (Eds.), Death, Dying, and Bereavement: Theoretical Perspectives and Other Ways of Knowing. Boston: Jones and Bartlett.

Miles,M.S., Holditch-Davis,D., & Docherty,S. (1995). Maternal perception of illness severity and worry related to their medically fragile infants. Poster presentation at the Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

Miller,C.L., & White,R. (1995). Vulnerability and resiliency in preterm infants: The impact of perinatal characteristics and the social context on development. Poster presented at the 61st Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

Miller,S.M. (1987). Monitoring and blunting: Validation of a questionnaire to assess styles of information seeking under threat. Journal of Personality and Social Psychology, 52, 345-353.

Miller,S.M. (1990). To see or not to see: Cognitive informational styles in the coping process. In M. Rosenbaum (Ed.), Learned Resourcefulness: On Coping Skills, Self-Regulation, and Adaptive Behavior. NY: Springer.

Moos,R.H., & Schaefer,J.A. (1993). Coping resources and processes: Current concepts and measures. In L. Goldberger & S. Breznitz (Eds.),Handbook of Stress: Theoretical and Clinical Aspects, 2nd Ed. NY: The Free Press.

Mullens,P.A. (1992). Child temperament and its relationship to stress in mothers of 1-3 year-old children with cerebral palsy. Dissertation Abstracts International.

Munro,I.R. (1995). A description of craniofacial anomalies: The mechanism and rationale of surgery (pp. 3-21). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. New York: Springer-Verlag.

Nachmias,M., Gunnar,M., Mangelsdorf,S., Parritz,R.H., & Buss,K. (1996). Behavioral inhibition and stress reactivity: The moderating role of attachment security. Child Development, 67, 508-522.

Nelson,K.B., Swaiman,K.F., & Russman,B.S. (1994). Cerebral palsy. In K. Swaiman (Ed.), Pediatric Neurology: Principles and Practice. Mosby: St. Louis.

Nixon,C.D. (1990). The treatment of self-blaming attributions and guilt feelings in parents of severely developmentallly disabled chidren. Dissertation Abstracts International.

Nolen-Hoeksema,S. (1996). Chewing the cud and other ruminations. In R. Wyer (Ed.), Advances in Social Cognition (pp. 135-144). Hillsdale, NJ: Erlbaum.

Nolen-Hoeksema,S., McBride,A., & Larson,J. (1997). Rumination and psychological distress among bereaved partners. Journal of Personality and Social Psychology, 72, 855-862.

O'Dougherty,M., & Wright,F.S. (1990). Children born at medical risk: Factors affecting vulnerability and resilience. In J. Rolf, A.S. Masten, D. Cicchetti, K.H. Neuchterlein, & S. Weintraub (Eds.), Risk and Protective Factors in the Development of Psychopathology (pp. 120-140). NY: Cambridge University Press.

O'Sullivan,S.B. (1985). Infant-caregiver interaction and the social development of handicapped infants. Physical

& Occupational Therapy in Pediatrics, 5, 1-12.

Onufrak,B., Saylor,C.F., Taylor,M.J., Eyberg,S.M., & Boyce,G.C. (1995). Determinants of responiveness in mothers of children with intraventricular hemorrhage. Journal of Pediatric Psychology, 20, 587-599.

Pagel, M.D., Erdly, W.W. & Becker, J. (1987). Social networks: We get by with (and in spite of) a little help from our friends. Journal of Personality and Social Psychology, 53, 793-804.

Paneth,N. (1986). Etiologic factors in cerebral palsy. Pediatric Annals, 15, 191-201.

Park,K.A. & Waters,E. (1989). Security of attachment and preschool friendships. Child Development, 60, 1076-1081.

Parkes,C.M. (1972). Bereavement: Studies of grief in adult life. London: Tavistock Publications and NY: International Universities Press.

Parkes,C.M. (1983). Bereavement as a psychosocial transition: Processes of adaptation to change. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Parkes, C.M. (1985). Bereavement. British Journal of Psychiatry, 146, 11-17.

Parkes,C.M. (1991). Attachment, bonding, and psychiatric problems after bereavement in adult life. In C.M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), Attachment Across the Life Cycle. London & NY: Routledge.

Parkes,C.M., & Weiss,R.S. (1983). Recovery From Bereavement. NY: Basic Books.

Parks,R.M. (1977). Parental reactions to the birth of a handicapped child. Health and Social Work, 2, 51-66.

Peterson,S.H., Pawl,J.H., & Lieberman,A.F. (1995). The experience of attachment in infants with disabilities (pp. 111-129). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. NY: Springer-Verlag.

Pianta,R.C., & Marvin,R.S. (1992a). The Reaction to Diagnosis Interview. Unpublished materials, University of Virginia, Charlottesville, VA.

Pianta,R.C., & Marvin,R.S. (1992b). The Reaction to Diagnosis Classification System. Unpublished materials, University of Virginia, Charlottesville, VA.

Pianta,R.C., & Marvin,R.S. (1994). Mothers' resolution of their children's diagnosis of cerebral palsy: Patterns of resolution and relation with time since diagnosis. Unpublished manuscript, University of Virginia, Charlottesville, VA.

Pianta,R.C., Marvin,R.S., Britner,P.A., & Borowitz,K.C. (1996). Mothers' resolution of their childen=s diagnosis: Organized patterns of caregiving representations. Infant Mental Health Journal, 17, 239-56.

Pianta,R.C., Sroufe,L.A., & Egeland,B. (1989). Continuity and discontinuity in maternal sensitivity at 6, 24, and 42 months in a high-risk sample. Child Development, 60, 481-487.

Plunkett,J.W., Meisels,S.J., Stiefel,G.S., Pasick,P.L., & Roloff,D.W. (1986). Patterns of attachment among preterm infants of varying biological risk. Journal of the American Academy of Child Psychiatry, 25, 794-800.

Procidano, M. E. & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. American Journal of Community Psychology, 11, 1-24.

Radke-Yarrow,M., Cummings,E.M., Kuczynski,L., & Chapman,M. (1985). Patterns of attachment in two and three year-olds in normal families and families with parental depression. Child Development, 56, 884-893.

Ragozin,A.S., Basham,R.B., Crnic,K.A., Greenberg,M.T., & Robinson,N.M. (1982). Effects of maternal age on parenting role. Developmental Psychology, 18, 627-634.

Rando,T.A. (1993). An investigation of grief and adaptation in parents whose children have died from cancer. In M.C. Roberts, G.P. Koocher, D.K. Routh, & D.J. Willis (Eds.), Readings in Pediatric Psychology (pp. 127-144). New York: Plenum Press.

Raphael,B. (1977). Preventive intervention with the recently bereaved. Archives of General Psychiatry, 34, 1450-1454.

Raphael,B. (1983). The Anatomy of Bereavement. NY: Basic Books.

Rees,R.J., Strom,R.D., Wurster,S., & Goldman,R. (1984). Parental expectations for handicapped and non-handicapped children. Australia and New Zealand Journal of Developmental Disabilities, 10, 229-241.

Reis,H.T., & Hodgins,H.S. (1995). Reactions to craniofacial disfigurement: Lessons from the physical attractiveness and stigma literatures (pp. 177-197). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. New York: Springer-Verlag.

Resnick,M.B., Armstrong,S., & Carter,R.L. (1988). Developmental intervention program for high-risk infants: Effects on development and parent-infant interaction. Developmental and Behavioral Pediatrics, 9, 73-78.

Richman,L.C., & Eliason,M. (1982). Psychological characteristics of children with cleft lip and palate: Intellectual, achievement, behavioral, and personality variables. Cleft Palate Journal, 19, 251-257.

Rosenberg,S.A., & Robinson,C.C. (1988). Interactions of parents with their young handicapped children. In S.L. Odom & M.B. Karnes (Eds.), Early Intervention for Infants and Children with Handicaps: An Empirical Base. Baltimore: Paul H. Brookes.

Roth,S., & Cohen,L.J. (1986). Approach, avoidance, and coping with stress. American Psychologist, 41, 813-819.

Ruehlman, L. S. & Wolchik, S. A. (1988). Personal goals and interpersonal support and hindrance as factors in psychological distress and well-being. Journal of Personality and Social Psychology, 55, 293-301.

Rush,A.J., Weissenburger,J., & Eaves,G. (1986). Do thinking patterns predict depressive symptoms? Cognitive Therapy and Research, 10, 225-236.

Russell,D. & Cutrona,C.E. (1985). The Social Provisions Scale: A qualitative measure of facets of social support.

Sanders,C.M. (1980). A comparison of adult bereavement in the death of a spouse, child, and parent. Omega, 10, 303-322.

Sanders,C.M. (1983). Risk factors in bereavement outcome. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Sanders,C.M. (1988). Risk factors in bereavement outcome. Journal of Social Issues, 44, 97-112.

Sarason, B.R., Pierce, G.R. & Sarason, I.G. (1990). Social support: The sense of acceptance and the role of relationships. In Sarason, Sarason & Pierce (Eds.) Social Support. (pp. 97-128). New York: Wiley.

Sarason,B.R., Pierce,G.R., Bannerman,A., & Sarason,I.G.

(1993). Investigating the antecedents of perceived social support: Parents' views of and behavior toward their children. Journal of Personality and Social Psychology, 65, 1071-1085.

Sarason,I.G., Sarason,B.R., & Shearin,E.N. (1986). Social support as an individual difference variable: Its stability, origins, and relational aspects. Journal of Personality and Social Psychology, 50, 845-855.

Schneider-Rosen,K., & Cicchetti,D. (1984). The relationship between affect and cognition in maltreated infants: Quality of attachment and the development of visual self-recognition. Child Development, 55, 648-658.

Segal,Z.V. & Shaw,B.F. (1986). Cognition in depression: A reappraisal of Coyne and Gotlib's critique. Cognitive Therapy and Research, 10, 671-693.

Seidman,S., Allen,R., & Wasserman,G.A. (1986). Productive language of premature and physically handicapped two-year-olds. Journal of Communication Disorders, 19, 49-61.

Seiner,S.H., & Gelfand,D.M. (1995). Effects of mothers' simulated withdrawal and depressed affect on mother-toddler interactions. Child Development, 66, 1519-1528.

Shepard,B., & Magai,C. (1995). Socioemotional development in children with craniofacial anomalies (pp., 76-97). In R.A. Eder (Ed.), Craniofacial Anomalies: Psychological Perspectives. New York: Springer-Verlag.

Shonkoff,J.P, Hauser-Cram,P., Krauss,M.W., & Upshur,C.C. (1992). Development of infants with disabilities and their families: Implications for theory and service delivery. Monographs of the Society for Research in Child Development, 57, (6, Serial No.230).

Shuchter,S.R., & Zisook,S. (1983). The course of normal grief. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Speltz,M.L., Goodell,E.W., Endriga,M.C., & Clarren,S.K. (1994). Feeding interactions of infants with unrepaired cleft lip and/or palate. Infant Behavior and Development, 17, 131-139.

Speltz,M.L., Greenberg,M.T., & DeKlyen,M. (1990). Attachment in preschoolers with disruptive behavior: A comparison of clinic-referred and non-problem children. Development and Psychopathology, 2, 31-46.

Speltz,M.L., Greenberg,M.T., Endriga, .C., & Galbreath,H. (1994). Developmental approach to the psychology of craniofacial anomalies. Cleft Palate-Craniofacial Journal, 31, 61-67.

Speltz,M.L., Morton,K., Goodell,E.W., & Clarren,S.K. (1993). Psychological functioning of children with craniofacial anomalies and their mothers: Follow-up from late infancy to school entry. Cleft Palate-Craniofacial Journal, 30, 482-489.

Sroufe,L.A., Fox,N. & Pancake,V. (1983). Attachment and dependency in developmental perspective. Child Development, 54, 1335-1354.

Sroufe,L.A., & Waters,E. (1977). Attachment as an organizational construct. Child Development, 48, 1184-1199.

Stein,N., Folkman,S., Trabasso,T., & Richards,T.A. (1997). Appraisal and goal processes as predictors of psychological well-being in bereaved caregivers. Journal of Personality and Social Psychology, 72, 872-884.

Stein,R.E.K., Gortmaker,S.L., Perrin,E.C., Perrin,J.M., Pless,I.B., Walker,K.K. & Weitzman,M. (1987). Severity of illness: Concepts and measurements. Lancet, 2, 1506-1509.

Stein,R., & Reissman,C. (1980). The development of an Impact-on-Family Scale: Preliminary findings. Medical Care, 18, 465-472.

Stoneman,Z., Brody,G., & Abbott,D. (1983). In-home observation of young Down syndrome children with their mothers and fathers. American Journal of Mental Deficiency, 87, 591-600.

Stroebe,M.S., Hansson,R.O., & Stroebe,W. (1983). Contemporary themes and controversies in bereavement research. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Stroebe,W., & Stroebe,M.S. (1987). Bereavement and Health. Cambridge: Cambridge University Press.

Tabachnick,B.G. & Fidell,L.S. (1989). Using Multivariate Statistics (2nd Ed.). NY: HarperCollins Publishers, Inc.

Taft,L.T. (1984). Cerebral palsy. Pediatrics in Review, 6, 35-45.

Tellegen,A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In A.H. Tuma & J.D. Maser (Eds.), Anxiety and the Anxiety Disorders (pp. 681-706). Hillsdale, NJ: Erlbaum.

Tesh,E.M., Holditch-Davis,D., & Burchinal,M. (1995). Effect of neurological status on interactions between mothers and their medically fragile infants. Poster presentation at the 61st Biennial Meeting of the Society for Research in Child Development, Indianapolis, IN.

Teti,D.M. & Ablard,K.E. (1989). Security of attachment and infant-sibling relationships: A laboratory study. Child Development, 60, 1519-1528.

Thompson,R.J., Gil,K.M., Burbach,D.J., Keith,B.R., & Kinney,T.R. (1993). Psychological adjustment of mothers of children and adolescents with sickle cell disease: The role of stress, coping methods, and family functioning. Journal of Pediatric Psychology, 18, 549-559.

Thompson,R.J., Gil,K.M., Gustafson,K.E., George,L.K., Keith,B.R., Spock,A., & Kinney,T.R. (1994). Stability and change in the psychological adjustment of mothers of children and adolescents with cystic fibrosis and sickle cell disease. Journal of Pediatric Psychology, 19, 171-188.

Thompson,R.J., Gustafson,K.E., George,L.K., & Spock,A. (1994). Change over a 12-month period in the psychological adjustment of children and adolescents with cystic fibrosis. Journal of Pediatric Psychology, 19, 189-203.

Thompson,R.J., Gustafson,K.E., Hamlett,K.W., & Spock,A. (1992). Stress, coping, and family functioning in the psychological adjustment of mothers of children and adolescents with cystic fibrosis. Journal of Pediatric Psychology, 17, 573-585.

Tobiasen,J.M. (1984). Psychosocial correlates of congenital facial clefts: Conceptualization and model. Cleft Palate Journal, 21, 131-139.

Trout,M.D. (1983). Birth of a sick or handicapped infant: Impact on the family. Child Welfare, 62, 337-348.

Valentiner,D.P., Holahan,C.J., & Moos,R.H. (1994). Social support, appraisals of event controllability, and coping: An integrative model. Journal of Personality and Social Psychology, 66, 1094-1102.

van Ijzendoorn,M.H., Goldberg,S., Kroonenberg,P.M., & Frenkel,O.J. (1992). The relative effects of maternal and child problems on the quality of attachment: A meta-analysis of attachment in clinical samples. Child Development, 63, 840-858.

van Tassel,E. (1984). Temperament characteristics of mildly developmentally delayed infants. Developmental and Behavioral Pediatrics, 5, 11-14.

Vanderas,A.P. (1987). Incidence of cleft lip, cleft palate, and cleft lip and palate among races: A review. Cleft Palate Journal, 24, 216.

Vaughn,B.E., Egeland,B., Sroufe,L.A., & Waters,C.E. (1979). Individual differences in infant-mother attachment at twelve and eighteen months: Stability and change in families under stress. Child Development, 50, 971-975.

Vinokur, A., Schul, Y. & Caplan, R. D. (1987). Determinants of perceived social support: Interpersonal transactions, personal outlook, and transient affective states. Journal of Personality and Social Psychology, 53, 1137-1145.

Waisbren,S.E. (1980). Parents' reactions after the birth of a developmentally disabled child. American Journal of Mental Deficiency, 84, 345-351.

Wallander,J.L., & Varni,J.W. (1992). Adjustment in children with chronic physical disorders: Programmatic research on a disability-stress-coping model (pp. 279-298). In D.K. Routh (Ed.), Handbook of Pediatric Psychology. New York: Guilford Press.

Wallander,J.L., Varni,J.W., Babani,L., Banis,H.T., DeHaan,C.B., & Wilcox,K.T. (1989a). Disability parameters, chronic strain, and adaptation of physically handicapped children and their mothers. Journal of Pediatric Psychology, 14, 23-42.

Wallander,J.L., Varni,J.W., Babani,L., Banis,H.T., & Wilcox,K.T. (1989b). Family resources as resistance factors for psychological maladjustment in chronically ill and handicapped children. Journal of Pediatric Psychology, 14, 157-173.

Wallander,J.L., Varni,J.W., Babani,L., DeHaan,C.B., Wilcox,K.T., & Banis,H.T. (1989c). The social environment and the adaptation of mothers of physically handicapped children. Journal of Pediaric Psychology, 14, 371-387.

Wallander,J.L., & Venters (1995). Perceived role restriction and adjustment of mothers of children with chronic physical disability. Journal of Pediatric Psychology, 20, 619-632.

Wasserman,G.A., & Allen,R. (1985). Maternal withdrawal from handicapped toddlers. Journal of Child Psychology and Psychiatry, 26, 381-387.

Wasserman,G., Lennon,M., Allen,R., & Shilansky,M. (1987). Contributors to attachment in normal and physically handicapped infants. Journal of the American Academy of Child and Adolescent Psychiatry, 26, 9-15.

Wasserman,G.A., Seidman,S., & Allen,R. (1984). Toddlers with congenital anomalies and their mothers: The research of the Child Development Program at the New York State Psychiatric Institute. Rehabilitation Literature, 45, 202-205.

Watson,D. (1988). The vicissitudes of mood measurement: Effects of varying descriptors, time frames, and response formats on measures of positive and negative affect. Journal of Personality and Social Psychology, 55, 128-141.

Watson,D., & Clark,L.A. (1984). Negative affectivity: The disposition to experience aversive emotional states. Psychological Bulletin, 96, 465-490.

Watson,D., & Clark,L.A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. Journal of Personality, 60, 441-476.

Watson,D., Clark,L.A., & Carey,G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. Journal of Abnormal Psychology, 97, 346-353.

Watson,D., Clark,L.A., McIntyre,C.W., & Hamaker,S. (1992). Affect, personality and social activity. Journal of Personality and Social Psychology, 63, 1011-1025.

Watson,D., Clark,L.A., & Tellegen,A. (1988). Development of the positive and negative affectivity schedule. Journal of Personality and Social Psychology.

Watson,D., & Tellegen,A. (1985). Toward a consensual structure of mood. Psychological Bulletin, 98, 219-235.

Watson,D., & McKee-Walker,L.M. (1996). The long-term stability and predictive validity of trait measures of affect. Journal of Personality and Social Psychology, 70, 567-577.

Wechsler, D. (1981). Wechsler Adult Intelligence Scale-Revised Manual. San Antonio, TX: The Psychological Corporation.

Weiss,R.S. (1974). The provisions of social relationships. In Z. Rubin (Ed.), Doing Unto Others (pp. 17-26). Englewood Cliffs, NJ: Prentice-Hall.

Weiss,R.S. (1983). Loss and recovery. In M.S. Stroebe, W. Stroebe, & R.O. Hansson (Eds.), Handbook of Bereavement: Theory, Research, and Interventions. NY: Cambridge University Press.

Weiss,R.S. & Richards,T.A. (1997). A scale for predicting quality of recovery following the death of a partner. Journal of Personality and Social Psychology, 72, 885-891.

Weissman,A., & Beck,A.T. (1978). Development and validation of the Dysfunctional Attitudes Scale: A preliminary investigation. Paper presented at the annual meeting of the American Educational Research Association, Toronto, Ontario, Canada.

Williams,B.J. (1982). Social and psychological problems associated with cleft palate. Clinics in Plastic Surgery, 9, 317-326.

Worchel,F., Prevatt,B., Miner,J., Allen,M., Wagner,L., & Nation,P. (1995). Pediatricians' communication style: Relationship to parents' perceptions and behaviors. Journal of Pediatric Psychology, 20, 633-644.

Wright,L.S. (1976). Chronic grief: The anguish of being an exceptional parent. The Exceptional Child, 23, 160-169.

Zisook,S., & DeVaul,R.A. (1985). Unresolved grief. American Journal of Psychoanalysis, 45, 370-379.

ABSTRACT

MATERNAL GRIEF REACTIONS TO THEIR CHILDREN'S BIRTH DEFECTS: FACTORS INFLUENCING GRIEF RESOLUTION

by

JOHN W. McCASKILL, IV

DECEMBER 1997

Advisor: Douglas Barnett, Ph.D.

Major: Psychology (Clinical)

Degree: Doctor of Philosophy

The study examined factors related to resolution of maternal grief reactions to the event of learning about their child's birth defects. Subjects were 63 mothers and their toddler-age children, recruited from medical clinics in the Metropolitan area of Detroit, MI. Mothers' ages ranged from 18 to 42 years (mean = 30 years). 63% (n = 40) of the families were Caucasian, with 32% (n = 20) African-American, and 5% (n = 3) from other ethnic backgrounds. Toddlers' ages ranged from 13 to 33 months, with a modal age of 28 months (mean = 25 months, SD = 5 months). 60% (n = 38) of the toddlers were male and 40% (n = 25) were female. 60% (n = 38) were diagnosed with a neurological disorder and 40% (n = 25) were diagnosed with some form of non-neurologically involved craniofacial anomaly or limb deficiency. The majority of the sample was primarily middle class with regard to family socioeconomic status (SES).

Consistent with two other studies on this topic, 56% (35/63) of the mothers in our sample were classified as having unresolved grief reactions related to learning of

their child's diagnosis. Across all analyses, child disability parameters (global and functional severities of children's handicaps) and demographic factors (child diagnostic group and, to a lesser extent, family ethnicity) were predictive of maternal grief resolution. In addtion, a consistent trend in the data suggested that mothers who provided longer verbal responses during the Reaction to Diagnosis Interview were more likely to be judged as having unresolved grief reactions. However, maternal psychosocial-coping variables (approach and avoidance coping, dysfunctional attitudes about birth defects, positive and negative affectivity, perceived social support, and parenting daily hassles) did not predict grief resolution beyond child disability parameters and demographics. Approach coping demonstrated a significant bivariate correlation with grief resolution, but did not predict grief beyond disability parameters and demographics. These findings suggest that, while psychosocial-coping or personality factors may influence parents' acute reactions to learning of their child's birth defects and/or their <u>style</u> of grief resolution, resolution outcome (or parental psychological adjustment over time) may be more influenced by the chronicity and/or functional severity of children's handicaps, in addition to demographic and/or cultural factors.

AUTOBIOGRAPHICAL STATEMENT
JOHN W. McCASKILL, IV

EDUCATION AND TRAINING:

Graduate	Ph.D., Clinical Psychology (Requirements Completed 9/97) M.A., Clinical Psychology, 5/95 Wayne State University, Detroit, MI Cumulative GPA of 4.0.
Undergraduate	B.A., Psychology, 5/85 University of Texas at Austin. Last 2 years' GPA of 3.9, Dean's List 1983-85.

EXPERIENCE:

Post-doctoral residency in Pediatric/Child Clinical Psychology. Shands Hospital, Division of Clinical and Health Psychology, University of Florida. Gainesville, FL, 9/97 - present.

Pre-doctoral internship in Pediatric Psychology. Children's Hospital of Michigan, Detroit, MI, 9/96 - 8/97.

Children's Hospital of Michigan, Detroit, MI, 2/93 - 8/96. Psychology-Assistant, Division of Psychiatry & Psychology.

Wayne State University Psychology Clinic, Detroit, MI, 9/93 - 8/94. Student co-director and therapy coordinator.

Wayne State University Psychology Clinic, Detroit, MI, 9/92 - 8/93. Graduate Teaching Assistant.

Central Screening, The Children's Center, Detroit, MI, 5/92 - 2/93. Crisis intervention therapist.

Harper Hospital, Detroit, MI, 9/91 - 8/92. Psychology practicum, Division of Psychiatry/Psychology and Outpatient Chemical Dependency Program.

TEACHING:

Wayne State University, Detroit, MI. Summer 1993, Undergraduate instructor, "Theories of Personality"; Summer 1990, Undergraduate instructor, "Psychology of Adjustment"; Fall 1989 and Winter 1990, Undergraduate lab instructor, "Introductory Psychology."