

1-1-2011

Coping Style As A Mediator Of Stress Perception For Caregivers Of Children With Developmental Disabilities

Justin Wayne Peer
Wayne State University,

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

Recommended Citation

Peer, Justin Wayne, "Coping Style As A Mediator Of Stress Perception For Caregivers Of Children With Developmental Disabilities" (2011). *Wayne State University Dissertations*. Paper 203.

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.

**COPING STYLE AS A MEDIATOR OF STRESS PERCEPTION FOR CAREGIVERS
OF CHILDREN WITH DEVELOPMENTAL DISABILITIES**

by

JUSTIN W. PEER

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

2011

MAJOR: EDUCATIONAL PSYCHOLOGY

Advisor

Date

©COPYRIGHT BY

JUSTIN W. PEER

2011

ALL RIGHTS RESERVED

DEDICATION

This dissertation is dedicated to my beautiful wife, Tracie Ann Peer. Your patience and unwavering support served as a beacon of light for me as I struggled through this project. Thank you my love. Now it is my turn to do the same for you.

This is also dedicated to my Grandmother, Elsie Heskett. When I was a child you would get me up for school each morning and as I got ready you would regularly remind me of the importance of an education. I never forgot. Thank you for everything Grandma.

Lastly, this dissertation is dedicated to the memories of Kenneth Mclean and Alice Peer. You will always be loved and forever missed.

ACKNOWLEDGMENTS

A project of this nature cannot be completed without the support of a large number of people. I am truly grateful to those who not only provided direct assistance but to those who also simply showed an interest in my project. Every bit of help and every kind word propelled me forward.

First and foremost, I want to thank my Lord for blessing me with the strength, intelligence, and patience to complete this project. All glory goes to You for this wonderful achievement.

I would like to acknowledge my advisor, Dr. Stephen Hillman. Thank you for your patience and support as I navigated several significant traumas and transitions during the time I was completing this project. You helped me develop a sense of perseverance and confidence in myself and aided me in learning that I usually knew the answer to a question but just needed to dig a little deeper to realize that I knew the answer. You also helped me gain a whole new meaning for the term “time on task”. Again, thank you for everything.

I would also like to thank Dr. Cheryl Somers and Dr. Jina Yoon for serving on my dissertation committee and for the helpful advisement and support during the dissertation process. I want to also acknowledge Dr. Patricia Siple from the Department of Psychology for her willingness to be a part of my dissertation committee. I learned so much from your class and am so pleased that you served on my committee.

I want to also thank the administration of the Washtenaw Community Health Organization/Community Support and Treatment Services for allowing me to utilize their agency as a recruiting site for my project. A very heartfelt thank you is extended to

Denice Virgo and Shane Ray. I cannot express in words how pivotal you were in this process. Your kindness, flexibility, and genuine interest in this project meant the world to me. I would also like to thank Jessica Sahutoglu for her time, patience, and support during this process. Jessica, I learned a lot from you and value every conversation we had. Also, thank you to the parents and caregivers who took the time to complete survey packets. Your time and effort was greatly appreciated.

I would also like to acknowledge my friend and mentor, Dr. Steven Genden. Thank you for our weekly conversations and for keeping things in perspective for me. I am very grateful for your wisdom. Also, thank you for your assistance as I made my final ascent toward completion.

Thank you also to Tracy Gomez and Kelly Bellus for your editorial work and support. Your selflessness and dedication to my success was vital in this process.

Also, I want to thank my wonderful wife, Tracie Peer. You are a remarkable human being and I thank you for just being you. I am so happy that me completing this project has inspired you to return to school. I will be there for you in the same way you have been there for me, forever and always.

I could not have completed this project without the assistance of my family. Thank you to my parents, David and Ramona Peer, for all your love and support during this time. You have always been there for me and I cannot thank you enough. I would not have made it without you. I want to also acknowledge my brother and sister, Joshua and Gabrielle Peer. Thank you both for spending countless hours stuffing envelopes and making deliveries for me. It was greatly appreciated. Also thank you to my grandmother, Elsie Heskett. You helped raise me to be the person I am today. Thank you for planting

the seeds in my life that allowed me to achieve completion of this project. My family means the world to me. I love you all and will forever be grateful for all of the support you offered me during this time.

TABLE OF CONTENTS

Dedication	ii
Acknowledgements.....	iii
List of Tables	x
List of Figures	xi
Chapter I Introduction.....	1
Statement of the Problem.....	6
Purpose of the Study	8
Chapter II-Review of the Literature.....	10
Theoretical Models of Stress	11
Lazarus' Cognitive Theory of Psychological Stress and Coping	11
Double ABCX Model of Family Stress	16
Definition of Developmental Disabilities	26
Developmental Disabilities and Parent Stress	28
Severity of Disability and Parenting Stress	31
Life Orientation and Parenting Stress	35
Social Support and Parenting Stress	38

Summary of Previous Research	41
Theoretical Model of Mediation for Coping Style on Stress Perception.....	45
Research Questions.....	46
Chapter III-Methodology	58
Participants.....	58
Instruments.....	58
Parenting Stress Index-Short Form (PSI-SF)	58
Revised Life Orientation Test (LOT-R)	60
Multidimensional Scale of Perceived Social Support (MSPSS)	61
SF-10 Health Survey for Children (SF-10)	63
Ways of Coping Scale (WCS)	64
Procedure	67
Chapter IV-Results.....	69
Demographics	69
Means, Standard Deviations, and Range of Scores	71
Independent and Dependent Variable Correlations	73
Preliminary Analysis.....	74
Caregiver Gender, Age, Relationship to Child, and Stress.....	74

Child Age, Disability Type, Caregiver Coping Style, and Stress	75
Social Support, Severity of Disability, Life Orientation, and Stress	76
Primary Analysis.....	77
Step 1: Stress Influencing Variables and Stress.....	79
Step 2: Stress Influencing Variables and Coping Style	80
Step 3: Coping Style and Stress	82
Step 4: Coping Style as a Mediator.....	83
Chapter V-Discussion	86
History and Background	86
Sample Characteristics.....	89
Review of Preliminary Analyses	90
Review of Primary Analyses	91
Step 1: Predictive Relationship Between Social Support, Severity of Disability, Life Orientation and Stress.....	91
Step 2: Predictive Relationship Between Social Support, Severity of Disability, Life Orientation and Coping Style.....	95
Step 3: Predictive Relationship Between Coping Style and Stress.....	97
Step 4: Coping Style as a Mediator.....	99

Implications of the Study	100
Benefits of the Study.....	101
Limitations of the Study.....	102
Recommendations for Future Research	103
Concluding Remarks.....	104
Appendix A-Introductory Letter	106
Appendix B-Reminder Notice	107
Appendix C-Information Sheet.....	108
Appendix D-Demographic Questionnaire	110
Appendix E-Instrumentation.....	111
Appendix F-Human Investigation Committee Approval Letter	122
Appendix G-Letter of Approval for Recruiting Participants	123
References.....	124
Abstract.....	141
Autobiographical Statement.....	143

LIST OF TABLES

Table 1: Demographic Characteristics and Associated Frequency Distribution of Sample	70
Table 2: Means, Standard Deviations and Ranges of Scores Obtained on Measurements Administered	73
Table 3: Correlation Matrix of Variables in Study	74
Table 4: Analysis of Variance for Caregiver Gender, Caregiver Age, and Relationship to Child on Stress	75
Table 5: Analysis of Variance for Child Age, Disability Type, and Caregiver Coping Style on Stress	76
Table 6: Analysis of Variance for Social Support, Severity of Disability, and Life Orientation on Stress	77
Table 7: Predictive Relationship Between Social Support, Severity of Disability, Life Orientation and Stress Perception	80
Table 8: Predictive Relationship Between Social Support, Severity of Disability, Life Orientation and Coping Style Orientation	81
Table 9: Predictive Relationship Between Coping Style Orientation and Stress Perception	83
Table 10: Coping Style Orientation as Mediator Between Social Support, Severity of Disability, Life Orientation and Stress Perception	85

LIST OF FIGURES

Figure 1: Theoretical Model of Mediation for Coping Style on Stress Perception50

Figure 2: Research Questions, Variables, and Statistical Analyses.....51

CHAPTER I

Introduction

Stress is experienced by all human beings. How stress is perceived and the reaction to stress varies and is based upon various human psychological and physiological factors. Richard Lazarus (1993), as part of his Cognitive Theory of Psychological Stress and Coping, views stress as a complex interplay between people and their environment. Lazarus believes that stress is the physiological response experienced by individuals when environmental demands are appraised to outweigh personal resources available to manage those demands. At low levels, stress has the potential to be productive as it can propel humans forward to achieve goals and complete activities. However, if chronic in nature and/or experienced at a high level of intensity, stress can negatively impact the body and mind. Chronic stress has been associated with decreased physiological functioning including issues pertaining to the cardiovascular system (Krantz & McCeney, 2002) and with immune functioning (Cohen et al., 2003). Stressful life events have also been correlated with mental health problems including the onset of depression (Hammen, 2005) and the experience of anxiety (Faravelli & Pallanti, 1989). The physical and mental health problems resulting from chronic stress can significantly hinder a person's ability to navigate the daily routines and responsibilities that life requires. As a result, various important activities can be hindered through the impact that stress has on the individual.

Parenting a child is an example of a routine that can cause strain for people. In today's society the challenges experienced by parents are enormous. The struggle to ensure a child's safety, well-being, and education while also providing for the child's

physical needs can place a significant burden on even the most competent parent. A bidirectional relationship exists where the stress experienced through attempting to ensure and promote their child's wellness can complicate the ability to be an effective parent which, in turn, exacerbates the stress experienced by the caregiver even more significantly. Compared to the strain placed upon parents of normally developing children, parents of children with cognitive and physical disabilities often experience a higher level of stress. For these caregivers, the typical parenting demands are complicated by factors associated with the child's disability. Research has shown that parents of children with disabilities experience higher levels of stress in comparison to parents with normally developing children (Cushner-Weinstein et al., 2008; Hussain & Juyal, 2007).

The greater stress experienced by parents of children with disabilities is associated with the complex care needs of their children (Grosse et al., 2009; Lach et al., 2009,). The child with a developmental disability typically requires care at a higher level of intensity over an extended period of time in comparison to normally developing children. This places a unique, and potentially damaging, set of responsibilities upon the parents that must be traversed. The cognitive and physical aspects of the disability lead to functional limitations in a variety of domains (communication, self-care, self-direction, social skills, health, and safety). These adaptive functioning deficits are usually predicted to continue indefinitely. As a result, ongoing care is required by the child. The assistance required for the child could range from simple prompts to total personal care. This ongoing and intensive level of care, support, and concern provided by the caregiver takes time and resources away from their own lives. This can result in a lack of self-care that

could potentially lead to stress and “burnout” for the parent if proper support is not in place to buffer the impact of the stress.

This differs drastically from the parenting responsibilities associated with a child of normal development. Whereas a child of normal functioning can be expected to become more independent as he or she ages, a significant portion of children with disabilities will likely make only modest, if any, progress toward total independence. Children with less severe disabilities will still likely experience some form of adaptive functioning limitations as they age. This places continual responsibility upon the parent to care for and monitor the child. Whereas other parents can reasonably predict a time when their responsibilities will wane and their role will shift to one that is more supportive in nature, parents and primary caregivers of children with disabilities usually cannot.

If not successfully negotiated, the stress experienced by parents of children with developmental disabilities can have negative implications for both the parent and the child. As previously noted, significant stress can be taxing upon the parent’s mental and physical health. One must also consider the ramifications for the child resulting from the parent being overextended and unable to manage stress. As stress compromises the parent’s ability to live effectively, this may also limit the caregiver’s ability to nurture and fully care for his/her child. This can have an impact on the child’s developmental potential.

As stated, children with disabilities require personal care and prompting at a level that often well exceeds that of a normally developing child. Children with disabilities also have limited developmental growth potential that must be nurtured and addressed in order

for the child to become as functionally independent as possible. A parent's inability to provide the level of direction and care necessary to promote the child's growth potential could further stunt development, preventing the child from reaching maximum potential for physical and/or cognitive ability. In today's society this is of the utmost importance. Presently, treatment agencies and advocacy groups alike are highly supportive of community inclusion for individuals with disabilities. Independent living, employment, and effective social involvement are all goals set by treatment programs to be obtained for people with disabilities. As treatment modalities have moved from institutions to the community over the years, parents and primary caregivers have become more responsible for implementing strategies to assist their child in reaching their goals. A high level of functional attainment and community integration could be very difficult to reach if the child is not raised in a nurturing environment that provides adequate prompting, guidance, and personal care. For the child of an overburdened parent, the dreams of independence may be in jeopardy if a suitable level of nurturing and care is not provided. Knowing this, a parent's ability to manage stress is crucial to the wellness of both the parent and their child.

Several factors, both internal and external to the caregiver, have been correlated with the level of stress experienced by parents of children with developmental disabilities. A trait specific to the parent's personality that is linked with stress is the orientation toward either optimism or pessimism. Baker, Blacher, and Olsson (2005) found that mothers of children with disabilities who were rated as being less optimistic reported lower scores on measures of well being when their child exhibited high levels of negative behavior. Also, Kayfitz, Gragg, and Orr (2009) explored the impact that positive

experiences had on mothers and fathers of children with autism and found that parents who had a positive focus reported lower levels of parental distress.

A variable external to the parent that is also linked to stress is the severity of the child's disability. Previous research indicates that the level of functional impairment experienced by the child is significantly correlated to the amount of stress experienced by the parent (Macias et al., 2006). Similarly, Richman, Belmont, Kim, Slavin, and Hayner (2009) investigated the impact that specific childhood developmental disabilities had on parenting stress levels and found that parental stress levels were tied to the severity of challenges associated with their child's disorder.

Lastly, the amount of social support received by a parent of a child with a developmental disability has also been associated with stress. This environmental variable appears to be a strong predictor of parental stress as Pottie and Ingram (2008) found that social support affected the strength of the relationship between stress and mood for parents of children with autism. Also, Beckman (1991), in a study comparing the perceptions of parents of children with and without disabilities, found that caregiver stress was negatively correlated with informal support (friends, family) for both mothers and fathers.

To avoid parental "burnout" caused by the previously mentioned variables and others associated with stress, coping strategies may be utilized to manage these factors. Within his Transactional Theory of Stress, Lazarus (1984) defines coping as "an ongoing cognitive and behavioral effort to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (pg. 237). Through an appraisal process, the individual reacts to perceived threat, loss, or potential harm from

the environment by using coping strategies to reduce stress and maintain balance. Lazarus and Folkman (1984) suggest that there are two primary types of coping strategies that people use: problem-focused and emotion-focused. Problem-focused coping techniques are aimed at resolving the problem causing stress while also eliminating the potential for reoccurrence in the future. Emotion-focused strategies are oriented in the present and target the emotions stemming from the stress but do not address the environment to ensure stress does not occur in the future. By engaging in coping strategies Lazarus suggests that people can reduce the level of stress they experience. Given this, parents and primary caregivers could benefit from the use of coping strategies to offset the stress experienced through caring for their child.

Statement of the Problem

Children with developmental disabilities require ongoing personal care, prompting, and nurturing if they are to develop independence in their lives. Though school and community programs do exist to provide care and guidance to children, parents are usually the primary and most readily available source of support for their kids. Parents require both physical and psychological wellness to successfully provide the type and level of care needed by children with disabilities. Past research has shown that parents of children with disabilities display higher stress levels in comparison to parents of normally developing children and also identified several of the variables that influence the level of parental stress experienced. However, a question that arises is whether or not other factors exist that influence the relationship that exists between stress inducing variables and the perception of stress for parents of children with developmental disabilities.

As stated, the research literature available does identify several variables that influence the stress perceived by parents and primary caregivers of children with developmental disabilities. However, the findings available typically identify direct relationships between the variables thought to influence stress and the actual experience of stress for caregivers. Little, if any, research exists that analyzes indirect, or mediated, relationships between these factors. Given that the research available has yet to identify a perfect statistical relationship between a variable hypothesized to perpetuate stress and the perception of stress for parents and primary caregivers, it is reasonable to assert that other variables exist outside of this direct pathway that influence the relationship. The failure to consider indirect relationships and the potential mediating variables that may exist in previous work has produced a significant gap in the current research base. Identification and analysis of such relationships is of great importance in preventing oversimplification of research in this area and to advance the knowledge base and understanding of stress for caregivers of children with developmental disabilities.

The analysis of mediating variables could be of great significance to research in this area. Baron and Kenny (1986) identify mediating factors as those that explain, or account for, the relationship between a predictor variable and a criterion variable. Mediating variables are hypothesized to explain this, according to Baron and Kenny, by identifying “how” or “why” certain effects occur within the relationship. Attention to these variables could potentially reshape the current knowledge base that exists in the area of parenting stress related to raising children with developmental disabilities. If found to be significant, results from mediational studies could offer a significant contribution to both the academic and mental health community alike. Significant

findings could promote the potential for growth in novel areas of research while also providing the foundation for the development of evidence based therapeutic tools that can be utilized by clinicians when working with caregivers of children with developmental disabilities on stress related issues.

To close this gap research must address whether or not factors exist that influence the relationship between variables thought to cause stress and the perception of stress for caregivers. This question is of great relevance when considering the potential impact this could have on the developing child. If parents experience chronic stress that inhibits their own physical and/or psychological health, then their ability to provide prompting, direction, and care to their child will likely also suffer. Over time this could lower the child's growth potential and diminish their chances of developing independent living skills and integrating into the larger society. Identifying this gap in knowledge could prove vital in working with caregivers to bolster their ability to effectively manage stress and preserve the personal resources that are necessary for directing and leading their children toward independence.

Purpose of the Study

The aim of the present study was to analyze how coping style impacts the relationship between variables hypothesized to produce stress and the perception of stress for parents and primary caregivers of children with physical and/or cognitive disabilities. Specifically, this study examined if parental coping style (an orientation toward problem-focused or emotion-focused coping) mediated the relationship between stress influencing variables (life orientation, level of disability, and social support) and reported stress levels by parents or primary caregivers and, if found, to what extent did mediation exist.

The study was structured following Baron and Kenny's (1986) recommendations for analyzing mediation.

CHAPTER II

Review of the Literature

The Americans with Disabilities Act (1990) states that developmental disabilities are marked by a series of adaptive functioning deficits. Disabilities limit an individual's ability to meet personal care needs as well as other activities of daily living. These individuals often need to rely upon others to have these needs met. This task typically becomes the responsibility of parents and loved ones. This is especially true for children with disabilities. The set of responsibilities placed upon parents is unique and potentially stressful. As the limitations resulting from the disability are usually predicted to continue indefinitely, the responsibilities placed upon the parent may be enduring and without a predictable end. This could potentially threaten a parent's well-being both in the present and future. In the present, the child's care needs may disrupt parents' daily routines, potentially preventing the parents from tending to their own needs. Over time, this can lead to mental and/or physical exhaustion for the parent. Exhaustion could lead to the parent being unable to meet the child's needs. Through this exchange stress can have a detrimental impact on the parent and subsequently the child if it is uncontrolled.

The complexity and severity of a child's disability can lead to stress for the parent. Research has shown that parents of children with disabilities experience more stress than parents of normally developing children (Gupta, 2007). The nature of the disability and the associated impairment in functioning can have a significant impact on the parent. This occurs as the result of the heightened level of care that must be offered to the child on a regular basis. As parenting stress is likely to continue given the chronic nature of the child's impairment and resulting need, how the parent addresses and

processes the stress is paramount. Both parent and child wellness likely hinges on how the parent copes with the challenges associated with providing care to the child. The purpose of this chapter is to outline stress and coping in relation to parenting a child with a disability. The chapter begins by offering a theoretical discussion related to stress and coping. This is followed by defining developmental disabilities and describing the impact disabilities can have on parental stress. The following section introduces variables that may impact parenting stress. Lastly, a theoretical model for understanding the mediating impact of coping style on parent stress and coping is proposed.

Theoretical Models of Stress

Lazarus' Cognitive Theory of Psychological Stress and Coping. Richard Lazarus' Cognitive Theory of Psychological Stress and Coping (Lazarus & Folkman, 1984) views stress as a mutually reciprocal, bidirectional, and dynamic transaction between the individual and the environment. Stress, according to Lazarus, results if an individual appraises a transaction with the environment as taxing and exceeding personal resources (Folkman et al., 1986). Stress could potentially endanger the individual if it is severe and/or experienced chronically. Lazarus theorizes that two critical processes, cognitive appraisal and coping, mediate the potentially stressful transaction between person and environment. Both cognitive appraisal and coping are theorized to have a potential impact on short and long-term outcomes for the individual.

Cognitive appraisal is defined as a process through which the individual determines whether his/her relationship with the environment is meaningful (holding the potential for harm or benefit) and, if so, in what way (Folkman & Lazarus, 1984). Lazarus outlines two types of cognitive appraisal: primary and secondary. During

primary appraisal the person determines if the transaction with the environment is of any potential harm or benefit. Lazarus theorizes that a broad range of personality characteristics (e.g., values, goals, beliefs about oneself) aids the individual in determining if the transaction with the environment is personally relevant. If there is a potential threat to well-being within the transaction, then the person assesses the situation utilizing secondary appraisal to determine if harm can be prevented and well-being can be promoted. Primary and secondary appraisals then merge to evaluate the significance of the person-environment transaction. This convergence determines whether the transaction is primarily threatening (involving the potential for loss and/or harm for the individual) or challenging (containing the possibility of mastery or benefit). If the transaction is concluded to be threatening to the individual's well-being, then coping strategies are utilized. Cognitive appraisal and coping are both influenced by factors related to both the person and environment. For example, for a situation to be appraised as threatening a particular set of environmental conditions and personality characteristics are involved in the determination. Thus, these factors have a bidirectional influence upon one another.

Lazarus refers to coping as a person's cognitive and behavioral efforts to manage stress related demands resulting from environmental transactions that are perceived to be taxing and/or exceeding personal resources (Folkman et al., 1986). Coping is initiated in an emotional environment and is strongly associated with the regulation of emotion, especially distress, throughout the stress encounter (Folkman & Moskowitz, 2004). The coping process is believed to have two distinct primary functions: managing the stressful situation (problem-focused coping) and providing regulation to the emotion caused by the

situation (emotion-focused coping). Examples of problem-focused coping efforts include positive reappraisal, planful problem solving, accepting responsibility, as well as seeking social support. Emotion-focused coping strategies include distancing, self-controlling, confrontive coping, and escape-avoidance.

Coping as a construct is thought to hold three key features. First, coping is process oriented. Coping focuses on what the individual is actually thinking during the stressful transaction and how thought processes change during the situation. Secondly, coping is contextual. The person's appraisal of environmental demands and the personal resources available for managing the demands influence the coping effort and may change depending upon the context in which the transaction occurs. Lastly, coping is defined by the person's attempt to manage the environment, not by whether or not the attempt was successful.

Whether or not a coping effort is deemed successful is dependent upon the individual's determination if the transaction with the environment was adequately resolved. This judgment is based on the person's values, beliefs, and expectations related to the different factors involved in the encounter. Outcomes can be evaluated as favorable or negative based upon the individual's personality characteristics. Lazarus (1993) uses the term "adaptive" to describe the effectiveness of coping in improving outcomes. He refers to "success" as the extent to which a coping-related reappraisal is believed by the individual. Lastly, he uses the term "consolidated" when the person has achieved a stable means of coping with various situations.

The question arises as to whether one form of coping is more effective than the other. In terms of specific coping strategies, Folkman and Lazarus (1984) argue that the

coping process and strategies selected are not inherently good or bad. Rather, it is suggested that the adaptive qualities of the coping effort should be evaluated within the context of the specific situation in which it occurred. A particular coping process may be successful within one context and not in another. Also, as the context of the situation is dynamic, what may be determined to be successful at the beginning of the process could turn out to be ineffective at the end.

Several studies have found one way of coping to be more effective than the other. In a study of coping effectiveness among aging mothers and fathers of adults with mental retardation Essex, Seltzer, and Krauss (1999) found that greater use of problem-focused coping strategies and less use of emotion-focused coping techniques buffered the negative impact of caregiver stress on mothers' psychological well-being. Miller, Gordon, Daniele and Diller (1992) in a study of stress appraisal and coping style in mothers of children with disabilities found that emotion-focused coping was significantly related to increased psychological distress in mothers whereas use of problem-focused coping was tied to decreased distress. Kim, Greenberg, Seltzer, and Krauss (2003) found in a study of parental coping associated with the challenges of caring for an adult child with an intellectual disability that increases in the use of emotion-focused coping led to declining levels of well-being for the parent. In this study the use of problem-focused coping strategies resulted in improved relations with their disabled child as well. Lastly, Smith and her colleagues (2008) investigated the impact of autism and coping style on maternal well-being. For mothers of toddlers with autism, lower levels of emotion-focused coping and increased use of problem-focused strategies were generally correlated with greater maternal well-being, regardless of the severity of the disorder. In sum,

research generally holds that the use of problem-focused strategies is tied to lower stress levels for parents of children with disabilities.

Lazarus (1999, 2006) argues that coping is a powerful mediator of the emotional outcome resulting from a stressful environmental transaction. He states that evidence to support this is found in studies that were completed (Folkman & Lazarus, 1988) where the emotional state of the individual during the stressful encounter changed either positively or negatively based upon the type of coping strategy that was used. He feels that coping impacts the relationship between the person and the environment and can impact how the person feels as a result of the transaction.

Lazarus' conceptualizations of stress and coping continue to be widely utilized as part of research today. His model is used by researchers in a diverse assortment of research areas. For example, Pellissier and colleagues (2010) as part of a study analyzing psychological adjustment in individuals with inflammatory bowel disease found that problem-focused coping strategies were correlated with positive affect for patients with Irritable Bowel Syndrome while an emotion-focused coping style was related to negative affect for the same patients. Also, in a study analyzing the relationship between coping and anxiety for coronary bypass surgery patients, Tung, Hunter, and Wei (2008) found that heightened quality of life for individuals after surgery was associated with greater use of problem-focused coping strategies.

Lazarus' ideas also continue to be used in other areas of disability research. Glidden and Natcher (2009) investigated the use of coping strategies and their relation to personality and adjustment for parents of children with developmental disabilities. The researchers hypothesized that early use of problem-focused coping strategies by parents

of children with disabilities would predict less worry for the parent and a greater sense of subjective well-being. Sixty-eight married couples with children who had developmental disabilities participated in the study. Glidden and Natcher found that higher usage of positive reappraisal (a problem-focused coping strategy) resulted in lower levels of depression and higher levels of subjective well-being for both mothers and fathers of children with developmental disabilities.

Lastly, Orsmond and colleagues (2009) explored sibling relationships and well-being in adolescents and adults who had a brother or sister diagnosed with an autism spectrum disorder. As part of the study the researchers interviewed 406 siblings. They found that, for adolescents, high level usage of problem-focused coping strategies protected against the negative impact behavioral problems exhibited by their siblings with autism could potentially have on their well-being.

Double ABCX Model of Family Stress. The Double ABCX Model of Family Stress (McCubbin & Patterson, 1983) is closely related to Lazarus' Transactional Model of Stress and Coping as it also integrates the concepts of emotion-focused and problem-focused coping. It differs in that it ties these concepts into explaining the family stress process. The model, adapted from Hill's original ABCX family crisis model (1958), attempts to provide an understanding of how families manage within stress situations. The model explains how families grapple with change and illustrates how they approach and manage life demands. This model lends itself well to the plight of a parent of a child with a disability. It offers a model regarding how the care needs of a disabled child may be approached by the family. It also offers explanation on how some families are able to manage this adversity with grace and resilience while others become overwhelmed.

Hill (1949) provided an early conceptual foundation for explaining how families positively adapt to stressful situations with his ABCX family crisis model. McCubbin and Patterson (1983) summarized Hill's theory in the following general schematic:

“ A (the stress causing event) --- interacting with B (the family's crisis meeting resources) --- interacting with C (the definition the family gives to the event) --- produce X (the crisis).” (p. 8)

The “A” portion of the conceptual framework refers to what McCubbin and Patterson (1983) refer to as “stressors” and “hardships”. The authors define a stressor as a “life event or transition impacting upon the family unit which produced, or has the potential of producing, change in the family social system” (McCubbin & Patterson, 1983, p. 8). A hardship is defined as “those demands on the family unit specifically associated with the stressor event” (McCubbin & Patterson, 1983, p. 8). It is postulated that both the stressor and the resulting hardship place demands and strain upon the family. This strain requires action by the family to be managed. As it relates to the present study, the regular care required by a child with a developmental disability is a stressor for the parent while the amount of time required to do so (which may require altered work schedules, decreased social time and financial expense) acts as a resulting hardship that must be negotiated.

Within this model the stress event and accompanying hardship interact within the “B” factor, or the family's resources for meeting these demands. These resources are thought of in terms of their ability to prevent a disruption within the family system caused by the stress. Family adaptability, or the family's ability to meet the demands of the situation and adjust accordingly, is a primary example of a family resource.

The “C” factor within Hill’s original model is the family’s subjective value and meaning given to the stressor. This meaning reflects the values of the family and also involves previous experience with confronting and managing crises. Diverse meanings can be attributed to the stressor ranging from a welcomed challenge to overcome to an uncontrollable and overwhelming situation that is impossible to manage. A linkage between the “A”, “B”, and “C” factors and the Lazarus concept of primary and secondary appraisal is apparent. In both models, the environmental event is observed by the individual and provided a positive or negative meaning, all while resources are being evaluated to determine if the event can be successfully managed.

The final variable within Hill’s model is the “X” factor. Hill theorizes that the interplay between the “A”, “B”, and “C” variables cause stress for the family. Family stress, according to Hill, is defined as “a state which arises from an actual or perceived demand-capability imbalance in the family’s functioning and which is characterized by a multidimensional demand for adjustment or adaptive behavior” (McCubbin & Patterson, 1983, p. 9). Family distress is thought to arise when stress is subjectively defined as unpleasant or undesirable by the family. The “X” factor, or crisis, is the amount of disruption and disorganization that results from the level of undesirability the family places upon the stress they perceive. Crisis is characterized by the inability of the family to regain homeostasis and the constant tension and pressure placed upon the family to make change within their structure and pattern of interaction. Crisis will not result if the family manages a situation with available resources and defines the situation as not requiring change and/or adjustment. For the parent of a child with disabilities, managing

a situation with available resources may lead to stress, however by determining that change or adjustment is not required would avert any experience of distress and/or crisis.

McCubbin and Patterson (1983) used the findings from Hill's original studies to provide the foundation for their Double ABCX Model of Family Stress. In addition to the original model, the Double ABCX model adds post-crisis variables in order to describe: 1) additional life stressors that mold the course of family adaptability, 2) the vital social, psychological, and intra-familial factors families gain and utilize to manage crises, 3) the changes in definition and meaning families use over time in an attempt to make sense of their situation, 4) the types of coping strategies families use, and 5) the results of the aforementioned efforts. The additional factors are integrated into the "A", "B", "C", and "X" variables of the original model.

Families rarely deal with stressors in isolation. Rather, there are usually several stressors impacting the family at the same time. It is suggested that this is particularly prevalent after a major stressor (e.g. death, major role change within the family, natural disaster). McCubbin and Patterson refer to the pile-up nature of stressors as the "Aa" factor in the Double ABCX Model. According to the authors five different types of stressors contribute to the pile-up effect within the family system during a time of crisis. The first of these include the hardships caused by the initial source of stress. The stressor can result in an increase in responsibility for the parent which could lead to a hardship for the parent if not properly resolved. As this pertains to families in the present study, parents of children with developmental disabilities, in addition to the traditional parenting role, must take on additional responsibility as the disability prevents the child from gaining and maintaining independence in functioning. As the added responsibility is

usually not readily resolved, this can pose a source of strain on the family and contribute to family distress.

Secondly, the normal transitions that occur within the family can place additional stress on the family. In addition to the initial event, changes such as school transitions for other children in the home or job change for the parent can place additional demand on the family as the change requires adjustment. Next, any residual stress from prior strain placed upon the family seems to be exacerbated by new stress and can contribute to the pile-up of demands families must manage within a crisis. A fourth variable that impacts the pile up of demands are the family's efforts to cope with the situation. Ineffective coping efforts can contribute to increased tension, thus resulting in more strain on the family. Lastly, ambiguity within the family can have an impact on the family during a crisis. The uncertainty of roles within the family and confusion about family structure can paralyze a family in a crisis situation, leading to more strain.

The "Bb" factor within Double ABCX Model represents the family's adaptive resources. In a time of crisis the family is thought to have two general types of resources: existing resources and expanded family resources. Existing resources are those that are already embedded within the family structure. These resources act to minimize the impact of the initial stressor and decrease the probability that the family will enter into crisis mode. Expanded family resources, or the "b" in the "Bb" factor, are the new resources families generate in response to the demands that develop through crisis. These resources serve to stabilize the family and can come via individual, family, or community means. The authors note that a very important resource making up the "Bb" factor is social support. Families who are able to develop social resources are more resistant to

major crises and are more apt to recover from crisis and regain stability within the family system (McCubbin & Patterson, 1983).

The “Cc” factor within the Double ABCX Model refers to the familial meaning provided to the entire crisis situation (underlying stressor, pile up stressors and strain, resources, and thoughts as to what is required for the family to regain homeostasis). What differentiates this from the “C” factor in Hill’s model is the family’s ability to redefine and give new meaning to the crisis situation. For the family, redefining and providing new meaning to a situation involves clarifying the issues to make them more manageable and responsive to problem solving efforts. This lowers the emotional intensity of the situation and encourages social and emotional development of family members. Efforts to redefine the crisis situation from being a negative experience to more positive in nature (e.g., a challenge, an opportunity for family growth) facilitate healthy family coping and adaptation.

The last factor, or “Xx”, within the Double ABCX Model refers to the family adaptation balancing. Whereas Hill’s “X” factor signified the amount of crisis within the family system, the “Xx” variable within McCubbin and Patterson’s model refers to the family’s ability to achieve balance between reciprocal relationships amongst individual members, the whole family system, and the community that result from the crisis situation. At the initial level, it is theorized that balance is sought between individual family members and the family system. According to the model, stress results from a demand-capability imbalance at this level. In particular, an imbalance is thought to result when the demands placed upon the larger family system by the individual member exceed the capabilities of the family system. In relation to parents of children with

disabilities, an example of this imbalance would be where the care demands placed upon the family by the child exceeds the family unit's resources to care for the child. At this point the family must negotiate a new balance between their child and others within the family.

At the next level of adaptation a balance between family and community is sought. An important factor, according to the authors, within the community that causes an imbalance for the family are demands placed on the family by work responsibility. Responsibilities at home and those at work typically compete for parental time and often result in stress and demand-capability imbalance. This can be particularly difficult for the parent of a child with a disability. The parent must find balance between the care needs of the child while ensuring that work responsibilities are met. This is vital when considering that parents provide the financial resources that support the family. It is important for the parent to achieve and maintain balance between their family and the demands of work, or any other community responsibility, in order for the family unit to be successful.

Obtaining balance results in a sense of family coherence. Coherence for the family refers to the ability to experience an enduring feeling of confidence that the environment is predictable and situations will be navigated successfully. Though not always perfect, families are accepting and understanding of their coping efforts and realize that their effort was the best under the given circumstances. Coherence is central in the family's ability to gain full adaptation. Within the Double ABCX Model, adaptation is the critical concept in describing the family efforts to achieve balance and to restore and improve functioning that was disrupted through crisis.

According to the authors, family adaptation exists along a continuum. The positive end of the continuum is referred to as “bonadaptation.” Bonadaptation is characterized by balance at both the individual/family and family/community level that results in: 1) the strengthening and maintenance of family integrity, 2) the continued growth and development of individual family members, and 3) continued family independence and family sense of control. At the other end of the continuum is family maladaptation. This is characterized by imbalance at the multiple levels of family functioning and results in erosion of family integrity, stunted growth among family members, and the loss of family autonomy.

Family coping plays a vital role in determining whether or not adaptation is achieved. Coping within this model is a bridging concept that is comprised of both cognitive and behavioral components. Resources, perceptions, and behavioral responses all play a role in family coping and all interact as the family attempts to achieve balance in functioning. Similar to Lazarus’ theory, family coping within the Double ABCX Model utilizes several strategies that can be described as either problem-focused or emotion-focused in nature. According to McCubbin and Patterson (1983) family coping efforts can be directed at the following: 1) eliminating or avoiding the stressor, 2) managing the strains of the stressful situation, 3) maintaining the family’s morale and integrity, 4) gathering or developing resources to manage the situation, and/or 5) making planned changes within the family unit to accommodate the demands placed upon the family by the stressful situation. This concept links well to Lazarus’ Cognitive Theory of Psychological Stress and Coping. As in Lazarus’ model where individuals attempt to manage stress through problem-focused or emotion-focused coping, families in this

model can either make changes to adapt and eliminate the stress or practice avoidance to minimize the emotional impact of the situation.

Other researchers have utilized the Double ABCX Model of Family Stress as a theoretical base for their own studies. Xu (2007) used the Double ABCX Model as a theoretical foundation for developing a family-centered, strength-focused family system model that empowers families of children with developmental disabilities who are from culturally diverse backgrounds. In developing this model Xu explains the role that each factor in the Double ABCX Model has in relation to parents of children with disabilities. The “Aa”, or pile up factor, results from the multiple stressors related to time, money, effort, education, and related services that are created because of the disability. Xu suggests that family resources, or the “Bb” factor (social support, finances, physical and emotional health, and education) play a role helping the family with a child with a developmental disability manage a crisis. Xu next hypothesizes that cultural differences influence how families influence the “Cc” factor (the meaning a family attributes to a crisis) and the “Xx” factor (the family’s ability to adapt to stress). Xu argues that the Double ABCX model is of great value because of its emphasis on family functioning as an intercorrelated and dynamic construct. Also, it is hypothesized to be of value because its structure allows for clinical application as social service workers can coordinate assessment and intervention according to the factors found within the model to identify family needs and ways to assist with those needs.

Renty and Roeyers (2006) used the Double ABCX Model as a theoretical basis for exploring the role of social support and coping strategies in marital adaptation of men with autism spectrum disorder and their spouses. The researchers measured associations

between the Double ABCX Model “Bb” factor predictors (autism-specific traits, social support, coping strategies) and individual/marital adaptation. In doing so Renty and Roeyers found that each of the model components were related to adaptation in both men and women with informal social support being a strong, unique predictor for both genders.

Lastly, in a study of caregiver burden experienced after having a child diagnosed with autism, Stuart and McGrew (2009) assessed variables predicted to influence family outcomes related to family stress as hypothesized by McCubbin and Patterson in the Double ABCX Model of Family Stress. Severity of autistic symptoms, added life demands, social support, appraisal, and coping strategies were all analyzed in the context of the Double ABCX Model. A total of 78 families with children diagnosed with autism within the preceding 6 months participated in the study with each completing a series of questionnaires to obtain estimates of the previously mentioned variables. The Double ABCX model was found to be the strongest in predicting individual and family burden, accounting for 81% of individual burden and 77% of family burden related to having a child recently diagnosed with autism.

Both the Cognitive Theory of Psychological Stress and Coping and the Double ABCX Model of Family Stress offer insight into defining stress as a concept and the etiology of the construct for both individuals and families. These models also offer theoretical input into how stress can negatively influence a person or family unit while also providing strategies for effectively managing it. This provides a solid foundation for understanding possible causes of stress for parents and primary caregivers of children with developmental disabilities. Further, it offers insight into how parents can

successfully manage stress if it is experienced and how it can hinder a parent if not handled appropriately.

Definition of Developmental Disabilities

It is of great importance to have a fundamental understanding of the etiology and nature of developmental disabilities. The Michigan Mental Health Code (2009) defines a developmental disability as the following:

"Developmental disability" means either of the following:

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

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

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

(iii) Is likely to continue indefinitely.

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

(A) Self-care.

(B) Receptive and expressive language.

(C) Learning.

(D) Mobility.

(E) Self-direction.

(F) Capacity for independent living.

(G) Economic self-sufficiency.

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

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

The Developmental Disabilities Assistance and Bill of Rights Act (2000) offers a very similar definition of a developmental disability. It is estimated that approximately 3% of the United States population has some form of developmental disability (Larson et al., 2000). There are various factors that are thought to influence the expression of developmental disabilities. These include: 1) prenatal, perinatal, or postnatal brain injury or infection, 2) growth or nutritional abnormalities, 3) chromosomal and genetic variations, 4) premature birth, 5) poor diet and healthcare, 6) drug misuse during pregnancy, and 7) severe child abuse. Once identified developmental disabilities are usually classified in four primary categories: 1) nervous system disabilities, 2) sensory-related disabilities, 3) metabolic disorders, and 4) degenerative disorders (National Institutes of Health, 2010).

Various diagnoses qualify as developmental disabilities under current state and federal definitions. Epilepsy, spina bifida, cognitive impairment, cerebral palsy, and autism are but only a few examples of disorders that qualify as developmental disabilities. A developmental disability can be physically based, cognitively based, or a combination of both. Cognitive and physical disabilities typically occur with other comorbidities that also require attention and care. The functional limitations resulting from the disability place the individual in a situation where a continuum of care is usually required to meet their specialized needs. Care can range from minimal prompts to total physical care.

Developmental Disabilities and Parent Stress

As stated, persons with developmental disabilities typically require care and assistance in order to live effectively. For a child with a disability, this responsibility is usually placed upon the parents or primary caregiver to fulfill. If the child resides outside the parental home in a group residence or supported living situation, the parent is usually still responsible for any decisions related to their child's care. Also, parental concern for the child's wellness and monitoring of care provided by others by the caregiver still persists despite the child not living at home. All of this potentially places strain on the parent, especially in comparison to caregivers of non-disabled individuals. With children of normal development there is typically a predicted ending to the child's need for continual care and monitoring as the child will mature and become independent in meeting their own needs. As is understood through the definition of a developmental disability, the course of a disability is chronic and predicted to continue indefinitely. For the parent of a child with a developmental disability, the only prediction that can be made with some certainty is that their child will require some form of care and/or monitoring throughout their life. This can result in increased stress for the parent. This ongoing sense of stress placed on the parent can have a negative impact on the health of the parent and inhibit the caregiver's capacity to effectively raise their child if managed unsuccessfully.

Research lends support to the link between disabilities and parental stress. Miodrag and Hodapp (2010) performed a comprehensive review of studies that analyzed the impact of chronic stress on health outcomes for parents of children with developmental disabilities. In this study the authors remark that the link between parenting a child with a developmental disability and stress does indeed appear to have a

negative influence on caregiver health, especially for mothers. It is concluded that this is an area that should be of primary interest because it could become a significant public health concern. This could occur as chronic health problems brought about by stress can negatively impact a mother's ability to provide necessary care for the child and disrupt the parent-child relationship. The authors lastly cite that through recognition of this issue the advancement of research, public policy, and practice may occur which ultimately would enhance the well-being of families of children with developmental disabilities.

Other research supports the relationship between parenting a child with a developmental disability and increased stress experienced by the caregiver. In a study of parents of children with epilepsy, learning difficulties and depression stemming from epilepsy correlated with high levels of stress in parents (Cushner-Weinstein et al., 2008). Similarly, Hussain and Juyal (2007) conducted a study investigating stress appraisal and coping strategies among parents of children with physical disabilities. For their study the authors provided instruments measuring stress and coping style to 60 parents (30 parents of normally developing children and 30 parents of children with physical disabilities). Stress levels among parents of children with physical disabilities were found to be significantly higher and differed greatly from parents of children without physical conditions.

Oelofson and Richardson (2006) analyzed family coherence and parenting stress in mothers and fathers of preschool children with a developmental disability. The researchers found that parents of children with a developmental disability reported higher levels of parenting stress with 84% of mothers' and 67% of fathers' scores being within the clinical range of the measure utilized. Parents of children with disabilities in the study

also consistently reported a lower sense of family coherence. Also, in a study exploring the relationship between type of disability and parenting stress, Gupta (2007) found that parents who had a child with a developmental disability reported more stress than parents of children with other types of health problems (e.g., HIV, asthma) and more than parents of normally developing children.

Mitchell and Hauser-Cram (2010) conducted a study that investigated early childhood predictors of both positive and negative parent-adolescent relationships for parents with adolescents with developmental disabilities. One of the primary research questions for this study was to examine whether or not factors exist in early childhood that influence the relationship that a mother and father have with their child with a developmental disability once the child becomes a teenager. The study examined the relationships of 72 mothers and 53 fathers with their 15-year-old teens with a developmental disability. Information was gathered through home visits by staff members who were not aware of the research questions for the study. Additionally, several measures were used to gather relevant data. Results from the study revealed that two important factors contributed to the nature of the relationship between parent and child in the teenage years: extent of child behavior problems and the stress that parents experienced resulting from their parenting roles. Regarding stress specifically, perceived parenting stress when the child was 3-years-old was a significant variable in the quality of relationship that both mothers and fathers had with their adolescent child. Higher stress levels when the child was young was significantly tied to poorer relationships between parent and adolescent child with a developmental disability. The authors speculate that early stress by the parents may have a negative impact on the parent-child attachment

process which continues to reveal itself through lower ratings of relationship when the child matures to adolescence. This study reveals the significant impact that parenting a child with a developmental disability can have on the caregiver in terms of stress, but also how this stress can cause further disruption in the future.

Severity of Disability and Parenting Stress

The severity and multifaceted nature of a child's disability can have a negative impact on the level of stress experienced by parents and primary caregivers. Richman, Belmont, Kim, Slavin, and Hayner (2009) investigated the impact that specific childhood developmental disabilities had on parenting stress levels. The researchers analyzed the similarities and differences in parent reported stress, patterns of challenging behaviors by the child, and characteristic of autism for parents of children with Cornelia de Lange Syndrome (a rare genetic disorder caused by abnormalities on chromosomes 5, 10 and X) and Down syndrome. The study included 25 children with Cornelia de Lange Syndrome and 23 children with Down syndrome all ranging in age from 5 to 24 years of age. Parents filled out multiple inventories to measure the stress variables of interest. Findings from the study indicated that parents of children with Cornelia de Lange Syndrome experienced significantly higher levels of stress and the amount of stress experienced was significantly related to the amount of challenging behavior, pro-social behavior, and self-injury/stereotypy related to the disorder exhibited by the child. The researchers speculate that a reciprocal relationship may exist between parenting stress and severity of disability. It is suggested that disruptive behavior and low levels of adaptive and independent functioning by the child may exacerbate parent stress and the parent, in turn,

acts in a manner toward the child that further perpetuates the deficits that the child is already experiencing.

Also related to severity of disability, Vermaes and her colleagues (2008) investigated the role of environmental resources in parental adjustment for caregivers of children with spina bifida. The authors hypothesized that parents (both mothers and fathers) of children with spina bifida would experience higher rates of stress than parents in a non-clinical reference group. Eighty-three parents participated in the study. Severity of spina bifida experienced by children was found to be positively associated with parenting stress. The severity of limitations in mobility, bladder, and bowel dysfunction associated with spina bifida were also related to ongoing stress for parents.

Plant and Sanders (2007) conducted a study that investigated the predictors, mediators and moderators of parent stress in families of preschool-aged children with physical and cognitive developmental disabilities. The aim of the study was to identify factors that influence parent stress and to utilize those variables in an intervention program that may assist families of children with developmental disabilities. The study included 105 families who had a pre-school aged child with a disability. The authors found that the level of disability was a significant predictor of parental stress. Difficult parenting tasks and child behavioral problems were also significantly related to parent stress levels.

Macias, Roberts, Saylor, and Fussell (2006) examined the link between toileting concerns, behavior problems, and parental stress for parents who had children with special healthcare needs. These children had either neural tube defects, developmental-behavioral disabilities, or a history of perinatal intraventricular hemorrhage. Parents

whose child's special health care needs were complicated by toileting concerns reported significantly more personal distress than those parents whose children were continent.

Research further suggests that parents experience less stress when their child experiences a milder form of disability. Ello and Donovan (2005) assessed the relationship between parenting stress and a child's ability to functionally communicate. The research indicated that the ability to functionally communicate was negatively related to the level of parenting stress suggesting that the more independently the child functioned significantly related to the amount of stress experienced by the parent.

Another study by Wulffaert and her colleagues (2009) examined the relationship between parenting stress and child characteristics for caregivers of children with CHARGE syndrome. CHARGE syndrome is an acronym derived from a combination of childhood disability issues including **C**oloboma of the eyes, **H**ear defects, **A**tresia of the choanae, **R**etardation of growth and/or development and/or central nervous system anomalies, **G**enital hypoplasia, and **E**ar anomalies and/or deafness. A primary aim of the research was to determine whether or not characteristic of CHARGE syndrome and level of adaptive functioning related to parent stress levels. Parents of 22 children with the syndrome participated in the study. The results of the study showed that parenting stress was related to increases of child behavioral problems on measurements for depression, disruptive/antisocial behavior, self-absorbed behavior, and the autism screening algorithm. Also, though not found to be significant, a trend toward higher parent stress for caregivers with non-speaking children was found. These results suggest that the more behaviorally and physically impaired a child with CHARGE is, the more stress that the parent will experience.

Lach and colleagues (2009) also analyzed the impact of severity of disability on parenting stress. The researchers utilized the data gathered from the National Longitudinal Survey of Children and Youth in Canada to develop four primary groups of caregivers: 1) caregivers of children with a neurological disorder and externalizing behavior problems, 2) caregivers of children with a neurological disorder only, 3) caregivers of children with an externalizing behavior problem only, and 4) caregivers of children with neither condition. The researchers utilized the data collected to measure caregiver health, caregiver psychological health, and caregiver psychosocial adjustment. Results from the study showed that caregivers who had children with both a neurological disorder and an externalizing behavior disorder were more likely to report higher family distress as well as poorer physical health than to parents in who had children with only one condition or neither condition. This suggests that the severity and complexity of the disorders had a significant impact on stress and health for caregivers in the study.

Lastly, Grosse, Flores, Ouyang, Robbins, and Tilford (2009) examined the impact that having a child with spina bifida had on parents. The primary caregivers of 98 children ranging in age from 0 to 17 with spina bifida were surveyed. Forty-nine parents of children without spina bifida also participated in the study. Several measures were administered to the parents who were separated into groups by level and significance of the spina bifida related lesion (sacral, lower lumbar, and upper lumbar/thoracic). The authors noted that lesion level is associated with level of impairment. Specifically, persons with lower level lesions are ambulatory whereas those with higher level lesions are more significantly impacted and typically are not able to walk without assistance. The researchers found that parents of children with higher level lesions (more impaired)

experienced less sleep and lower quality of well-being in comparison to parents of children with lower level lesions (less impaired). Interestingly, parents of children with lower level lesions scored similarly to parents of children without spina bifida who took part in the study.

Life Orientation and Parenting Stress

Life orientation, or an individual's tendency toward optimism or pessimism, has been found to have an impact on stress levels. The authors of positive psychology, lead by Martin Seligman, believe that optimism is a factor that leads to a subjective positive life experience that improves quality of life and prevents psychopathology and emptiness (Seligman & Csikszentmihalyi, 2000). Positive psychology theorists believe that a tendency toward optimism for the future is a valued trait that has a significant impact on the individual. People high in optimism are hypothesized to have better moods, are more persevering and successful, are more effective in problem solving, and experience better physical health according to Seligman and Csikszentmihalyi (2000).

Research studies have supported the ideas put forth by positive psychology theorists. Kayfitz, Gragg, and Orr (2010) explored the impact that positive experiences had on mothers and fathers of children with autism. Specifically, the study examined the positive experiences that parents raising school-aged children with autism reported with a particular focus placed on these experiences in the context of parenting stress. The researchers sought to understand if parental focus on the positive aspects of raising a child with autism had a significant impact on the stress they experienced. Participants for the study included 23 mother/father pairs who had children with autistic disorder, asperger's disorder, or pervasive developmental disorder-not otherwise specified

according to the DSM-IV classification. Families who participated in the study were asked to complete a survey packet that included a demographic measure, a parenting stress survey, and an instrument measuring the positive contributions of the family member with a developmental disability. Scores obtained from both mothers and fathers on positive experiences were found to be significantly negatively correlated with parental distress suggesting that parents who were able to view the contributions of their child more positively experienced relief from the parenting stress associated with caring for a child with a developmental disability such as autism spectrum disorders. Mothers in the study reported significantly more positive experiences than fathers reported. The authors speculate that having a more positive approach to viewing their child with autism allows parents to pay less attention to the child's limitations and, in turn, potentially their limitations as parents and protect against a negative sense of well-being.

Aspinwall and Grunhart (2000) also conducted a study in relation to optimism and its impact on effective coping. The authors concluded from their study that higher levels of optimism facilitates the ability to process information related to health and that optimistic beliefs may play an especially important and beneficial role in earlier stages of the coping process. It was determined from their study that traits of optimism, in conjunction with coping, may offer some benefits in managing multiple life stressors.

Baker, Blacher, and Olsson (2005) conducted a study investigating the impact of optimism on measures of well-being for parents of pre-school children with and without developmental delays. The study primarily explored the correlation between child behavior problems and various measures of parental well-being (e.g., depression, marital adjustment), as well as the moderating impact of optimism. Though the results found

generally no difference for depression or marital adjustment measures between parents of children with or without delays, behavior problems were strongly related to scores on these measures. Additionally, optimism moderated this relationship. This was particularly true for mothers. Mothers who were rated as being less optimistic reported lower scores on measures of well-being when child behaviors were high, more so than mothers who were more optimistic.

De Schipper and colleagues (2008) conducted a study comparing caregiver mood and observed quality of interaction between the caregiver and the children in their care. Analysis of several traits found that optimism contributed significantly to both the quality of caregiver behavior toward children and to the children's well-being.

In a study conducted by Karazsia and Wildman (2009), the mediating role of parenting behaviors on positive affect and negative affects in the context of child behavior problems was explored. The authors hypothesized that parental self-reports of positive affect (the extent to which a person experiences positive thoughts and emotions) would be related to child behavior problems. Participants for the study included 1,461 primary caregivers of children ranging in age from 2 to 16 who presented at one of four primary medical care clinics in the Midwest. Caregivers were asked to complete a series of questionnaires that assessed demographics, child behaviors, and positive/negative affect. Increased levels of parental positive affect were associated with decreased problem behaviors by the child. Also, high levels of positive affect were significantly correlated with low levels of maladaptive parenting behaviors. In line with the theories described previously on positive psychology, this study found that positive thinking was associated with lower levels of problem behaviors by the child and fewer maladaptive

parenting behaviors. Based on this study, it is reasonable to assert that fewer child difficulties and more adaptive parenting allows for less stress related to caring for a child with or without developmental disabilities.

Social Support and Parenting Stress

Social support appears to be a strong predictor of stress for parents of children with disabilities. Langford and colleagues (1997), in a conceptual analysis of social support, found that social support was linked to various positive health states that included effective coping behaviors, sense of stability, psychological well-being, and perceived control among others. This linkage to the outside world to receive regard and assistance appears to negate the impact that stress can have on parental well-being. Other research supports this position.

Sipal, Schuengel, Voorman, Van Eck, and Becher (2009) examined the impact that parenting stress and social support had on the course of behavioral problems for children with cerebral palsy. The study's primary interest was to test whether parenting stress and social support played a significant role in the course of behavior problems for the child with cerebral palsy. Participants for the study were recruited as part of a 3-year longitudinal investigation and included 110 parents and their children diagnosed with cerebral palsy. Children were assessed for motor ability while parents completed surveys measuring their child's behavioral problems and their own perceived parenting stress along with two measures of social support. Findings revealed that the "situational stress vs. support" measure was significantly correlated with the "relational stress vs. support" meaning that stress caused by lack of environmental support correlated with stress experienced by parents in their relationships with their child and their significant other.

Also, social support was significantly tied to child behavior problems (internalizing and externalizing).

Pottie and Ingram (2008) conducted a study investigating daily stress, coping, and well-being in parents of children with autism. Specifically, the moderating effects of coping on the distress experienced by parents as well as the overall well-being of parents were examined. Social support was found to moderate the daily stress/mood relationship. The authors suggest that social support can potentially enhance well-being and devalue daily distress in parents of children with autism.

Beckman (1991), in a study comparing the perceptions of parents of children with and without disabilities, found that parents of children with disabilities reported more care giving requirements and stress in all domains. Stress was also negatively correlated with informal support (friends, family) for both mothers and fathers and was positively associated with increased care giving requirements for mothers.

Spratt, Saylor, and Macias (2007) conducted a study that also investigated correlates of stress for parents of children with developmental disabilities. However, in this study, a broader range of disabilities were analyzed. The sample included children experiencing a variety of health, developmental, behavioral and neurological problems. Utilizing a multiple regression analysis the authors found that the perceived inadequacy of family support and maternal support were related to parenting stress in the samples investigated.

Social support may also have an impact on parental cognitions. Hassell, Rose, and McDonald (2006) studied the impact of cognitive appraisals on levels of stress. The study investigated the correlations between parental cognitions, family support, child

characteristics, and stress. The results indicated that, in addition to the finding that the most variance in parenting stress was explained by child behavior difficulties, there was a strong correlation between family support and parenting stress. Similarly, Smith, Oliver, and Innocenti (2001) found in their study of parenting stress in families of children with disabilities that the variable of social support predicted parenting stress more accurately than variables related to the child's level of functioning.

Another study analyzing the relationship of social support and cognitions of mothers with children with developmental delays was conducted by Seybold, Fritz, and MacPhee (1991). The authors examined the correlations between support networks and maternal self-perceptions. For mothers, satisfaction with supports was related to their sense of parenting competence and their ability to manage and balance a multitude of role demands. The logical conclusion that can be drawn from this finding is that satisfaction with social supports would result in decreased stress through the mother feeling more competent in the role as a parent. Mothers of children who were more severely disabled were less satisfied with the support received and had fewer friends or family who they relied upon for support.

Cowen and Reed (2002) examined the impact of respite care received by at risk families of children with developmental disabilities on stress levels. Respite care in this study would be considered a formal social support. The researchers found that the extensive care needs of the children and the family's inability to cope with the situation were major contributors to high stress in the relationships among family members. Comparison of tests offered to parents before and after services were rendered revealed significant decreases in total stress. Life stress, social support, and service level were all

correlated to the occurrence of child maltreatment during the families' time involved in the study.

Summary of Previous Research

Developmental disabilities encompass an extensive collection of cognitive and physical disorders. These problems cause limitations that can last indefinitely. This results in a reliance upon others by the child with a disability to have their basic needs met. Assistance provided to the person with a disability, especially during childhood, usually falls to the parents or primary caregiver. This assistance is greater and more enduring in nature than that which would be provided to a normally developing child.

Research supports the conclusion that parents of children with developmental disabilities experience more stress than parents of normally developing children. The prolonged amount of time and energy that must be devoted to the child's health and safety likely contribute to stress. Whereas for parents of children without disabilities a time can be reasonably predicted when their child will be fully independent and parental involvement becomes more supportive in nature, the same is not true for parents of children with a cognitive and/or physical disability. The child's level of impairment can remain the same, or worsen, throughout their life. This places increased demands upon the parent to ensure their needs are met. This can raise a certain level of distress within the parent.

Research suggests that certain variables, existing both internal and external to the parent, contribute greatly to the stress experienced relative to caring for a child with a developmental disability. In relation to the environment, past studies show that social support is a pivotal factor in predicting stress for parents of children with disabilities. If a

parent has a functional and available support system in place to assist them, less stress results. Parents of children with disabilities experience an increased burden related to providing the level of care their child requires. Social support, both formal and informal, allows the parent to possibly delegate at least a portion of the responsibility for child care and/or tending to other important tasks in life. Social support also provides the parent an outlet to vent their frustration and stress related to child care while also helping the parent devise options to alleviate stress that the parent alone may not have considered. More formal supports like agency based case management services and advocacy organizations may assist the parent by providing services such as paid supports to help care for the child, respite services, or experienced referral support should the parent require assistance in being linked with available services. In sum, social support is vital to the wellness of a parent with a child with a developmental disability. As has been stated, without a stable support system in place, parents are at risk of experiencing the detrimental impact of stress.

A variable that exists as part of the parent's internal psychological structure that has been found to correlate with stress is life orientation, or the orientation toward optimism or pessimism. Research is consistent in finding that a parent's orientation toward optimism results in less stress in relation to caring for their child with a developmental disability. Life orientation is paramount to parents of children with disabilities as this trait impacts both parent and child. As has been stated, the course of a developmental disability is chronic in nature. There is typically no known end to the disability. A parent must find a way to continue to provide the level of care that a child with a developmental disability requires knowing that their child will likely never recover

and become fully independent. For the parent this can have a dampening effect on their spirit. Optimism is key in helping the parent to continue to move forward. This trait allows the parent to see beyond the moment and view the potential value in an otherwise neutral, or negative, situation. Optimism is also a very important factor as it also could potentially impact the child. If a parent is not hopeful about their life and their future, then the parent is likely not hopeful for their child either. An optimistic parent is more likely to see the possibility that their child may attain a certain level of independent functioning or that the child may be able to develop a certain skill set. This optimistic approach toward their child allows the parent to continue to provide support to their child without a sense of hopelessness. Parents who are pessimistic are likely to view their child as an individual who will never function independently and, in turn, may parent with that thought in mind. This likely inhibits the child's ability to develop certain skills that they otherwise would have been able to.

Lastly, severity of disability for the child is tied to parent stress in the literature. As has been stated, a child with a disability can experience a wide range of functional limitations resulting from the disorder(s). Disabilities that are more severe in nature, and limit the child's ability for independence, have been consistently found in research to result in greater levels of stress for the parent. Though assistance may be provided through other means, ultimately the parent or primary caregiver is responsible for the majority of care and monitoring provided to the child. In considering what this may involve for the parent, one must review the number of daily living skills and personal care skills that a normally developing child develops as he or she ages. Among others, basic hygiene, the ability to communicate functionally with others, decision-making, and

self-directed action are all skills that a child of normal development learns and molds as they age. A child with a developmental disability may likely be impaired in some, or all, of these areas. Depending upon the severity of the disability there may be mild to severe impairment in these areas of functioning. The parent may only have to offer minimal prompts and additional supervision for the more functional child with a disability. For children whose disability is more pronounced and severe, the parent may have to provide total care in all areas of functioning. This continual responsibility for their child's wellness can take time away from the parent's own needs. This places a burden on the parent which can result in stress. As the child's severity of disability increases, so typically does the level of time commitment the parent must make to ensure that their child's needs are met. This can have a significant impact on the parent's sense of well-being and stability.

Parents must adopt strategies to manage the stress and alleviate the psychological and physical burden they experience through caring for their child. For parents, the ability to cope effectively will determine how successful stress reduction is. Lazarus (1986) identifies two primary individual coping styles: problem-focused and emotion-focused. Problem-focused coping is future-oriented and focused on problem elimination. Emotion-focused coping places emphasis on the present through eliminating negative feelings related to the stress experienced. Coping strategies are thought to occur automatically and are stable in nature. Though Lazarus suggests that the use of any particular coping strategy is not inherently good or bad, a solid foundation of research exists that suggests that those who utilize problem-focused coping strategies are more successful in reducing stress.

Theoretical Model of Mediation for Coping Style on Stress Perception

As previously stated, various factors are thought to contribute to the stress experienced by parents and primary caregivers of children with developmental disabilities. The current base of research in this area has relied heavily on measuring the direct relationship between variables hypothesized to influence stress and the actual perception of stress for caregivers. Research has not given needed and necessary attention to mediating factors and how indirect relationships influence parental stress. Focus on such variables could provide rich data that can be utilized by the academic and clinical communities alike to aid parents as they manage the stressors of caring for a child with a developmental disability.

Coping style as a mediating factor may be the mechanism through which parents of children with developmental disabilities process the stress they experience. Additionally, a parent's style of coping with a situation could determine whether or not stress results. As previously stated, research has demonstrated that parents who utilize a problem-focused coping style experience less stress than parents using an emotion-focused style. Given this, it is reasonable to assert that, if a parent is optimistic, has a strong social support system, and/or has a child with a mild disability, stress will still occur if the parent uses emotion-focused coping methods. In other words an individual using a problem-focused coping style will likely experience less stress than an individual using emotion-focused coping strategies who otherwise has the same life circumstances. If meditational significance is found, this may offer a foundation of knowledge regarding how coping style is the "vehicle" that drives stress perception. Though variables exist that have been found to directly influence stress, the proposed meditational model outlining

this relationship may show that ultimately coping style strongly influences whether or not stress is experienced.

Historically research has been scant in analyzing coping style in this indirect, or mediating, manner. Past models have sought to understand the nature of relationships in a direct manner. Here, a new model is being offered that suggests that the influence of stress influencing variables on the perception of stress follows an indirect route. Specifically, this theoretical model hypothesizes that coping style acts as a filter between variables thought to perpetuate stress and the experience of stress for parents and primary caregivers of children with developmental disabilities. Further, it is proposed that coping in and of itself does not mediate stress. Rather, the specific type of coping a parent uses is hypothesized to influence the relationship between known stress causing variables and the perception of stress for caregivers. The theoretical framework and its relationship to the direct pathway model can be found in Figure 1. If this model is supported then a fundamental gap in knowledge that currently exists in the area of parenting stress for caregivers of children with developmental disabilities could be filled. Further, the amount of variance that exists between the stress variables and parenting stress could be minimized which could have significant implications for researchers, clinicians, and caregivers alike. Through analysis of this new mediating theoretical framework, a significant contribution may be made in how parenting stress is perceived by researchers and clinicians alike.

Research Questions

Based upon the aforementioned information, the aim of the present study is to build a theoretical framework to determine if coping style has a mediating influence

between stress influencing variables and the perception of stress for parents/caregivers of children with physical and/or cognitive disabilities. Specifically, this study examined if coping style mediates the impact that known stress influencing variables (e.g., life orientation, severity of disability, social support) has on the degree of stress parents/caregivers experience. Statistical analyses were divided into preliminary and primary groupings. Preliminary analyses were completed to examine the relationship between identified demographic variables and stress experienced by parents and primary caregivers. Statistically, analysis of variance was used to analyze the data in the preliminary analyses. The preliminary analyses sought to answer the following questions:

- 1) The first set of preliminary analyses examined the relationship between caregiver gender, caregiver age, caregiver relationship to the child with a developmental disability and stress experienced by caregivers. Specifically: A) Do female parents/primary caregivers experience more stress than male parents/primary caregivers?, B) Do older parents/primary caregivers experience more stress than younger parents/primary caregivers?, and C) Do biological mothers experience more stress than primary caregivers who are not the biological mother of the child with a developmental disability?
- 2) The second set of preliminary analyses investigated the relationship between child age, child disability type, parental coping style, and the stress experienced by parents and primary caregivers of children with developmental disabilities. Specifically: A) Do parents/primary caregivers who have older children with disabilities experience more stress than parents/primary caregivers of younger children with developmental disabilities?, B) Do parents/primary caregivers of children with both cognitive and physical disabilities experience more stress than parents/ primary caregivers of children

who do not have both cognitive and physical disabilities?, and C) Do parents/primary caregivers with an emotion-focused coping style experience more stress than parents/primary caregivers with a problem-focused coping style?

3) The third set of preliminary analyses examined the relationship between social support, severity of disability, life orientation and stress experienced by caregivers. Specifically: A) Do parents/caregivers with a high level of social support experience less stress than parents with a low level of social support?, B) Do parents/caregivers who have a child with a low level of disability experience less stress than parents who have a child with a high level of disability?, and C) Do parents/caregivers with an optimistic outlook on life experience less stress than parents who are pessimistic?

Primary analyses were completed to determine if coping style mediates the relationship between stress influencing variables and the experience of stress for parents and primary caregivers of children with developmental disabilities. The statistical analyses followed the recommendations for mediation provided by Baron and Kenny (1986) and were conducted in an effort to answer the following questions:

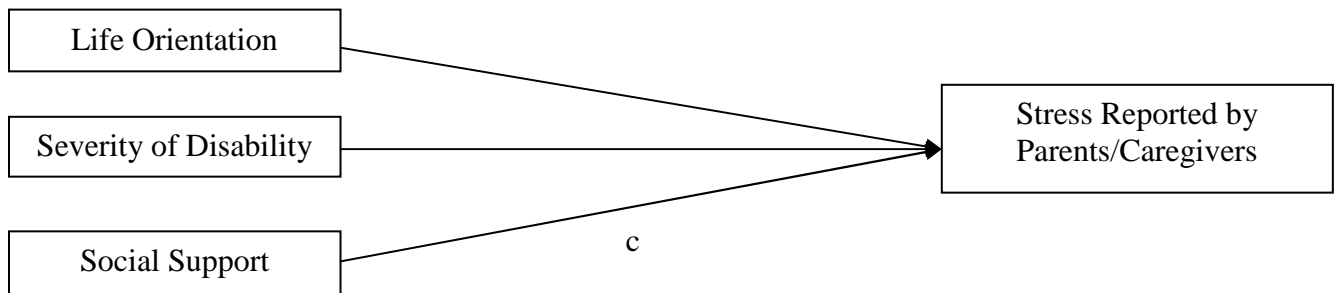
1) The first series of questions explored the relationship between social support, severity of disability, life orientation and stress experienced by parents and/or caregivers of children with disabilities. Specifically: A) Do parents/caregivers with a high level of social support experience less stress than parents with a low level of social support?, B) Do parents/caregivers who have a child with a low level of disability experience less stress than parents who have a child with a high level of disability?, and C) Do parents/caregivers with an optimistic outlook on life experience less stress than parents who are pessimistic?

2) The second series of questions analyzed the relationship between social support, severity of child disability, life orientation and coping style utilization by parents of children with developmental disabilities. Specifically: A) Do parents/caregivers with a high level of social support utilize a problem-focused coping style?, B) Do parents/caregivers who have a child with a low level of disability utilize a problem-focused coping style?, and C) Do parents/caregivers who are optimistic utilize a problem-focused coping style?

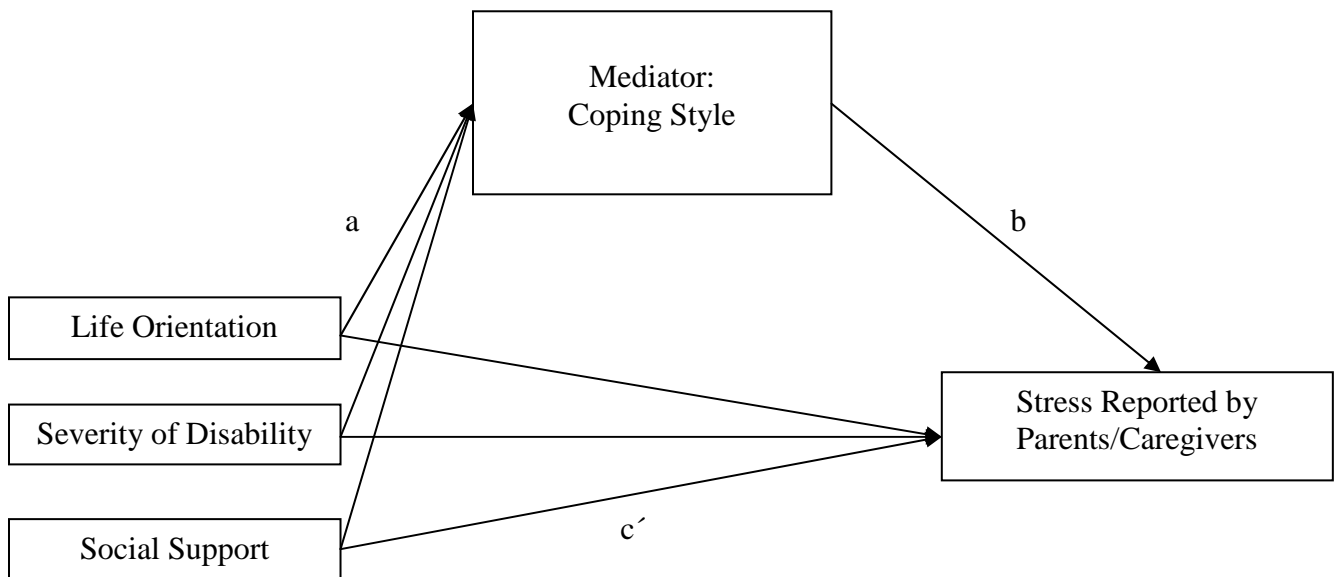
3) The third series of questions examined the relationship between coping style and stress experienced by parents and/or caregivers of children with developmental disabilities. Specifically: A) Do parents/caregivers who have an orientation toward a problem-focused coping style experience less perceived stress than parents/caregivers who utilize an emotion-focused coping style?

4) The last series of research questions examined the mediating impact coping style has on social support, severity of disability, life orientation in terms of their ability to predict parent/caregiver stress. Specifically, A) Does coping style impact the relationship between social support, severity of disability, and life orientation in predicting stress for parents/caregivers of children with developmental disabilities?

Figure 1 Theoretical Model of Mediation for Coping Style on Stress Perception



a) Direct Pathway



b) Indirect/Mediated Pathway

Figure 1. Theoretical model of mediation hypothesized in study (on the basis of Baron & Kenny, 1986). The direct pathway indicates the relationship between stress influencing variables and stress experienced by parent/caregivers of individuals with developmental disabilities. The indirect pathway proposes that coping style mediates the relationship between the stress influencing factors and stress perception.

Figure 2 Research Questions, Variables, and Statistical Analyses**Preliminary Analyses:**

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q1: How do differences in parent/primary caregiver gender, age, and relationship to the child with a developmental disability relate to the stress experienced by parents/primary caregivers?</p> <p>H1: There will be a main effect for gender on stress experienced by parents/primary caregivers. Females will report a higher level of stress than males.</p> <p>H2: There will be a main effect for age on stress experienced by parents/primary caregivers. Older parents/primary caregivers will experience more stress than younger parents/primary caregivers.</p> <p>H3: There will be a main effect for relationship to the child with a developmental disability on stress experienced by parents/primary caregivers. Biological mothers will experience more stress than any other relationship with the child with a developmental disability.</p>	<p><u>Independent Variables:</u> Parent/Primary Caregiver Gender</p> <p>Parent/Primary Caregiver Age: Young vs. Old</p> <p>Parent/Primary Caregiver Relationship to Child: Biological Mother vs. Not Biological Mother</p> <p><u>Dependent Variable:</u> Parental Distress Scale score on Parenting Stress Index</p>	<p>A factorial analysis of variance (ANOVA) will be utilized to examine the influence that parent/primary caregiver gender, parent/primary caregiver age, and relationship to child have on the stress experienced by parents/primary caregivers of children with developmental disabilities.</p>

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q2: How do differences in child age, disability type, and parent/primary caregiver coping style relate to stress experienced by parents/primary caregivers?</p> <p>H1: There will be a main effect for child age on stress. Parents/primary caregivers of older children will experience more stress than parents/primary caregivers of younger children.</p> <p>H2: There will be a main effect for disability type on stress. Parents/primary caregivers of children with combined cognitive and physical disabilities will experience more stress than parents/primary caregivers of children with any other disability type.</p> <p>H3: There will be a main effect for coping style on stress. Parents/primary caregivers who utilize an emotion-focused coping style will experience more stress than those who utilize a problem-focused coping style.</p>	<p><u>Independent Variables:</u></p> <p>Child Age: Young vs. Old</p> <p>Disability Type: Combined Cognitive and Physical Disability vs. Not Combined Cognitive and Physical Disability</p> <p>Coping Style: Problem-focused vs. Emotion-focused</p> <p><u>Dependent Variable:</u> Parental Distress Scale score on Parenting Stress Index</p>	<p>A factorial analysis of variance (ANOVA) will be utilized to examine the influence that child age, type of disability, and parent/primary caregiver coping style have on the stress experienced by parents/primary caregivers of children with developmental disabilities.</p>

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q3: How do differences in social support, severity of disability, and life orientation relate to stress experienced by parents/primary caregivers?</p> <p>H1: There will be a main effect for social support on stress. Parents/primary caregivers with a high level of social support will experience less stress than parents/primary caregivers with a low level of social support.</p> <p>H2: There will be a main effect for severity of disability on stress. Parents/primary caregivers of children with a low severity of disability will experience less stress than parents/primary caregivers of children with a high severity of disability.</p> <p>H3: There will be a main effect for life orientation on stress. Parents/primary caregivers who have a high level of optimism will experience less stress than parents/primary caregivers with a low level of optimism.</p>	<p><u>Independent Variables:</u></p> <p>Social Support: High vs. Low</p> <p>Severity of Disability: High vs. Low</p> <p>Life Orientation: High vs. Low</p> <p><u>Dependent Variable:</u> Parental Distress Scale score on Parenting Stress Index</p>	<p>A factorial analysis of variance (ANOVA) will be utilized to examine the influence that social support, severity of disability, and life orientation have on the stress experienced by parents and primary caregivers of children with developmental disabilities.</p>

Primary Analyses:

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q1: Does social support, severity of child disability, and life orientation have predictive value in determining the type of coping style used by parents/caregivers of children with developmental disabilities?</p> <p>H1: High social support will predict a problem-focused coping style</p> <p>H2: Low level of disability will predict a problem-focused coping style</p> <p>H3: High optimism will predict a problem-focused coping style.</p>	<p><u>Predictor Variables:</u> Level of social support Level of severity of child's disability Level of optimism</p> <p><u>Criterion Variable:</u> Coping Orientation (measured as a continuous variable)</p>	<p>A regression analysis will be utilized to examine the variance explained by the social support, severity of child disability, and life orientation in predicting the use of problem-focused or emotion-focused coping style for parents/caregivers of children with developmental disabilities.</p>

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q2: Does coping style have predictive value in determining level of stress experienced by parents/caregivers/caregivers of children with developmental disabilities?</p> <p>H1: An orientation toward a problem-focused coping style will predict a low level of stress for parents/caregivers of children with developmental disabilities</p>	<p><u>Predictor Variables:</u> Coping Orientation (measured as a continuous variable)</p> <p><u>Criterion Variable:</u> Parental/caregiver stress</p>	<p>A regression analysis will be utilized to examine the variance explained by coping style in predicting stress for parents/caregivers of children with developmental disabilities.</p>

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q3: Does social support, severity of child disability, and life orientation have predictive value in determining level of stress experienced by parents/caregivers of children with developmental disabilities?</p> <p>H1: High social support will predict a low level of stress for parents/caregivers</p> <p>H2: Low level of disability will predict a low level of stress for parents/caregivers</p> <p>H3: High optimism will predict a low level of stress for parents/caregivers</p>	<p><u>Predictor Variables:</u> Level of social support Level of severity of child's disability Level of optimism</p> <p><u>Criterion Variable:</u> Parental/caregiver stress</p>	<p>A regression analysis will be utilized to examine the variance explained by the social support, severity of child disability, and life orientation in predicting the total amount of stress experienced by parents/caregivers of children with developmental disabilities.</p>

Research Questions and Hypotheses	Variables Under Investigation	Statistical Analysis
<p>Q4: Does coping style mediate the predictive influence that level of social support, level of severity of child's disability, and life orientation have in determining the total amount of stress experienced by parents/caregivers of children with developmental disabilities?</p> <p>H1: Social support will not be a significant predictor of stress by the parent/caregiver if the parent/caregiver exhibits an orientation toward the use of an emotion-focused coping style. Coping style is predicted to be a significant mediator. An orientation toward emotion-focused coping will negate the significant correlation that is predicted to exist between social support and stress.</p> <p>H2: Level of severity of child's disability will not be a significant predictor of stress experienced by the parent/caregiver if the parent/caregiver exhibits an orientation toward an emotion-focused coping style. Coping style is</p>	<p><u>Predictor Variables:</u> Level of social support Level of severity of child's disability Level of optimism</p> <p><u>Mediating Variable:</u> Coping Orientation (measured as a continuous variable)</p> <p><u>Criterion Variable:</u> Parental/caregiver stress</p>	<p>A regression analysis will be utilized to examine the predictive influence of social support, severity of child disability, and life orientation in determining the amount of stress experienced by parents/caregivers of a child with a developmental disability with coping style included as a potential mediating variable.</p>

<p>predicted to be a significant mediator. An orientation toward emotion-focused coping will negate the significant correlation that is predicted to exist between severity of disability and stress.</p> <p>H3: Life orientation will not be a significant predictor of stress experienced by the parent/caregiver if the parent/caregiver exhibits an orientation toward an emotion-focused coping style. Coping style is predicted to be a significant mediator. An orientation toward emotion-focused coping will negate the significant correlation that is predicted to exist between life orientation and stress.</p>		
--	--	--

* Parent gender, marital status, caregiver status, parent age, child age, type of disability, and ethnicity served as controlling variables in all regression analyses performed. These variables were held as constants in order to measure their influence on the relationship between the independent and dependent variables in each analysis.

CHAPTER III

Methodology

Participants

Participants were 127 parents or primary caregivers of children with developmental disabilities receiving services through a large Community Mental Health agency in Southeastern Michigan. For this study the biological or adoptive parent was accepted for participation and primary caregivers could include grandparents, extended relatives, or any other individual who provided the majority of care for the child with the developmental disability. Parents and primary caregivers of children with developmental disabilities who ranged in age from birth to 26 years were included for participation in the study. A developmental disability was identified as any cognitive and/or physical condition that was present prior to the age of 22, was predicted to continue indefinitely, and caused substantial adaptive functioning limitations for the child. Parent or primary caregivers of children whose condition met these criteria were included as potential participants in the study. In the cases where two-parent homes were present, both caregivers were included for participation in the study. Since participants in the study were anonymous, comparisons between parents of the same child could not be made.

Instruments

Parenting Stress Index-Short Form (PSI-SF) - The PSI-SF is an abbreviated version of the full Parenting Stress Index (Abidin, 1995). The PSI-SF is a thirty-six item measure of parent stress consisting of three subscales that are as follows: 1) Parental Distress, 2) Parent-Child Dysfunctional Interaction, and 3) Difficult Child. These subscales collectively yield a Total Stress Scale. The Parental Distress Subscale indicates

the level of stress resulting from personal factors and life restrictions resulting from the demands of child care. The Parent-Child Dysfunctional Interaction Scale is an indication of parents' dissatisfaction with the interactions they have had with their children and the Difficult Child Subscale consists of items that measure parents' perceptions of the child's self-regulatory abilities. The Total Stress Scale gives a score of overall parenting stress that a person is experiencing. Items are responded to using a 5-point Likert Scale ranging from 1 (strongly agree) to 5 (strongly disagree).

The PSI-SF is strongly correlated ($r = .87$) with the full Parenting Stress Index (Haskett et al., 2006). Abidin (1995) reported that the Total Stress Scale for the PSI-SF correlated highly (.94) with the Total Stress Scale on the full-length PSI. Both test-retest reliability (.84) and internal consistency reliability (.91) are strong for this instrument. Roggman and colleagues (1994) found an alpha reliability of .90 for the Total Stress Score on the PSI-SF.

The validity of the PSI-SF was measured in comparison to the full-length PSI. The Total Stress scale on the full-length PSI correlated .94 with the Total Stress Scale on the PSI-SF. Also, the Parental Distress Subscale on the PSI-SF was highly correlated with the Parent Domain on the full PSI ($r = .92$). The PSI-SF's Difficult Child Subscale was found to be highly correlated with the Child Domain of the full-length PSI ($r = .87$). Lastly, the Parent-Child Dysfunctional Subscale on the PSI-SF was correlated at .73 and .50 with the Child Domain and Parent Domain Scales on the full-length PSI, respectively which were predicted because the Parent-Child Dysfunctional Subscale contains items from both the Child and Parent Domain Scales (Abidin, 1995).

For the present study the Parental Distress Subscale was utilized to measure stress experienced by parents/caregivers. The Parental Distress Subscale specifically measures the distress a caregiver is experiencing as it relates to variables that are highly correlated with parenting (Bendell et al., 1986). Given this, the Parental Distress Subscale was used solely due to the relationship it had with the conceptualization and construction of the stress variable that was under investigation in the present study. Abidin (1995) indicates that this subscale has strong test-reliability (.86) and internal (.87) reliability. As previously stated, the subscale has strong validity as it is highly correlated with the Parent Domain score on the full PSI ($r = .92$). Further, it is not related to the Child Domain on the full measure ($r = .49$). The Parent-Child Dysfunctional Interaction, Difficult Child, and Total Stress Scales were not utilized in the data analysis.

Revised Life Orientation Test (LOT-R) - The Revised Life Orientation Test was utilized to measure dispositional optimism. The instrument was developed by Scheier, Carver and Bridges (1994) and is a 10-item measure assessing an individual's level of perceived optimism. Participants respond to statements through a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measure does not provide a cutoff score for optimism versus pessimism. Rather, it is constructed to measure optimism along a continuum with higher scores suggesting a relative orientation toward optimism and lower scores signifying a more pessimistic approach. The construction of the instrument consists of three positively worded statements (item # 1, 4, 10), three negatively worded statements (item # 3, 7, 9) and four "filler" statements (item # 2, 5, 6, 8) which are not scored. Examples of positively worded statements include, "In uncertain times, I usually expect the best" and "I'm always optimistic about my future"

while examples of negatively worded statements are, “If something can go wrong for me it will” and “I hardly ever expect things to go my way”. Examples of filler item statements are “It’s easy for me to relax” and “I enjoy my friends a lot.”

The LOT-R has acceptable levels of internal consistency and test-retest reliability (Scheier et al., 1994). Internal consistency for the entire instrument as measured by Cronbach’s alpha was .78. Test-retest reliability was measured through examination of scores from samples of college undergraduates who completed the instrument at 28-month intervals. The test-retest correlation was .79.

In terms of convergent and discriminant validity, the LOT-R was found to be highly correlated overall ($r = .95$) to the original version of the instrument. The instrument is also highly correlated with the original LOT based on gender as men ($r = .95$) and women ($r = .95$) both scored similarly to how their gender scored during the administration of the original instrument. Additionally, the measure shares only relatively modest variance with scales measuring similar concepts including neuroticism ($r = -.36$), self-mastery (.48), self-esteem (.50), and trait anxiety (-.53). The correlations for men range from a high of -.52 (trait anxiety) to -.36 (neuroticism) with similar scores found for women as they had a high of .54 (self-esteem) and a low of -.36 (neuroticism). All correlations were significant at the $p < .001$ level. Differences between men and women were minimal (Scheier et al., 1994).

Multidimensional Scale of Perceived Social Support (MSPSS) - An estimate of perceived social support was obtained through the use of the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet, Dahlem, Zimet & Farley, 1988). The MSPSS is a 12-item self-report measure which analyzes an individual’s subjective assessment of

social support adequacy. Through the use of a 7-point Likert Scale the instrument measures ratings of social support received from three specific sources: family, friends, and significant others. Each subscale represents a unique form of social support. Users rate their response to each statement using this 7-point where “1” means “very strongly disagree” and “7” is “very strongly agree”. The sum of these subscales provides an overall social support score. The total score was used to measure social support in the present study.

The MSPSS was found to have adequate psychometric properties. It displays good internal reliability (.88 on Cronbach’s coefficient alpha, .85 test/retest reliability). The measurement has strong factorial validity. The Kaiser normalization test was utilized to determine factorial validity and three factors for the principal components factor analysis were found. Items had high loadings on factors for which they were intended (Significant Other = .74, .91, .91, .92; Family = .83, .84, .84, .81; and Friends = -.82, -.79, -.86, -.86) with minimal cross-loadings.

The instrument has adequate construct validity as found through comparisons to measurements of anxiety and depression. The construct validity was determined through comparison of the MSPSS with the Hopkins Symptoms Checklist (HSCL), a 58-item checklist used to measure the extent to which symptoms related to different disorders are present. Perceived social support from family was significantly negatively related to both depression, $r = -.24$, $p < .01$, and anxiety, $r = -.18$, $p < .01$. Social support from friends was significantly related to depression, $r = -.24$, but not to anxiety. Support from significant others was significantly related to depression, $r = -.13$, $p < .05$. The total scale was found to significantly negatively related to depression ($r = -.25$, $p < .01$).

SF-10 Health Survey for Children (SF-10) - The SF-10 (Saris-Baglana et al., 2006) is a 10-item instrument used to measure the physical and psychosocial functioning of children ages five and over. The SF-10 is a caregiver completed assessment and gathers information across several areas of physical (5 items total) and psychosocial (5 items total) health utilizing varying Likert scales. Responses are scored in a manner where higher scores are attributable to higher functioning in that area and better health. This instrument was utilized as a measure of severity of disability in the present study due to its ability to estimate a child's level of physical and psychosocial functioning. Both the physical and psychosocial categories were used in the data analysis.

The category of physical health is subdivided into physical functioning (2 items), role functioning (1 item), bodily pain (1 item), and general health (1 item). Both the physical functioning and role functioning subcategories are scored utilizing a four-point Likert scale, ranging from "yes, limited a lot" to "no, not limited". Bodily pain is scored using a 6-point Likert scale ranging from "none" to "very severe". Lastly, general health is scored using a five-point scale which ranges from "excellent" to "poor". All of the physical health subscales were utilized during data analysis.

The psychosocial health category is constructed using subcategories: Role disability due to emotional behavioral problems (1 item), self-esteem (2 items), behavior (1 item), and mental health (1 item). Role disability measures the impact that emotional and behavioral problems have upon role functioning using a four-point scale ("yes, limited a lot" to "no, not limited"). The self-esteem items asks parents' perceptions pertaining to their child's satisfaction with friendships and overall satisfaction with their life along a five-point scale ranging from "very satisfied" to "very dissatisfied". Behavior

is scored utilizing a five-point scale from “excellent” to “poor” and it gathers a general conceptualization of the child’s behavior in comparison to other children of the same age. The Mental Health Subscale measures the extent to which the child has acted upset or bothered in any way over the past four weeks utilizing a five-point scale ranging from “none” to “all the time”.

The SF-10 has strong reliability. Internal consistency reliability estimates for the subscales were roughly equivalent across the various modes of administration and found to be adequate (physical health = .76, psychosocial health = .83) (Saris-Baglana et al., 2006).

This instrument also has sound validity. The subcategories have been found to be valid in comparison to groups of children with known health or psychological conditions. Children with a physical condition (asthma) were found to score lower in comparison to the United States general population sample on the physical health scale while children with a mental health disorder scored lower on the psychosocial health scale in comparison to the same sample (PHS: M = 52.4; PSS: M = 52.8). The average physical health scores were also found to be lower for children with physical conditions ($t = -13.98, p < .0001$), while the average psychosocial health scale score was found to be lower for children with both mental health disorders ($t = -9.09, p < .0001$) and behavioral problems ($t = -10.59, p < .0001$) than for children with no physical and/or mental health conditions reported.

Ways of Coping Scale (WCS) - The WCS is a 66-item measure (50 clinical items; 16 fill-in items) developed by Folkman and Lazarus (1986) which is aimed at assessing an individual’s coping process. Individuals complete the measure through

providing responses to potential stressful situations utilizing a 4-point Likert scale whereby “0” represents “not used at all” and “3” signifies “used a great deal.” The fill-in items are comprised of questions that did not load into any particular factor during standardization.

The WCS yields a Total Problem-Focused Coping score as well as a Total Emotion-Focused Coping score. Each score denotes a percentage that, when both are summed together, equal 100. Each total score consists of four subscale scores. Problem-focused coping subscales that are part of the instrument include Seeking Social Support (efforts to seek informational, tangible, and emotional support), Accepting Responsibility (ability to acknowledge one’s personal role in a problem with an intention of trying to put things right), Planful Problem-Solving (deliberate problem-focused efforts to alter a situation coupled with an analytic approach to solving the problem), and Positive Reappraisal (efforts to create positive meaning by focusing on personal growth). Emotion-focused coping subscales include Confrontive Coping (aggressive attempts to alter the situation that suggest some form of hostility and risk-taking), Self-Controlling (efforts to regulate one’s feelings and actions), Distancing (cognitive efforts to detach oneself and to minimize the impact of a given situation), and Escape-Avoidance (wishful thinking and behavioral attempts to escape or avoid the problem).

The Seeking Social Support Subscale is comprised of six items including statements such as, “talked to someone to find out more about the situation”, and “accepted sympathy and understanding from someone.” The Accepting Responsibility Subscale includes four items that involves statements like, “criticized or lectured myself”, and “I apologized or did something to make up.” Six items make up the Planful Problem

Solving Subscale. This subscale includes statements like, “I made a plan of action and followed it”, and “just concentrated on what I had to do next- the next step.” Lastly under the Problem-Focused Coping category is the Positive Reappraisal Subscale. This consists of seven items that includes statements like, “I was inspired to do something creative”, and “changed or grew as a person in a good way”.

The Emotion-Focused Coping category includes the Confrontive Coping Subscale that is made up of six items. Examples of statements in this sub-category include, “I did something which I didn’t think would work, but at least I was doing something”, and “tried to get the person responsible to change his or her mind.” Also in this category is the Self-Controlling Subscale. This subscale consists of seven items and includes items like, “tried not to burn my bridges, but leave things open somewhat”, and “I tried to keep my feelings to myself”. The Distancing Subscale has six items with statements such as, “went along with fate; sometimes I just have bad luck”, and “went on as if nothing had happened”. Lastly, the Emotion-Focused Coping category has the Escape-Avoidance Subscale. This consists of eight items made up of statements like, “hoped a miracle would happen”, and “slept more than usual”.

Psychometric properties of this instrument are sound as evidenced by strong internal consistency as measured by Cronbach’s alpha ($P = .80$, $E = .81$). Also, the WCS has been found to have good internal consistency (ranging from .68 to .81) (Folkman & Lazarus, 1986). The initial norming data obtained by Folkman and Lazarus did not include a review of validity. Validity for the WCS has been based primarily on factor analyses on exploratory models developed by different researchers (Edwards & O’Neill, 1998). Parker and colleagues (1993) performed orthogonal and oblique confirmatory

analyses on the models developed by others to measure construct validity and found that the models had statistically significant chi-squares and adequate goodness-of-fit indexes and adjusted goodness-of-fit indexes that ranged from .73 to .78.

As stated, the total score on the Ways of Coping Scale has two primary scores: a Problem-Focused Coping score and an Emotion-Focused Coping score. Each score is comprised of four subscale scores and denotes a percentage that if added together total 100%. Given the structure of the scores, if the total score on the Problem-Focused Coping Scale is obtained then one should theoretically know the total score on the Emotion-Focused coping Scale if the calculations are performed correctly. Given the nature of scoring on this instrument and to allow for proper statistical analysis, the Problem-Focused Coping score was treated as a continuous variable and utilized in data analysis. The Emotion-Focused Coping score was thus not used during analysis.

The directions for the WCS were modified slightly to be more applicable and identifiable for parents and primary caregivers of children with developmental disabilities.

Procedure

Parents or primary caregivers of children with developmental disabilities aged birth to 26-years-old who receive Community Mental Health Services in Washtenaw County were included as participants in the study. Participants were drawn from a list provided by the Washtenaw Community Health Organization in Ypsilanti, Michigan. The total sample was drawn from a grouping provided by the recruiting site that included the parents and primary caregivers of 368 individuals falling within the age range being studied.

Surveys were mailed to all caregivers who qualified for the study. The sample was divided into three groups of 150, 150, and 68. Packets were mailed to each group approximately three weeks apart from one another. Each prospective participant received an information sheet explaining the study and the study instruments in the mail. Parents and primary caregivers were sent a reminder card approximately one week after the initial packet was mailed in an effort to enhance participation in the study.

Each study packet included a letter introducing the principal investigator and the research study, an information sheet, a demographic survey, the Parenting Stress Index-Short Form, The Ways of Coping Scale, The Multidimensional Scale of Perceived Social Support, the SF-10, and the Revised Life Orientation Test. Counterbalancing of the instruments in the study packets was utilized to ensure that any affective responses on a particular instrument did not carry over into the administration of other instruments and influence scores. Anonymity of all study participants was assured as names of parents/primary caregivers and children were not obtained throughout the data collection process. Also aiding in privacy, the vast majority of participants were centrally located in two large, urban areas within the county which greatly reduced the possibility of identification via zip code on return mail to the principal investigator. Each packet included a stamped envelope addressed to the principal investigator's residence where completed materials were to be sent. Participants were requested to complete instruments included in the study only once. The study received full Wayne State University Human Investigation Committee approval before implementation. All data was analyzed utilizing the SAS/STAT statistical software.

CHAPTER IV

Results

This study examined the mediating impact of coping style on stress experienced by parents or primary caregivers of children with developmental disabilities. Specifically, the study sought to determine whether or not coping style accounted for the variance in the relationship between stress perception and variables known to influence stress for these parents and primary caregivers. This chapter will begin with a review of the demographic characteristics of the sample and conclude with a comprehensive analysis of the findings.

Demographics. The administration of the Washtenaw Community Health Organization provided a list of 368 prospective participants for the study. Survey packets were mailed to all. Of the 368 mailed, a total of 139, or 37.8%, were returned. Twelve survey packets were discarded due to non-completion of surveys and/or the return of incomplete surveys. A survey was considered incomplete if it was left blank or if there were greater than 2% missing answers. Thus, 127 participants (34.5% of survey packets mailed) were included as part of the study.

Participants included 31 males and 96 females ranging in age from 29 to 77. The average age of participants was 52.9 years of age. Of the females in the study 76 reported that they were the biological mother of the child with a developmental disability. Another 18 stated that they were the adoptive mother, while 2 females reported being a grandparent. Of the 31 males who participated, 28 reported being the biological father, 2 stated they were the adoptive father, and 1 an uncle. Marital status for the sample

included 91 married individuals, 15 single, 16 divorced, 3 separated, and 2 people who were cohabitating. The sample was overwhelmingly Caucasian (N=102).

As stated, each participant in the study was a parent of, or primary caregiver for, a child with a developmental disability. The age range of the children in the study was 2 to 26 with an average age of 19.1. The children experienced a broad range of disabilities as 14 were identified as cognitively disabled, 7 were reported to have some form of physical disability, while another 45 reported having a combination of cognitive and physical disabilities. Another 38 children were diagnosed with autism and 15 were diagnosed with a genetic/chromosomal disability. Eight children were diagnosed with Fetal Alcohol Syndrome. A frequency distribution outlining the demographic characteristics for the sample is listed in Table 1.

Table 1

Demographic Characteristics and Associated Frequency Distribution of Sample
(N = 127)

Demographic Variable	Frequency	Percent
Caregiver Gender:		
Male	31	24.4
Female	96	75.6
Caregiver Age:		
20-30	1	0.8
31-40	4	3.1
41-50	43	33.9
51-60	59	46.4
61-70	19	15.0
71-80	1	0.8
Caregiver Marital Status:		
Married	91	71.6
Divorced	16	12.6
Single	15	11.8
Separated	3	2.4
Cohabiting	2	1.6

Demographic Variable	Frequency	Percent
Caregiver Relation to Individual with a Developmental Disability:		
Biological Mother	76	59.8
Biological Father	28	22.0
Adoptive Mother	18	14.2
Adoptive Father	2	1.6
Grandparent	2	1.6
Other	1	0.8
Caregiver Ethnicity:		
Caucasian	102	80.3
African American	16	12.6
Asian American	5	3.9
Hispanic	3	2.4
Native American	1	0.8
Age of Individual with a Developmental Disability:		
0-5	4	3.1
6-10	9	7.1
11-15	26	20.5
16-20	23	18.1
21-26	65	51.2
Disability Type:		
Cognitive	14	11.0
Physical	7	5.5
Cognitive and Physical	45	35.4
Genetic/Chromosomal	15	11.8
Fetal Alcohol Syndrome	8	6.3
Autism	38	29.9

Note. Due to rounding errors the percentages in some categories does not equal 100

Means, standard deviations, and range of scores. The means, standard deviations, and range of scores for participant scoring on each instrument administered are listed in Table 2. Parents and primary caregivers averaged 30.50 on the Parenting Stress Index-Short Form. This represents a mild to moderate level of stress for those who participated in the study as the score does not quite meet the half way point (36) between the possible

minimum score and the possible maximum score on the test. Participants obtained an average score of .57 on the Ways of Coping Questionnaire. This score represents the percentage of problem-focused coping strategies used by parents/primary caregivers in the study. Thus, caregivers in the study showed a slight orientation toward the use of a problem-focused coping style (57% use of problem-focused coping strategies, 43% use of emotion-focused coping strategies).

Regarding life orientation, or optimism, participants in the study obtained a mean score of 15.94. The range of possible scores is from 0 to 24 with the high score representing the maximum level of optimism possible on the instrument. The mean score indicates that parents and primary caregivers who participated in the study displayed a moderate tendency toward optimism. For severity of disability, caregivers rated their children on average at 36.74 for severity of physical disability. With the possible range being -10.90 to 57.22 the mean score obtained indicates that children in the study did not have severe physical limitations and exhibited a moderate level of physical independence. The average score for psychological severity of disability was 40.88 with a possible minimum score being 8.81 and possible maximum score being 62.29. The mean score obtained for psychological severity of disability suggests that the children were of higher psychological functioning and did not exhibit severe limitations in this area. Lastly, caregivers averaged 60.17 on the instrument measuring social support. This score suggests that parents and primary caregivers in the study experienced a moderate level of social support in their lives at the time they participated in the study. The possible range of scores for the social support measurement was from a low score of 12 to a high score of 84.

Table 2

Means, standard deviations and ranges of scores obtained on measurements administered

Variable	Mean	Std Dev	Minimum	Maximum	Possible Minimum	Possible Maximum
Parental Stress	30.50	9.12	12.00	55.00	12.00	60.00
Coping	0.57	0.08	0.26	0.75	0.00	1.00
Life Orientation	15.94	4.75	0.00	24.00	0.00	24.00
Physical Severity	36.74	19.57	-7.49	57.22	-10.90	57.22
Psychological Severity	40.88	11.37	11.43	62.29	8.81	62.29
Social Support	60.17	15.91	12.00	84.00	12.00	84.00

^a Scores for Physical Severity and Psychological Severity derived from a mathematical formula provided by the instrument's publisher.

Independent and dependent variable correlations. A Pearson Coefficient Correlation Matrix was constructed to show the relationships among the variables included in the study. This can be found in Table 3. All stress influencing variables which included life orientation ($r = -.35, p < .0001$), physical severity of disability ($r = -.20, p < .05$), psychological severity of disability ($r = -.45, p < .0001$), and social support ($r = -.39, p < .0001$) were found to be significantly correlated with parental stress. Coping style was also found to be correlated with life orientation ($r = .43, p < .0001$) and social support ($r = .46, p < .0001$). Coping style was also significantly correlated with psychological severity of disability ($r = .21, p < .0001$) but not physical severity of disability. Interestingly, social support was correlated with life orientation ($r = .42, p < .0001$) and psychological severity of disability ($r = .22, p < .0001$)

Table 3

Correlation matrix of variables in study

	Parental Stress	Coping	Life Orientation	Physical Severity	Psychological Severity	Social Support
Parental Stress		-0.41***	-0.35***	-0.20*	-0.45***	-0.39***
Coping			0.43***	-0.15	0.21*	0.46***
Life Orientation				0.01	0.15	0.42***
Physical Severity					-0.01	0.03
Psychological Severity						0.22*
Social Support						

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

Preliminary analysis. A series of analyses of variance (ANOVA) were completed to analyze the role that demographic variables may play with regard to the stress experienced by parents and primary caregivers of children with developmental disabilities. Three preliminary analyses were completed examining these relationships and are as follows:

Caregiver gender, age, relationship to child, and stress. The first analysis was completed to investigate the differences in caregiver stress using a 2 x 2 x 2 ANOVA where caregiver gender, age, and relationship to the child with a developmental disability served as independent variables. In this analysis caregiver age (old vs. young), relationship to child (biological mother vs. not biological mother), and parent gender served as independent variables with stress being the dependent variable. Age was placed into “old” and “young” categories based on a median split. Two equal groups of 63 were

created as part of the median split. The “young” parent group averaged 46.52 years and the “old” group averaged 59.19 years of age.

No significant differences between caregiver gender, caregiver age, and/or caregiver relationship to child were found. It was hypothesized that caregiver gender would significantly influence stress. Results for caregiver gender $F(1, 123) = 1.64, p = .20$ did not support this hypothesis. Likewise, the data for caregiver age, $F(1, 123) = 1.58, p = .21$, and caregiver relationship to child, $F(1, 123) = .42, p = .52$ were not found to be significantly tied to parent/caregiver stress and failed to support the hypothesized differences predicted between these variables. The results for this analysis are listed in Table 4.

Table 4

Analysis of variance for caregiver gender, caregiver age, and relationship to child on stress

Source	DF	Sum of Squares	Mean Square	F
caregiver gender	1	135.64	135.64	1.64
caregiver age	1	130.75	130.75	1.58
relationship	1	34.48	34.48	0.42
Error	123	10184.88	82.80	
corrected total	126	10485.75		

Note. relationship = caregiver relationship to child with developmental disability.

Child age, disability type, caregiver coping style, and stress. A second 2 x 2 x 2 ANOVA was conducted to analyze the differences between child age (young vs. old), child disability type (combined cognitive and physical disability vs. not combined cognitive and physical disability), caregiver coping style (problem-focused vs. emotion-

focused) and stress. As with parent age in the previous analysis, child age was placed into “old” and “young” categories based on median splits. Again, two equal groups of 63 were created. The average age of the “young” group was 14.19. The average age for the “old” group of children was 24.02.

A main effect was found for child age on stress, $F(1,123) = 9.34, p < .01$. This supported the hypothesis that there would be a significant difference between age groups in their impact on stress experienced by parents or primary caregivers. Also, a main effect was found for caregiver coping style, $F(1, 123) = 9.89, p < .01$. This finding lent support to the hypothesized differences predicted between coping style (problem-focused vs. emotion-focused) and its impact on parent stress. The results of this analysis can be found in Table 5.

Table 5

Analysis of variance for child age, disability type, and caregiver coping style on stress

Source	DF	Sum of Squares	Mean Square	F
child age	1	688.16	688.16	9.34**
disability	1	7.41	7.41	0.10
caregiver coping style	1	728.46	728.46	9.89**
Error	123	9061.72	73.67	
corrected total	126	10485.75		

Note. disability = child disability type

** $p < .01$.

Social support, severity of disability, life orientation, and stress. A final 2 x 2 x 2 ANOVA was completed to determine the differences in levels of social support (high vs. low), severity of disability (high vs. low), and life orientation (high vs. low) and their

impact on stress for parents/primary caregivers. The average score for the “low” group on social support was 47.57 with the “high” group averaging 72.73. For severity of disability, the “high” severity group had an average score of 21.03 while the “low” severity group averaged 52.32. Lastly, the “high” life orientation group had a mean score of 19.68 while the “low” life orientation group averaged 12.17.

A main effect was found for social support, $F(1, 123) = 21.62, p < .001$. Main effects were also found for severity of disability, $F(1, 123) = 6.68, p < .05$, and life orientation, $F(1, 123) = 19.09, p < .001$. The findings supported the hypotheses that each stress influencing variable would show significant differences in relation to stress experienced by parents and primary caregivers. The results of this analysis are found in Table 6.

Table 6

Analysis of variance for social support, severity of disability, and life orientation on stress

Source	DF	Sum of Squares	Mean Square	F
social support	1	1330.66	1330.66	21.62***
severity of disability	1	411.16	411.16	6.68*
life orientation	1	1174.79	1174.79	19.09***
Error	123	7569.14	61.54	
corrected total	126	10485.75		

Note. disability = child disability type

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

Primary analysis. To analyze the relationship between coping style, stress influencing variables, and caregiver stress perception a theoretical model of mediation was

developed. This model utilized a series of four regression analyses to determine if coping style was a significant mediator between stress influencing variables and the experience of stress for parent/caregivers. The model was developed according to the recommendations for establishing mediation by Barron and Kenny (1986) and is displayed schematically in Figure 1 (see page 50). Barron and Kenny recommend 4 distinct steps for establishing mediation. They are as follows: 1) Show that the independent variables are correlated with the dependent variable. For the present study, this would entail establishing a significant relationship between the independent variables of social support, severity of disability, and life orientation and the dependent variable of stress experienced by parents/primary caregivers, 2) show that the independent variable is correlated with the mediator. In this study this would involve formulating a regression analysis where the independent variables (social support, severity of disability, and life orientation) are the predictor variables and the mediator (coping style) is the criterion variable, 3) show that the mediator is significantly related to the dependent variable. For the present study this would involve showing a significant correlation between coping style (independent variable) and stress experienced by parents/primary caregivers (dependent variable), and lastly 4) to establish mediation, an analysis must be completed where the effects of the independent variables (social support, severity of disability, and life orientation) on the dependent variable (stress) are measured while controlling for the mediator (coping style). Barron and Kenny state that if previously established significant relationships between the independent and dependent variables are no longer significant when the mediator is controlled for, then mediation has been established. If the relationship between the independent variables and the dependent variable is 0, or no

longer existing, then complete mediation has occurred. If a relationship still exists but is no longer significant, then partial mediation is indicated. For each of the four primary analyses demographic variables (caregiver age, caregiver gender, caregiver marital status, caregiver relationship to child, child age, child disability type, ethnicity) were controlled for and held as constants to determine their influence on the relationship between the independent and dependent variables. The steps in the mediation process and associated findings from the study are as follows:

Step 1: Stress influencing variables and stress. The first regression equation involved determining the level of direct relationship between the stress influencing variables in the study (life orientation, severity of disability, social support) and stress experienced by parents/caregivers. It was expected that the stress influencing variables would be significant predictors of parental stress. Data analysis revealed that both life orientation ($t = -3.07$) and social support ($t = -2.70$) were significant predictors of stress for parents/caregivers. Though psychological severity of disability was found to be a significant predictor of stress ($t = -3.70$), physical severity of disability was not found to be significantly correlated with stress for parents/caregivers. Of the controlling variables only parent gender ($t = -3.83$) was found to significantly influence stress. No other controlling variable approached significance. Table 7 displays these results.

Table 7

Predictive relationship between social support, severity of disability, life orientation and stress perception

Predictor	B	SE	T	p value
Intercept	56.05	8.89	6.30	<0.0001***
orientation	-0.52	0.17	-3.07	0.0027**
severity1	-0.07	0.04	-1.60	0.1110
severity2	-0.27	0.07	-3.70	0.0003**
socsupp	-0.13	0.05	-2.70	0.0080**
parent gender	-3.83	1.71	-2.23	0.0274*
Total R ²	0.44			
Adjusted R ²	0.34			
No. Observations	127			

Note. orientation = life orientation. severity1 = physical severity of disability, severity2 = psychological severity of disability. socsupp = social support.

^a Controlling variables included parent/caregiver gender, parent/caregiver age, child age, parent/caregiver marital status, type of disability, caregiver relationship to child, and ethnicity

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

Step 2: Stress influencing variables and coping style. The second regression analysis investigated the predictive influence that social support, severity of disability, and life orientation had on determining coping orientation for caregivers. Social support, severity of disability, and life orientation served as predictor variables in this equation with coping orientation being the criterion variable. The results of this analysis are displayed in Table 8.

Table 8

Predictive relationship between social support, severity of disability, life orientation and coping style orientation

Predictor	B	SE	t	p value
Intercept	0.414911	0.083536	4.97	<0.0001***
orientation	0.004632	0.001585	2.92	0.0042**
severity1	-0.00087	0.000412	-2.12	0.0361*
severity2	0.000994	0.000693	1.43	0.1545
socsupp	0.001802	0.000466	3.87	0.0002**
Total R ²	0.34			
Adjusted R ²	0.24			
No. Observations	127			

Note. orientation = life orientation. severity1 = physical severity of disability, severity2 = psychological severity of disability. socsupp = social support.

^a Controlling variables included parent/caregiver gender, parent/caregiver age, child age, parent/caregiver marital status, type of disability, caregiver relationship to child, and ethnicity

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

It was predicted that all three stress influencing variables would be significant predictors of coping orientation for parents/ primary caregivers. Moreover, parents/caregivers who reported to have a stable support system, who were optimistic in their life orientation, and who had children with relatively low level of severity of disability were hypothesized to be oriented toward using problem-focused coping strategies. Life orientation (t = 2.92) and social support (t = 3.87) were both significant predictors of coping style for parents/caregivers of individuals with developmental disabilities. Though physical severity of disability was significantly related to coping

orientation ($t = -2.12$), severity of psychological disability failed to be a significant predictor of coping for parents/caregivers. None of the controlling variables were found to significantly influence stress perception in this analysis.

Step 3: Coping style and stress. The third regression analysis involved coping style orientation and stress experienced by parents/caregivers. Specifically, this analysis examined the predictive influence that an individual's coping style tendency had on the amount of stress experienced by parents or primary caregivers of individuals with developmental disabilities. It was hypothesized that coping style would be significantly related to stress. Specifically, it was predicted that parents/caregivers who were oriented toward a problem-focused coping style would experience less stress than those utilizing an emotion-focused coping style. Coping was measured as a continuous variable using the Problem-Focused Coping Scale on the Ways of Coping Survey. This was possible because the Problem-Focused Coping Scale score is measured as a percentage that, coupled with the Emotion-Focused Coping Scale, equal 100%. Thus, the two scale scores measure the same thing. Coping style orientation ($t = -5.32$) was determined to be a highly significant predictor of stress experienced by parents/caregivers. Child age ($t = -0.46$) was a controlling variable that significantly predicted stress as part of this analysis. No other controlling variables approached significance. Results for this analysis are displayed in Table 9.

Table 9

Predictive relationship between coping style orientation and stress perception

Predictor	B	SE	t	p value
Intercept	57.02	10.35	5.51	<0.0001***
coping1	-49.24	9.25	-5.32	<0.0001***
child age	-0.46	0.16	-2.89	0.0046**
Total R ²	0.31			
Adjusted R ²	0.22			
No. Observations	127			

Note. coping1 = coping style.

^a Controlling variables included parent/caregiver gender, parent/caregiver age, child age, parent/caregiver marital status, type of disability, caregiver relationship to child, and ethnicity

** p < .01. *** p < .001.

Step 4: Coping style as a mediator. The final regression analysis served to determine whether or not coping style was a significant mediator in the relationship between the stress influencing variables and the experience of stress by parents/caregivers of children with developmental disabilities. The initial regression analyses showed that both life orientation and social support were significant predictors of stress and coping style orientation for parents/caregivers. As both aspects of severity of disability (physical and psychological) were not correlated with stress and coping style orientation, it was not factored into the final analysis. It was predicted for this final portion of the model that, when controlling for coping style, the significant relationships between the stress influencing variables (life orientation, social support) and stress would no longer hold true. This would provide statistical support that mediation has occurred.

The results showed that, after controlling for coping style, life orientation remained a significant predictor ($t = -2.25$) of stress perception for parents/caregivers. However, social support ($t = -1.58$) was no longer significantly correlated with parental stress once coping style was controlled for. The effect of social support on stress perception in this final analysis did not equal zero which indicates that coping style orientation does not completely mediate the relationship. However, given that the relationship between social support and stress no longer reaches significance suggests that coping style significantly accounts for some of the variance in the relationship between the variables. Thus, coping style serves as a partial mediator. This analysis offers insight into the role that coping style plays as a partial mediator in the relationship between social support and stress perception for parents/caregivers of children with developmental disabilities. Specifically, the data suggests that parents may experience stress regardless of the amount of social support they have available in their lives if they have an emotion-focused orientation toward coping with environmental demands. Parent gender ($t = -3.51$) was the only controlling variable found to significantly influence stress as part of this analysis. No other controlling variable reached significance. The data from the final analysis is found in Table 10.

Table 10

Coping style orientation as mediator between social support, severity of disability, life orientation and stress perception

Predictor	B	SE	t	p value
Intercept	68.33	9.51	7.18	<0.0001***
coping1	-29.61	9.88	-2.99	0.0034**
orientation	-0.38	0.17	-2.25	0.0263*
severity1	-0.09	0.04	-2.23	0.0278*
severity2	-0.24	0.07	-3.38	0.0010**
socsupp	-0.08	0.05	-1.58	0.1168
parent gender	-3.51	1.66	-2.12	0.0364*
Total R ²	0.48			
Adjusted R ²	0.39			
No. Observations	127			

Note. coping1 = coping style. orientation = life orientation. severity1 = physical severity of disability, severity2 = psychological severity of disability. socsupp = social support.

^a Controlling variables included parent/caregiver gender, parent/caregiver age, child age, parent/caregiver marital status, type of disability, caregiver relationship to child, and ethnicity

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

CHAPTER V

Discussion

This chapter offers a summary of the present research and will review the characteristics of the sample, the findings from the preliminary analyses, and the major findings from the primary analyses. An assessment of the significance of the findings will follow. Following that, implications of the study are included and recommendations for practice and future research are provided. Benefits and limitations of the study are discussed and, lastly, this chapter will close with concluding remarks.

History and background. A critical review of prior research studies indicates that parents and primary caregivers of children with developmental disabilities exhibit more stress than parents/primary caregivers of normally developing children (Gupta, 2007; Cushner-Weinstein et al., 2008; Hussain & Juyal, 2007). Equally, there are large amounts of research that has found that there are numerous factors that contribute to the stress experienced by these caregivers. However, despite the data available, a gap still exists in the literature regarding the link between the variables that contribute to stress and the experience of stress itself by parents and primary caregivers of children with developmental disabilities. The majority of research completed analyzed the direct relationship between the variables hypothesized to influence stress and the actual experience of stress for caregivers of children with developmental disabilities. The available research largely neglects the influence of indirect relationships between stress influencing variables and the experience of stress for caregivers. Moreover, coping style as a factor in an indirect relationship has been fully ignored.

Coping is a variable that is directly related to the experience of stress by individuals (Lazarus, 1986). When confronted by environmental demands, individuals must determine whether or not a situation is taxing and exceeding of personal resources. If, through this determination, it is concluded that the demands of the situation are too great, then coping ensues. Coping occurs through the use of specific strategies. Lazarus (Lazarus & Folkman, 1984) hypothesized that people cope through the use of two primary styles: problem-focused coping and emotion-focused coping. Those who utilize a problem-focused coping style attempt to reshape their environment so that the object of stress currently does not produce stress in the future. Lazarus suggests that individuals utilizing an emotion-focused coping style make changes in the present to ensure that the physiological reaction to stress is subdued and no longer of concern. Those utilizing an emotion-focused coping pattern are not concerned about the future and do not plan in a manner that prevents the stress from occurring again in the future. Lazarus believed that, although both manners of coping can be efficacious in the moment, long term success in maintaining balance and minimizing the experience of stress was more likely if a problem-focused coping style is used (Lazarus 1999, 2006).

When considering the link between coping and stress perception, a logical question can be asked regarding this relationship. Could coping style be the factor through which stress influencing variables filter and ultimately dictate how an individual perceives stress? The present study sought to answer this question. The purpose of the present study was to determine if coping style mediated the relationship between factors that influence stress for parents/primary caregivers of children with developmental

disabilities and the amount of stress experienced by parents/ primary caregivers of children with developmental disabilities.

A theoretical model was developed to address this concern. Three factors that prior research found to contribute to stress for parents/primary caregivers of children of developmental disabilities (level of social support, severity of child's disability, life orientation) were utilized as independent variables in the present study. These factors were integrated into the model to ensure that a variable both internal (life orientation) and external (severity of child's disability) to the caregiver as well as an environmental factor (social support) were included. Coping style (problem-focused vs. emotion-focused) based upon Lazarus' Transactional Model of Stress and Coping acted as the mediating variable. Parental stress served as the dependent variable. The model was tested through a series of regression analyses based upon Baron and Kenny's (1986) recommendations for establishing mediation. Four research questions were addressed through the primary analysis and were as follows: 1) Are the independent variables (social support, severity of disability, life orientation) correlated with the dependent variable (stress)?, 2) Are the independent variables (social support, severity of disability, life orientation) correlated with the mediator (coping style)?, 3) Is the mediator (coping style) significantly related to the dependent variable (stress)?, and lastly 4) Are the independent variables (social support, severity of disability, and life orientation) significantly related to the dependent variable (stress) when controlling for the mediator (coping style)? As stated, the ultimate goal of the present study was to determine if coping style significantly mediates the relationship between stress influencing variables (social support, severity of disability,

and life orientation) and the perception of stress for parents and primary caregivers of children with developmental disabilities.

Sample characteristics. Parents and primary caregivers of children with developmental disabilities took part in the study. Participants were obtained through a large Community Mental Health agency in Washtenaw County, Michigan where their children received services. Overall, 127 parents and primary caregivers participated. Of the 127, 31 were male and 96 were female. Though on the surface this finding may be surprising, a possible explanation for this could be the increasing number of single parent households that exist where a mother is the primary caregiver for the child in the home. The average age of participants was 52.9 years of age.

Of the 31 males who participated, 28 reported being the biological father, 2 stated they were the adoptive father, and 1 an uncle. Seventy-six females were the biological mother of the child with a developmental disability with another 18 being the adoptive mother. Two females reported being the grandparent. Ninety-one participants reported being married, 15 stated they were single, 16 were divorced, 3 separated, and 2 participants reported that they were cohabitating. The sample included 102 Caucasians, 15 African Americans, 5 Asian Americans, 3 Hispanics, and 1 Native American. The sample was overwhelmingly Caucasian however this was representative of the population of individuals attending services at the Washtenaw Community Health Organization.

Children in the study ranged in age from 2 to 26 with an average age of 19.1. The high average age of children was expected as there were not a large number of children aged 10 and below with developmental disabilities receiving services through the Washtenaw Community Health Organization at the time the study was completed. This

could be due to the type of services offered by the agency. The majority of services are geared toward achieving independence (e.g. community living supports, supported employment) which becomes more prominent as children progress toward adulthood and not as useful for families when children are very young. A diverse range of disabilities were exhibited by these children. The breakdown of disability type was as follows: 14 were identified as cognitively disabled, 7 were reported to have some form of physical disability, 45 were a combination of cognitive and physical disabilities, 38 children were diagnosed with autism, 15 were diagnosed with a genetic/chromosomal disability and 8 were diagnosed with Fetal Alcohol Syndrome.

Review of preliminary analyses. A series of ANOVAs were completed to analyze differences among several demographic variables in relationship to the stress experienced by caregivers. Also, an ANOVA was completed to obtain a baseline estimate of how differences in the independent variables in the study impacted stress. For the first of these analyses, no significant differences between caregiver gender, caregiver age, and/or caregiver relationship to child were found. This suggests that a participant's gender, whether he/she was young or old, or whether the participant was the child's biological parent or not was insignificant in relation to the stress they experienced. The finding regarding parental gender was interesting considering that the sample included a large number of females. Considering this, it would be expected that there would be significant differences among males and females in relation to stress.

The second set of analyses focused on characteristics of the child and caregiver coping style. It was found that differences in child age and caregiver coping style significantly impacted parental stress. The amount of stress experienced by caregivers

based on differences between young children and old children was expected as care giving needs change for children with disabilities over time, and do so in a manner where the needs at a younger age are significantly different from the needs required by an older child. The differences found in coping style were expected as previous research (Glidden & Natcher, 2009; Orsmond et al., 2009) has routinely shown that use of problem-focused coping strategies is significantly related to lower stress levels for caregivers.

The last of the preliminary analyses investigated differences in levels of social support, severity of disability, and life orientation and their impact on stress. Significant differences were found for all the variables. Levels of social support, severity of disability, and life orientation were all significantly related to stress for caregivers. These findings were expected and predicted as previous research has shown that social support (Pottie & Ingram, 2008; Spratt, Saylor, & Macias, 2007), severity of disability (Belmont et al., 2009; Mitchell & Hauser-Cram, 2010), and life orientation (Baker, Blacher, & Olsson, 2005; Karazsia & Wildman, 2009) are all significantly related to stress for caregivers of children with developmental disabilities.

Review of primary analyses. As previously stated, the present study involved the construction of a theoretical model to determine if coping style effectively mediated the relationship between variables known to influence stress for parents/primary caregivers of children with developmental disabilities and the level of stress experienced by these caregivers. This section will expound upon the findings that analyzed the theoretical model of mediation that was developed.

Step 1: Predictive relationship between social support, severity of disability, life orientation and stress. The initial regression analysis was conducted to establish a

relationship between the independent variables in the study (social support, severity of disability, life orientation) and the dependent variable (stress). This calculation was necessary as further statistical analyses would be invalid if the stress influencing variables were not significantly related to the stress experienced by parents/primary caregivers of children with developmental disabilities.

Data analysis conducted as part of this first step revealed that both life orientation and social support were significant predictors of stress for parents/caregivers. This finding suggests that having an optimistic personal disposition is very important for parents and primary caregivers to avoid the stress associated with providing care to their child with a developmental disability. Perhaps having a positive outlook on life allows caregivers to see the benefit and joy of having a child and avoid perseveration on the potential negative aspects of parenting a child with a developmental disability. Given this, it seems logical that having an optimistic disposition would contribute to a parent/primary caregiver avoiding the stress associated with parenting. This finding was similar to results from previous studies (e.g., Aspinwall & Grunhart, 2000; Baker, Blacher, & Olsson, 2005; Karazsia & Wildman, 2009) that also found optimism to be significantly related to parental distress.

Social support was also significantly related to the stress experienced by caregivers. This finding reveals the importance of both formal and informal support systems in the lives of parents and primary caregivers of children with developmental disabilities. This finding was consistent with previous studies (Pottie & Ingram, 2008; Beckman, 1991) that found social support to be significantly related to stress experienced by parents and primary caregivers of children with developmental disabilities. The

instrument used to measure social support (Multidimensional Scale of Perceived Social Support) was comprised of three subscales that included the following types of social support: 1) significant other, 2) family, and 3) friends. The significance of this finding indicates that all types of social support are important for caregivers. The social support system likely provides the caregiver an outlet to share their joys and frustrations and also serves as a steady presence in his/her life. Additionally, social support may alleviate the burden of care giving for the parent by intermittently providing care for the child so that the parent can receive much needed respite to revive their mind and body. It is of the utmost importance for caregivers to remain connected with family and their community and/or become involved in professional organizations that can provide support and assistance with caring for their child. Support for this is found in the research conducted by Seybold, Fritz, and MacPhee (1991) where satisfaction with the quality of social support present in their lives was related to the sense of parenting competence and the ability to manage and balance a multitude of role demands for mothers who took part in the study.

Analysis of the relationship between severity of disability and stress experienced by parents and primary caregivers offered an interesting finding. Psychological severity of disability was found to be a significant predictor of stress, while physical severity of disability was not significantly correlated with stress for parents/caregivers. Psychological severity of disability included the functional areas of emotional/behavioral role functioning, self esteem, mental health, and behavior. Physical severity of disability involved aspects of physical functioning, social role functioning considering physical health, general health, and bodily pain. Richman, Belmont, Kim, Slavin, and Hayner

(2009) conducted a study where parents of children with Cornelia de Lange Syndrome experienced significantly higher levels of stress and the amount of stress experienced was significantly related to the amount of challenging behavior, pro-social behavior, and self-injury/stereotypy related to the disorder exhibited by the child. The results from the present study are consistent with the findings from this study. However, the result from the present study involving physical severity of disability is in contrast to previous research (Macias et al., 2006; Vermaes et al., 2008) that found significant correlations between the severity of a child's physical limitation resulting from their developmental disability and the stress experienced by parents/primary caregivers. The findings suggest that parental stress is tied to the psychological limitations resulting from their child's disability. In contrast to previous research, parental distress in the present study was not significantly tied to their child's physical limitations. Parents may find the additional support required by their child due to the psychological limitations resulting from the developmental disability as significantly more stressful than the physical components related to the disorder. Physical limitations may be more amenable to the direct care provided by parents and primary caregivers. As the behavioral and psychological issues stemming from developmental disabilities are more difficult to assess given a child's inability to fully communicate, the increased time, effort, and guidance that caregivers must provide to address these needs may result in more stress due to the limited impact that they may have on the problem. In other words, the true etiology of the psychological/behavioral deficits may not be known and the issues may persist if they are not correctly identified and addressed by the parent, therefore resulting in added demands and pressure placed on the caregiver.

Step 2: Predictive relationship between social support, severity of disability, life orientation and coping style. The second primary analysis sought to determine if the independent variables were significantly related to coping style orientation for caregivers. Lazarus (1984) theorized that there are two primary coping styles utilized by individuals to manage stress: problem-focused and emotion-focused. A person who uses a problem-focused coping style attempts to determine the source of stress existing in his/her environment and then reconfigures the environment to prevent stress from occurring in the future. Individuals who use an emotion-focused coping style are thought to do what is necessary to ward off the negative feelings associated with stress in the present time without making adjustments to prevent reoccurrence in the future. Lazarus suggests that, although both styles can be effective in stress reduction short term, the environmental modifications to prevent stress in the future associated with problem-focused coping leads to more effective outcomes for people long term (Lazarus 1999, 2006).

It was predicted that life orientation, severity of disability, and social support would all be significant predictors of coping style orientation for parents/primary caregivers. Specifically, parents/caregivers who reported to have a stable support system, who were optimistic in their life orientation, and who had children with a low level of severity of disability were hypothesized to use problem-focused coping strategies more often than emotion-focused coping strategies. Life orientation and social support were both significant predictors of coping style for parents/caregivers of individuals with developmental disabilities. Though physical severity of disability was significantly related to coping style, severity of psychological disability did not prove to be a significant predictor of coping for parents/ caregivers.

Though no previous research has been undertaken to investigate these relationships, the findings are mostly predictable based upon the previously mentioned research involving coping style orientation and parenting stress. As has been mentioned, life orientation, social support, and severity of disability have all been found to be significantly related to parenting stress. Also, Lazarus hypothesized that long-term wellness was related to the use of problem-focused coping strategies. Based upon this knowledge, it is reasonable to assert that parents who experience high social support, a high level of optimism, and who have a child with a low level of disability would utilize problem-focused coping strategies since both are tied to lower stress and better outcomes for parents. This is what was found as part of the present study. Only psychological severity of disability was not tied to coping style orientation which is of note considering that in the previous analysis it was significantly related to parental stress.

Practically, these findings imply that individuals use less emotion-focused coping strategies style when they are optimistic, have strong social support, and have a child who has low physical limitations caused by their disability. Given stability parents and primary caregivers may have the time and cognitive resources to consider future coping situations and rearrange their environments to ensure that stress producing encounters do not occur in the future. Parents who are burdened by pessimism, low social support, and a child with severe physical limitations are likely to not have the cognitive resources available to think about the future and are forced to be reactionary in their response, focusing on reducing the psychological and physiological impact of stress in the moment.

It was interesting to find that severity of psychological disability did not significantly predict coping style. This finding suggests that the severity of a child's

behavioral issues related to their disability does not result in a parent using more or less problem-focused coping strategies. This may be due to the nature of the behavioral issues associated with the disability. Whereas physical limitations are predicted to be more enduring in nature, behavioral/psychological issues are sometimes more transient as they may not be present all of the time. Given that these issues may be episodic in nature, parents may be able to use emotion-focused coping strategies successfully at the times they occur, but may use problem-focused strategies when the behaviors are not occurring. This may be true even if the behavioral episodes are severe in nature. More research is needed to analyze how coping strategies are used when parents must manage issues stemming from the psychological and behavioral aspects of their child's disability.

Step 3: Predictive relationship between coping style and stress. The third step in the mediation analysis was conducted to examine the influence that coping style had on the amount of stress experienced by parents and primary caregivers of children with developmental disabilities. For this step it was hypothesized that coping style would be significantly related to stress. Specifically, it was predicted that parents/caregivers who were oriented toward a problem-focused coping style would experience less stress than those utilizing an emotion-focused coping style. This hypothesis was based upon Lazarus' (1999, 2006) theory that individuals who are oriented toward a problem-focused coping style experience more long term relief from stress than those who gravitate toward an emotion-focused coping orientation. Results of this analysis found that coping style was determined to be a highly significant predictor of stress experienced by parents/caregivers. This finding suggests that parents and primary caregivers who used more problem-focused coping strategies experienced significant decreases in the stress

they experienced through parenting their child with a developmental disability in comparison to those caregivers who typically utilized a larger proportion of emotion-focused coping strategies.

This finding is consistent with Lazarus' (1999) suggestion regarding the higher likelihood of long term success in managing stress for those who are oriented toward a problem-focused coping style. For parents and primary caregivers of children with developmental disabilities it is probable that, through the use of problem-focused coping strategies, potential sources of parenting stress are identified and steps are taken to alter the environment to ensure that the stressors are never exacerbated in the future. Through these environmental alterations the caregiver is likely protected from the factors causing stress and therefore the physiological and/or emotional burden experienced through stress never occurs. This allows for a clear and uncluttered mind to provide the attention necessary to their child.

This finding is supported by previous research. Essex, Seltzer, and Krauss (1999) found that greater use of problem-focused coping strategies and less use of emotion-focused coping techniques buffered the negative impact of caregiver stress on mothers' psychological well-being. Also, Miller, Gordon, Daniele and Diller (1992) found that emotion-focused coping was significantly related to increased psychological distress in mothers whereas use of problem-focused coping was tied to decreased distress. Likewise, Kim, Greenberg, Seltzer, and Krauss (2003) found in a study of parental coping associated with the challenges of caring for an adult child with an intellectual disability that increases in the use of emotion-focused coping led to declining levels of well-being for parents.

Step 4: Coping style as a mediator. The final analysis determined if coping style significantly mediated the relationship between the stress influencing variables in the study and the actual experience of stress for parents and primary caregivers of children with developmental disabilities. In order for this analysis to be conducted there must have been significant relationships in the three preceding steps. As previously mentioned, life orientation and social support were both significant predictors of both coping style and the experience of stress for parents and primary caregivers. Coping style was also found to be a significant predictor of stress for caregivers. Severity of disability was not fully related to coping style or stress. Therefore it was not utilized as part of the final mediational analysis.

It was predicted that, when controlling for coping style, the relationship between the stress inducing variables (life orientation, social support) and stress experienced by parents and primary caregivers will no longer be significant. If statistical analyses indicated that the relationships were no longer significant, then support would be provided that mediation had occurred. Data showed that, after controlling for coping style, life orientation remained a significant predictor of stress perception for parents/primary caregivers. However, social support was no longer a significant predictor of stress once coping style was controlled for. Baron and Kenny (1986), in their recommendations for analyzing mediation, state that total mediation exists if the previously significant relationship becomes zero once the mediator is controlled for. They further suggest that if the relationship statistically is greater than zero but no longer reaches significance then partial mediation has occurred. The statistical relationship between social support and stress perception in this analysis was not zero after

controlling for coping style. This indicates that coping style does not completely mediate the relationship. However, given that the relationship no longer reaches statistical significance, the finding confirms the theoretical model in that it shows that coping style was a partial mediator of the relationship between social support and stress perception for parents and primary caregivers of children with developmental disabilities.

This implies that coping style serves as a filter through which social support passes during a parent's determination whether or not he/she will experience stress related to the nature of their support system. Practically, this result indicates that the nature of the support system is irrelevant if a parent or primary caregiver utilizes an emotion-focused coping style. The caregiver could have either a strong or weak support system in place. Regardless of the nature and stability of the support system, a parent will still experience a significant amount of stress if emotion-focused coping is the parent's dominant style of managing environmental demands. Inversely, a parent who is oriented toward a problem-focused coping style will experience less stress whether or not they have a strong, stable support system.

The present study lends support to the indirect, or mediated, pathway model of analyzing relationships between stress influencing variables and stress perception for parents and primary caregivers of children with developmental disabilities. The findings from this study provide theoretical insight into explaining the gap that exists in the literature between the amount of social support available to a caregiver and the stress experienced resulting from the nature of a parent's social support system.

Implications of the study. The results from the present study could be of great importance as they may provide an additional avenue for assessment for mental health

professionals and other family-based providers offering services to parents of children with developmental disabilities. While assessing the nature and status of the support system, it may be of importance to also assess a parent's typical manner of coping since the results of the this study suggest that a professional cannot assume that a stable and intact support system will preclude the parent from experiencing stress. If a parent is identified as being emotion-focused in their coping style, then perhaps additional therapeutic and/or educational support should be offered to assist the parent in moving toward a more problem-focused manner of coping with stress associated with parenting their child. This may be of great benefit when helping parents and their families reach their therapeutic goals.

Benefits of the study. A potential benefit that can be drawn from the completion of this research is that the study brought attention to parents and primary caregivers of children with developmental disabilities who are often an overlooked component in research literature as well as is the treatment setting. This study sought to place the proverbial "spotlight" on these caregivers because they are vital to the wellness of their children. Yet, despite their importance, caregivers are often overlooked in the literature as well as by treatment providers when services are rendered. Though this study only focused on one aspect of a parent's psychological being, perhaps this may lead to even more attention being given to parents and primary caregivers of children with developmental disabilities by the academic and mental health treatment community alike as both physical and psychological wellness of the caregiver is key to the child with a disability reaching their developmental potential.

Limitations of the study. A total of 368 survey packets were mailed to prospective participants. Of those 368 packets only 127 were returned. Those who returned surveys to the principal investigator may have been more motivated and/or less burdened in their lives. Given that mailing surveys to parents was the data collection procedure, it would require some level of motivation and availability of time on behalf of the caregiver to complete the packet and return to it to the principal investigator. Only those with time and motivation completing the survey packets would lead to a sample of participants that were unequally distributed as the group of caregivers who are burdened, and therefore less motivated, would not be represented in the sample. Also, having the resources and time available to complete the survey packet may imply that the individual is of a more stable economic status and/or of higher education. Further, the socioeconomic status of those completing survey packets may have influenced the findings. If those completing the survey packets had more tangible and non-tangible resources available then they would likely not experience stress at the same level as those of a lower income who may not have financial and social means at their disposal. These factors, if true, would significantly reduce the ability to generalize the findings.

Related to this, the demographic characteristics of the sample may have also limited the generalizability of the findings. The participants were all parents and primary caregivers living in one centralized area in Southeastern Michigan. Also, the ethnicity of those participating in the study was predominantly Caucasian. Although the findings are likely relevant to other ethnic groups as well as to parents and primary caregivers living in other geographic locations, the findings may not be able to be generalized to those groups because of the demographic structure of the sample used in the present study.

Another limitation is related to the instrumentation used in the study. In particular, the use of the SF-10 for measuring severity of disability rendered two separate scores for measuring severity of disability: a Psychosocial Scale and a Physical Health Scale. Given the inconsistent impact that these two subscales of the same measure had on the dependent variable throughout the study, the discrepancy may be due to how severity of disability was measured. This should be considered when analyzing the findings.

Recommendations for future research. The present study offered a theoretical model explaining the mediating impact of coping style on stress for parents and primary caregivers of children with developmental disabilities. Though statistical analysis offered some support for this model, further research is required to strengthen the foundation of this theoretical framework.

Future research conducted in this area should utilize different stress influencing variables to determine if coping style mediates the relationship between those factors and the experience of stress for caregivers of children with developmental disabilities. The current study used variables that current literature has identified as stress influencing for parents and primary caregivers. Variables both internal (life orientation) and external (social support) to the caregiver were used, while a factor related to the child (severity of disability) was also utilized. Given the plethora of factors that may contribute to stress for caregivers future research should analyze the mediating impact of coping style between those other stress influencing factors and the experience of stress for parents and primary caregivers. This could add to the foundation of knowledge created in the present study.

Secondly, future research should focus on parents and primary caregivers of younger children who have a developmental disability. As the present study was

compromised of primarily caregivers of older children with disabilities, more research is needed to determine if the findings would be same for parents and primary caregivers of younger children with developmental disabilities. If research is conducted and the findings are in opposition to what was found in the present study, then further analysis could be undertaken to determine what variables contribute to the difference in scores between the parents of younger children versus the parents of older children.

In general, more research is needed that focuses on variables that influence the physical and emotional wellness of parents and primary caregivers of children with developmental disabilities. As has been stated, children with disabilities need their parents to be physically and mentally sound in order to receive the care required to fulfill their developmental potential. More research is needed to identify the variables that contribute to parental wellness so that interventions can be developed and implemented that assist parents and primary caregivers in maintaining balance in their lives and, in turn, promote the wellness and development of their child.

Concluding remarks. The specific aim of this study was to determine if coping style mediated the relationship between known stress influencing variables and the actual experience of stress for caregivers of children with developmental disabilities. A theoretical model was developed mapping how this may occur and statistical analysis of this model revealed that coping style may be a partial mediator between social support and stress for parents. Though having a significant finding was exciting, the greatest insight and inspiration came from being able to interact with these parents and caregivers who work so hard every day to support their children. It is the hope that this study will act as a springboard for other researchers to conduct more studies in this area. By doing

so would contribute to the greater, more global aim of this study which was to bring attention to a group of individuals that truly need support in order to fulfill their roles effectively.

APPENDIX A**INTRODUCTORY LETTER**

Dear Sir or Madam:

My name is Justin W. Peer and I am a graduate student at Wayne State University in Detroit, Michigan. I am working to complete a Doctoral Degree in Educational Psychology. Part of the program requires me to complete a research study. I have chosen to complete a study that investigates the impact that different coping strategies have on how the parent and/or caregiver of an individual with a developmental disability perceives stress. It is my hope that through this study some light will be shed on variables that may assist parents and primary caregivers in alleviating stress in their lives. Enclosed you will find an Information Sheet that explains this study and how you can contact me should you have any questions. Also enclosed are several surveys that I kindly ask that you complete and return in the postage paid envelope that I have included. By completing the surveys you allow me to investigate these factors that I find crucial to the wellness of both parents/primary caregivers and individuals with a developmental disability. I offer my deepest appreciation to you for taking time out of your busy day to assist me with my study.

Sincerely,

Justin W. Peer
Graduate Student/Principal Investigator
Wayne State University

APPENDIX B**REMINDER NOTICE**

Dear Sir or Madam:

My name is Justin W. Peer and I am a graduate student at Wayne State University. I am conducting a research study analyzing several factors that influence stress for parents and primary caregivers of individuals with developmental disabilities. I recently mailed you a research survey packet and asked that you please consider completing the surveys and placing them in the mail in the stamped envelope that I enclosed. It is truly my hope that the findings from this study could be used to help better support parents and primary caregivers of individuals with developmental disabilities. If you have already completed the surveys and placed them in the mail I ask that you please disregard this message and accept my deepest appreciation for your assistance. If you have not completed the surveys I just ask that you please consider taking time out of your busy day to complete the surveys and place them in the mail using the stamped envelope that I have enclosed. Thank you for your time and consideration.

Sincerely,
Justin W. Peer

APPENDIX C**INFORMATION SHEET****Research Information Sheet**

Title of Study: The Mediating Impact of Coping Style on Stress for Caregivers of Children with Developmental Disabilities

Principal Investigator (PI): Justin W. Peer
Wayne State University, College of Education,
Department of Theoretical and Behavioral
Foundations
(734) 365-2463

Purpose:

You are being asked to be in a research study examining the impact coping style has on stress experienced by caregivers of children with developmental disabilities. You are being asked to participate because you have been identified as a parent of a child with a developmental disability. This study is being conducted in conjunction with Washtenaw County Community Support and Treatment Services (CSTS).

Study Procedures:

If you decide to participate in this study you will be asked to complete a total of 6 questionnaires. Each questionnaire measures a different variable associated with the study. The estimated total time to complete all the questionnaires provided is 30 minutes. Your participation in this study is a one-time occurrence. You will not be asked for further participation in the future. A packet is enclosed that includes all of the following in addition to this information sheet:

- 1) Demographic Questionnaire
- 2) Questionnaire measuring Parenting Stress
- 3) Questionnaire determining Coping Style
- 4) Questionnaire measuring Social Support
- 5) Questionnaire measuring the Severity of Your Child's Disability
- 6) Questionnaire measuring Life Orientation

Benefits:

As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks:

There are no known risks at this time to participation in this study.

Costs:

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

Compensation:

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

Confidentiality:

All information collected about you during the course of this study will be kept without any identifiers.

Voluntary Participation/Withdrawal:

Taking part in this study is voluntary. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with Community Support and Treatment Services (CSTS).

Questions:

If you have any questions about this study now or in the future, you may contact Justin W. Peer at the following phone number: (734) 365-2463. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:

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

APPENDIX D
DEMOGRAPHIC QUESTIONNAIRE

1. Your Gender (circle one):

Male Female

2. Marital Status (circle one):

Married Single Divorced Separated Widowed Cohabiting

3. Your Age: _____

4. Age of Your Child: _____

5. The Nature of Your Child's Disability:

- A. Cognitive (intellectual impairment)
- B. Physical (examples include cerebral palsy and epilepsy)
- C. A Combination of both Cognitive and Physical
- D. Genetic/Chromosomal (examples include Down's Syndrome and Fragile X Syndrome)
- E. Fetal Alcohol Spectrum
- F. Autism Spectrum

6. Your Relationship to Child with a Developmental Disability:

- A. Biological mother
- B. Biological father
- C. Stepmother
- D. Stepfather
- E. Adoptive mother
- F. Adoptive father
- G. Grandparent
- H. Other (please specify) _____

7. Ethnicity:

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

APPENDIX E
INSTRUMENTATION

Revised Life Orientation Test (LOT-R)

Instructions:

Please answer the following questions about yourself by indicating the extent of your agreement using the following scale:

[0] = strongly disagree

[1] = disagree

[2] = neutral

[3] = agree

[4] = strongly agree

Be as honest as you can throughout, and try not to let your responses to one question influence your response to other questions. There are no right or wrong answers.

- _____ 1. In uncertain times, I usually expect the best.
- _____ 2. It's easy for me to relax.
- _____ 3. If something can go wrong for me, it will.
- _____ 4. I'm always optimistic about my future.
- _____ 5. I enjoy my friends a lot.
- _____ 6. It's important for me to keep busy.
- _____ 7. I hardly ever expect things to go my way.
- _____ 8. I don't get upset too easily.
- _____ 9. I rarely count on good things happening to me.
- _____ 10. Overall, I expect more good things to happen to me than bad.

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5" if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. There is a special person who is around when I am in need. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. There is a special person with whom I can share my joys and sorrows. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. My family really tries to help me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I get the emotional help and support I need from my family. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I have a special person who is a real source of comfort to me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. My friends really try to help me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I can count on my friends when things go wrong. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I can talk about my problems with my family. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I have friends with whom I can share my joys and sorrows. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. There is a special person in my life who cares about my feelings. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. My family is willing to help me make decisions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I can talk about my problems with my friends. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

SF-10™ Health Survey for Children

INSTRUCTIONS

1. This survey asks about your child's health and well-being.
2. There are no right or wrong answers.
3. If you are unsure how to answer an item, please give the best response you can.
4. For each item, please select the response that best describes your answer by marking the appropriate box .
5. Please answer all items.

Thank you for completing this survey.

1. In general, would you say your child's health is:

Excellent	Very good	Good	Fair	Poor
▼	▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄	□ ₅

2. During the past 4 weeks, has your child been limited in any of the following activities due to HEALTH problems?

Yes, limited a lot	Yes, limited some	Yes, limited a little	No, not limited
▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄

a. *Doing things that take some energy such as riding a bike or skating?*

b. Bending, lifting, or stooping?

3. During the past 4 weeks, has your child been limited in the KIND of schoolwork or activities with friends he/she could do because of PHYSICAL health problems?

Yes, limited a lot	Yes, limited some	Yes, limited a little	No, not limited
▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄

4. During the past 4 weeks, has your child been limited in the KIND of schoolwork or activities with friends he/she could do because of EMOTIONAL or BEHAVIORAL problems?

Yes, limited a lot	Yes, limited some	Yes, limited a little	No, not limited
▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄

5. During the past 4 weeks, how much bodily pain or discomfort has your child had?

None	Very mild	Mild	Moderate	Severe	Very severe
▼	▼	▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄	□ ₅	□ ₆

6. During the past 4 weeks, how satisfied do you think your child has felt about his/her friendships?

Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied
▼	▼	▼	▼	▼
□ ₁	□ ₂	□ ₃	□ ₄	□ ₅

7. During the past 4 weeks, how satisfied do you think your child has felt about his/her life overall?

Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied
▼ □ ₁	▼ □ ₂	▼ □ ₃	▼ □ ₄	▼ □ ₅

8. During the past 4 weeks, how much of the time do you think your child acted bothered or upset?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
▼ □ ₁	▼ □ ₂	▼ □ ₃	▼ □ ₄	▼ □ ₅

9. Compared to other children your child's age, in general would you say his/her behavior is:

Excellent	Very good	Good	Fair	Poor
▼ □ ₁	▼ □ ₂	▼ □ ₃	▼ □ ₄	▼ □ ₅

WAYS OF COPING (REVISED)

Please think of a situation involving your child that caused you stress that occurred over the past 1 month. Read each item below and indicate, by using the following rating scale, to what extent you used these strategies to manage the stress resulting from the situation involving your child.

Not Used	Used Somewhat	Used Quite A Bit	Used A Great Deal
0	1	2	3

- _____ 1. Just concentrated on what I had to do next – the next step.
- _____ 2. I tried to analyze the problem in order to understand it better.
- _____ 3. Turned to work or substitute activity to take my mind off things.
- _____ 4. I felt that time would make a difference – the only thing to do was to wait.
- _____ 5. Bargained or compromised to get something positive from the situation.
- _____ 6. I did something which I didn't think would work, but at least I was doing something.
- _____ 7. Tried to get the person responsible to change his or her mind.
- _____ 8. Talked to someone to find out more about the situation.
- _____ 9. Criticized or lectured myself.
- _____ 10. Tried not to burn my bridges, but leave things open somewhat.
- _____ 11. Hoped a miracle would happen.
- _____ 12. Went along with fate; sometimes I just have bad luck.
- _____ 13. Went on as if nothing had happened.
- _____ 14. I tried to keep my feelings to myself.
- _____ 15. Looked for the silver lining, so to speak; tried to look on the bright side of things.
- _____ 16. Slept more than usual.
- _____ 17. I expressed anger to the person(s) who caused the problem.

- _____ 18. Accepted sympathy and understanding from someone.
- _____ 19. I told myself things that helped me to feel better.
- _____ 20. I was inspired to do something creative.
- _____ 21. Tried to forget the whole thing.
- _____ 22. I got professional help.
- _____ 23. Changed or grew as a person in a good way.
- _____ 24. I waited to see what would happen before doing anything.
- _____ 25. I apologized or did something to make up.
- _____ 26. I made a plan of action and followed it.
- _____ 27. I accepted the next best thing to what I wanted.
- _____ 28. I let my feelings out somehow.
- _____ 29. Realized I brought the problem on myself.
- _____ 30. I came out of the experience better than when I went in.
- _____ 31. Talked to someone who could do something concrete about the problem.
- _____ 32. Got away from it for a while; tried to rest or take a vacation.
- _____ 33. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.
- _____ 34. Took a big chance or did something very risky.
- _____ 35. I tried not to act too hastily or follow my first hunch.
- _____ 36. Found new faith.
- _____ 37. Maintained my pride and kept a stiff upper lip.
- _____ 38. Rediscovered what is important in life.
- _____ 39. Changed something so things would turn out all right.
- _____ 40. Avoided being with people in general.

- _____ 41. Didn't let it get to me; refused to think too much about it.
- _____ 42. I asked a relative or friend I respected for advice.
- _____ 43. Kept others from knowing how bad things were.
- _____ 44. Made light of the situation; refused to get too serious about it.
- _____ 45. Talked to someone about how I was feeling.
- _____ 46. Stood my ground and fought for what I wanted.
- _____ 47. Took it out on other people.
- _____ 48. Drew on my past experiences; I was in a similar situation before.
- _____ 49. I knew what had to be done, so I doubled my efforts to make things work.
- _____ 50. Refused to believe that it had happened.
- _____ 51. I made a promise to myself that things would be different next time.
- _____ 52. Came up with a couple of different solutions to the problem.
- _____ 53. Accepted it, since nothing could be done.
- _____ 54. I tried to keep my feelings from interfering with other things too much.
- _____ 55. Wished that I could change what had happened or how I felt.
- _____ 56. I changed something about myself.
- _____ 57. I daydreamed or imagined a better time or place than the one I was in.
- _____ 58. Wished that the situation would go away or somehow be over with.
- _____ 59. Had fantasies or wishes about how things might turn out.
- _____ 60. I prayed.
- _____ 61. I prepared myself for the worst.
- _____ 62. I went over in my mind what I would say or do.

- _____ 63. I thought about how a person I admire would handle this situation and used that person as a model
- _____ 64. I tried to see things from the other person's point of view.
- _____ 65. I reminded myself how much worse things could be.
- _____ 66. I jogged or exercised.

PSI Short Form

Instructions

This questionnaire contains 36 statements. Read each statement carefully. For each statement, please focus on the child you are most concerned about, and circle the response that best represents your opinion.

Circle the SA if you strongly agree with the statement.

Circle the A if you agree with the statement.

Circle the NS if you are not sure.

Circle the D if you disagree with the statement.

Circle the SD if you strongly disagree with the statement.

For example, if you sometimes enjoy going to the movies, you would circle A in response to the following statement:

I enjoy going to the movies. SA A NS D SD

While you may not find a response that exactly states your feelings, please circle the response that comes closest to describing how you feel. **YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.**

Circle only one response for each statement, and respond to all statements. **DO NOT ERASE!** If you need to change an answer, make an "X" through the incorrect answer and circle the correct response. For example:

I enjoy going to the movies. SA A NS X SD

	SA = Strongly Agree	A = Agree	NS = Not Sure	D = Disagree	SD = Strongly Disagree
1. I often have the feeling that I cannot handle things very well.	SA	A	NS	D	SD
2. I find myself giving up more of my life to meet my children's needs than I ever expected.	SA	A	NS	D	SD
3. I feel trapped by my responsibilities as a parent.	SA	A	NS	D	SD
4. Since having this child, I have been unable to do new and different things.	SA	A	NS	D	SD
5. Since having a child, I feel that I am almost never able to do things that I like to do.	SA	A	NS	D	SD
6. I am unhappy with the last purchase of clothing I made for myself.	SA	A	NS	D	SD
7. There are quite a few things that bother me about my life.	SA	A	NS	D	SD
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).	SA	A	NS	D	SD
9. I feel alone and without friends.	SA	A	NS	D	SD
10. When I go to a party, I usually expect not to enjoy myself.	SA	A	NS	D	SD
11. I am not as interested in people as I used to be.	SA	A	NS	D	SD
12. I don't enjoy things as I used to.	SA	A	NS	D	SD
13. My child rarely does things for me that make me feel good.	SA	A	NS	D	SD
14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.	SA	A	NS	D	SD
15. My child smiles at me much less than I expected.	SA	A	NS	D	SD
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.	SA	A	NS	D	SD
17. When playing, my child doesn't often giggle or laugh.	SA	A	NS	D	SD
18. My child doesn't seem to learn as quickly as most children.	SA	A	NS	D	SD
19. My child doesn't seem to smile as much as most children.	SA	A	NS	D	SD
20. My child is not able to do as much as I expected.	SA	A	NS	D	SD
21. It takes a long time and it is very hard for my child to get used to new things.	SA	A	NS	D	SD
For the next statement, choose your response from the choices "1" to "5" below.					
22. I feel that I am:	1	2	3	4	5
1. not very good at being a parent					
2. a person who has some trouble being a parent					
3. an average parent					
4. a better than average parent					
5. a very good parent					
23. I expected to have closer and warmer feelings for my child than I do and this bothers me.	SA	A	NS	D	SD
24. Sometimes my child does things that bother me just to be mean.	SA	A	NS	D	SD
25. My child seems to cry or fuss more often than most children.	SA	A	NS	D	SD
26. My child generally wakes up in a bad mood.	SA	A	NS	D	SD
27. I feel that my child is very moody and easily upset.	SA	A	NS	D	SD
28. My child does a few things which bother me a great deal.	SA	A	NS	D	SD
29. My child reacts very strongly when something happens that my child doesn't like.	SA	A	NS	D	SD
30. My child gets upset easily over the smallest thing.	SA	A	NS	D	SD
31. My child's sleeping or eating schedule was much harder to establish than I expected.	SA	A	NS	D	SD
For the next statement, choose your response from the choices "1" to "5" below.					
32. I have found that getting my child to do something or stop doing something is:	1	2	3	4	5
1. much harder than I expected					
2. somewhat harder than I expected					
3. about as hard as I expected					
4. somewhat easier than I expected					
5. much easier than I expected					
For the next statement, choose your response from the choices "10+" to "1-3."					
33. Think carefully and count the number of things which your child does that bother you.	10+	8-9	6-7	4-5	1-3
For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.					
34. There are some things my child does that really bother me a lot.	SA	A	NS	D	SD
35. My child turned out to be more of a problem than I had expected.	SA	A	NS	D	SD
36. My child makes more demands on me than most children.	SA	A	NS	D	SD

APPENDIX F

HUMAN INVESTIGATION COMMITTEE APPROVAL LETTER

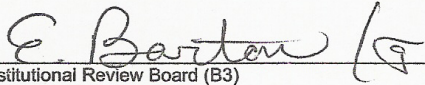
WAYNE STATE
UNIVERSITY

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



CONCURRENCE OF EXEMPTION

To: Justin Peer
College of Education

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

Date: October 13, 2009

RE: HIC #: 098609B3X
Protocol Title: The Mediating Impact of Coping Style on Stress for Caregivers of Children with Developmental Disabilities
Sponsor:
Protocol #: 0909007583

The above-referenced protocol has been reviewed and found to qualify for **Exemption** according to paragraph #2 of the Department of Health and Human Services Code of Federal Regulations [45 CFR 46.101(b)].

- Information Sheet

This proposal has not been evaluated for scientific merit, except to weight the risk to the human subjects in relation to the potential benefits.

- Exempt protocols do not require annual review by the IRB.
- All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<http://www.hic.wayne.edu/hicpol.html>).

NOTE:

1. Forms should be downloaded from the HIC website at each use.
2. Submit a Closure Form to the HIC Office upon completion of the study.

APPENDIX G

LETTER OF APPROVAL FOR RECRUITING PARTICIPANTS



washtenaw community
health organization

February 19, 2009

ADMINISTRATION

555 Towner Blvd.,
P.O. Box 915
Ypsilanti, Michigan 48197-0915
Phone (734) 544-3000
FAX (734) 544-6732

Patrick Barrie
Interim Executive Director

Karen Milner, MD,
Medical Director
Associate Director

BOARD MEMBERS

Diane Davidson, Chair
Michael F. Dabbs
Leila Bauer
Barbara Bergman
Linda King
Gene Brown
Jerry Walden
Patricia Hickmott
Virginia Harmon
Cassandra McCallister
Kathleen Rhine

Dear Justin:

Thank you for meeting with me to discuss your study. I understand your intent is to recruit the parents of consumers with developmental disabilities as subjects and that this would take place through WCHO provider organizations. On behalf of the WCHO I want to express my support for your proposed study.

The WCHO Outcome and Evaluation Committee is charged with reviewing research proposals quarterly. We look forward to receiving the proposal and collaborating with you on this study.

Sincerely,

Jeff Capobianco
Director of Research & New Program Development

REFERENCES

- Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual* (3rd ed.). Odessa, FL: Psychological Assessment Resources, Inc.
- Åhman, L., Bergdahl, J., Nyberg, L., & Nilsson, L. (2007). Longitudinal analysis of the relation between moderate long-term stress and health. *Stress and Health: Journal of the International Society for the Investigation of Stress*, 23(2), 131-138.
- Americans with Disabilities Act of 1990, Pub. L. No. 101-336, § 2, 104 Stat. 328 (1991).
- Aspinwall, L. G., & Brunhart, S. M. (2000). What I do know won't hurt me: Optimism, attention to negative information, coping, and health. In J. E. Gillham (Ed.), *The science of optimism and hope symposium, feb, philadelphia, PA, US* (pp. 163-200). West Conshohocken, PA, US: Templeton Foundation Press.
- Aunos, M., Feldman, M., & Goupil, G. (2008). Mothering with intellectual disabilities: Relationship between social support, health and well-being, parenting and child behaviour outcomes. *Journal of Applied Research in Intellectual Disabilities*, 21(4), 320-330.
- Baker, B. L., Blacher, J., & Olsson, M. B. (2005). Preschool children with and without developmental delay: Behaviour problems, parents' optimism and well-being. *Journal of Intellectual Disability Research*, 49(8), 575-590.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

- Beckman, P. J. (1991). Comparison of mothers' and fathers' perceptions of the effect of young children with and without disabilities. *American Journal on Mental Retardation*, 95(5), 585-585.
- Bendell, R. D., Culbertson, J. L., Shelton, T. L., & Carter, B. D. (1986). Interrupted infantile apnea: Impact on early development, temperament, and maternal stress. *Journal of Clinical Child Psychology*, 15(4), 304-310.
- Blacher, J., Neece, C. L., & Paczkowski, E. (2005). Families and intellectual disability. *Current Opinion in Psychiatry*, 18(5), 507-513.
- Carver, C. S. (2007). Stress, coping, and health. In H. S. Friedman, & R. C. Silver (Eds.), *Foundations of health psychology*. (pp. 117-144). New York, NY, US: Oxford University Press.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Cohen, S. (2003). Psychosocial models of the role of social support in the etiology of physical disease. In P. Salovey, & A. J. Rothman (Eds.), *Social psychology of health*. (pp. 227-244). New York, NY, US: Psychology Press.
- Cohen, S., & Hamrick, N. (2003). Stable individual differences in physiological response to stressors: Implications for stress-elicited changes in immune related health. *Brain, Behavior, and Immunity*, 17(6), 407-414.
- Cowen, P. S., & Reed, D. A. (2002). Effects of respite care for children with developmental disabilities: Evaluation of an intervention for at risk families. *Public Health Nursing*, 19(4), 272-272.

- Cushner-Weinstein, S., Dassoulas, K., Salpekar, J. A., Henderson, S. E., Pearl, P. L., Gaillard, W. D., et al. (2008). Parenting stress and childhood epilepsy: The impact of depression, learning, and seizure-related factors. *Epilepsy & Behavior, 13*(1), 109-114.
- de Schipper, E. J., Riksen-Walraven, J. M., Geurts, S. A. E., & Derksen, J. J. L. (2008). General mood of professional caregivers in child care centers and the quality of caregiver-child interactions. *Journal of Research in Personality, 42*(3), 515-526.
- DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54*(3), 486-495.
- Diong, S. M., Bishop, G. D., Enkelmann, H. C., Tong, E. M. W., Why, Y. P., Ang, J. C. H., et al. (2005). Anger, stress, coping, social support and health: Modeling the relationships. *Psychology & Health, 20*(4), 467-495.
- Edwards, J. R., & O'Neill, R. M. (1998). The construct validity of scores on the ways of coping questionnaire: Confirmatory analysis of alternative factor structures. *Educational and Psychological Measurement, 58*(6), 955-983.
- Ello, L. M., & Donovan, S. J. (2005). Assessment of the relationship between parenting stress and a child's ability to functionally communicate. *Research on Social Work Practice, 15*(6), 531-544.
- Essex, E. L., Seltzer, M. M., & Krauss, M. W. (1999). Differences in coping effectiveness and well-being among aging mothers and fathers of adults with mental retardation. *American Journal on Mental Retardation, 104*(6), 545-563.

- Faravelli, C., & Pallanti, S. (1989). Recent life events and panic disorder. *The American Journal of Psychiatry*, *146*(5), 622-626.
- Feldman, M. A., Varghese, J., Ramsay, J., & Rajska, D. (2002). Relationships between social support, stress and mother-child interactions in mothers with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, *15*(4), 314-314.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, *21*(3), 219-239.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, *48*(1), 150-170.
- Folkman, S., & Lazarus, R. S. (1986). Stress processes and depressive symptomatology. *Journal of Abnormal Psychology*, *95*(2), 107-113.
- Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, *54*(3), 466-475.
- Folkman, S., & Lazarus, R. S. (1988). The relationship between coping and emotion: Implications for theory and research. *Social Science & Medicine. Special Issue: Stress and Coping in Relation to Health and Disease*, *26*(3), 309-317.
- Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*, 745-774.
- Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992-1003.

- 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*(3), 571-579.
- Gavidia-Payne, S., & Stoneman, Z. (2006). "Marital adjustment of parents of young children with disabilities: Associations with daily hassles and problem-focused coping": Erratum. *American Journal on Mental Retardation, 111*(3), 198.
- Giallo, R., & Gavidia-Payne, S. (2006). Child, parent and family factors as predictors of adjustment for siblings of children with a disability. *Journal of Intellectual Disability Research, 50*(12), 937-948.
- Glidden, L. M., & Natcher, A. L. (2009). Coping strategy use, personality, and adjustment of parents rearing children with developmental disabilities. *Journal of Intellectual Disability Research, 53*(12), 998-1013.
- Goubert, L., Eccleston, C., Vervoort, T., Jordan, A., & Crombez, G. (2006). Parental catastrophizing about their child's pain. the parent version of the pain catastrophizing scale (PCS-P): A preliminary validation. *Pain, 123*(3), 254-263.
- Grosse, S. D., Flores, A. L., Ouyang, L., Robbins, J. M., & Tilford, J. M. (2009). Impact of spina bifida on parental caregivers: Findings from a survey of arkansas families. *Journal of Child and Family Studies, 18*(5), 574-581.
- Gupta, V. B. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities, 19*(4), 417-425.
- Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology, 1*(1), 293-319.

- Haskett, M. E., Ahern, L. S., Ward, C. S., & Allaire, J. C. (2006). Factor structure and validity of the parenting stress index-short form. *Journal of Clinical Child and Adolescent Psychology, 35*(2), 302-312.
- Hassall, R., & Rose, J. (2005). Parental cognitions and adaptation to the demands of caring for a child with an intellectual disability: A review of the literature and implications for clinical interventions. *Behavioural and Cognitive Psychotherapy, 33*(1), 71-88.
- Hassall, R., Rose, J., & McDonald, J. (2006). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(6), 405-418.
- Hastings, R. P., Kovshoff, H., Brown, T., Ward, N. J., Espinosa, F. D., & Remington, B. (2005). Coping strategies in mothers and fathers of preschool and school-age children with autism. *Autism, 9*(4), 377-391.
- Hill, R. (1949). *Families under stress: Adjustment to the crises of war separation and return*. Oxford, England: Harper.
- Hussain, A., & Juyal, I. (2007). Stress appraisal and coping strategies among parents of physically challenged children. *Journal of the Indian Academy of Applied Psychology, 33*(2), 179-182.
- Johner, R. L. (2007). Allostatic load: Single parents, stress-related health issues, and social care. *Health & Social Work, 32*(2), 89-94.

- Johnson, R. F., O'Reilly, M., & Vostanis, P. (2006). Caring for children with learning disabilities who present problem behaviours: A maternal perspective. *Journal of Child Health Care, 10*(3), 188-198.
- Jones, F., & Bright, J. (2007). Stress: Health and illness. In A. Monat, R. S. Lazarus & G. Reevy (Eds.), *The praeger handbook on stress and coping (vol.1)*. (pp. 141-168). Westport, CT, US: Praeger Publishers/Greenwood Publishing Group.
- Jones, J., & Passey, J. (2005). Family adaptation, coping and resources: Parents of children with developmental disabilities and behaviour problems. *Journal on Developmental Disabilities. Special Issue on Families of Individuals with DD, 11*(1), 31-46.
- Karazsia, B. T., & Wildman, B. G. (2009). The mediating effects of parenting behaviors on maternal affect and reports of children's behavior. *Journal of Child and Family Studies, 18*(3), 342-349.
- Karazsia, B. T., & Wildman, B. G. (2009). The mediating effects of parenting behaviors on maternal affect and reports of children's behavior. *Journal of Child and Family Studies, 18*(3), 342-349.
- Kayfitz, A. D., Gragg, M. N., & Orr, R. R. (2010). Positive experiences of mothers and fathers of children with autism. *Journal of Applied Research in Intellectual Disabilities, 23*(4), 337-343.
- Kayfitz, A. D., Gragg, M. N., & Orr, R. R. (2010). Positive experiences of mothers and fathers of children with autism. *Journal of Applied Research in Intellectual Disabilities, 23*(4), 337-343.

- Ketelaar, M., Volman, M. J. M., Gorter, J. W., & Vermeer, A. (2008). Stress in parents of children with cerebral palsy: What sources of stress are we talking about? *Child: Care, Health and Development*, 34(6), 825-829.
- Kim, H., Greenberg, J. S., Seltzer, M. M., & Krauss, M. W. (2003). The role of coping in maintaining the psychological well-being of mothers of adults with intellectual disability and mental illness. *Journal of Intellectual Disability Research. Special Issue on Family Research*, 47(4-5), 313-327.
- Krantz, D. S., & McCeney, M. K. (2002). Effects of psychological and social factors on organic disease: A critical assessment of research on coronary heart disease. *Annual Review of Psychology*, 53(1), 341-369.
- Lach, L. M., Kohen, D. E., Garner, R. E., Brehaut, J. C., Miller, A. R., Klassen, A. F., & Rosenbaum, P. L. (2009). The health and psychosocial functioning of caregivers of children with neurodevelopmental disorders. *Disability and Rehabilitation: An International, Multidisciplinary Journal*, 31(8), 607-618.
- Langford, C. P. H., Bowsher, J., Maloney, J., & Lillis, P. P. (1997). Social support: A conceptual analysis. *Journal of Advanced Nursing*, 25, 95-100.
- Larson, S., Lakin, C., Anderson, L., Kwak, N., Hak Lee, J., & Anderson, D. (2000). Prevalence of mental retardation and/or developmental disabilities: Analysis of the 1994/1995 nhis-d. *MR/DD Data Brief*, 2 (1), 1-5.
- Lazarus, R. (1986). Coping strategies. In S. McHugh, & T. M. Vallis (Eds.), (pp. 303-308). New York, NY, US: Plenum Press.
- Lazarus, R. S. (1984). On the primacy of cognition. *American Psychologist*, 39(2), 124-129.

- Lazarus, R. S. (1984). Puzzles in the study of daily hassles. *Journal of Behavioral Medicine*, 7(4), 375-389.
- Lazarus, R. S. (1984). *The trivialization of distress*. Washington, DC, US: American Psychological Association.
- Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine*, 55(3), 234-247.
- Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, 44, 1-21.
- Lazarus, R. S. (1993). Why we should think of stress as a subset of emotion. In L. Goldberger, & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects (2nd ed.)*. (pp. 21-39). New York, NY, US: Free Press.
- Lazarus, R. S. (1999). *Stress and emotion*. New York, NY, US: Springer Publishing Company.
- Lazarus, R. S. (2006). *Stress and emotion: A new synthesis*. New York, NY, US: Springer Publishing Company.
- Lazarus, R. S., & Folkman, S. (1986). Cognitive theories of stress and the issue of circularity. In M. H. Appley, & R. Trumbull (Eds.), *Dynamics of stress: Physiological, psychological, and social perspectives*. (pp. 63-80). New York, NY, US: Plenum Press.
- Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality*, 1(3SpecIssue), 141-169.

- Lazarus, R. S., DeLongis, A., Folkman, S., & Gruen, R. (1985). Stress and adaptational outcomes: The problem of confounded measures. *American Psychologist*, 40(7), 770-779.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY, US: Springer Publishing Company.
- Lloyd, T., & Hastings, R. P. (2008). Psychological variables as correlates of adjustment in mothers of children with intellectual disabilities: Cross-sectional and longitudinal relationships. *Journal of Intellectual Disability Research*, 52(1), 37-48.
- Lovullo, W. R. (2005). *Stress & health: Biological and psychological interactions (2nd ed.)*. Thousand Oaks, CA, US: Sage Publications, Inc.
- Lundberg, U. (2006). Stress, subjective and objective health. *International Journal of Social Welfare*, 15(1), S41-S48.
- Macias, M. M., Roberts, K. M., Saylor, C. F., & Fussell, J. J. (2006). Toileting concerns, parenting stress, and behavior problems in children with special health care needs. *Clinical Pediatrics*, 45(5), 415-422.
- McCubbin, H. I., & Patterson, J. M. (1983). The family stress process: The double ABCX model of adjustment and adaptation. *Marriage & Family Review*, 6(1-2), 7-37.
- Miller, A. C., Gordon, R. M., Daniele, R. J., & Diller, L. (1992). Stress, appraisal, and coping in mothers of disabled and nondisabled children. *Journal of Pediatric Psychology*. Special Issue: Theory-Driven Research in Pediatric Psychology: I, 17(5), 587-605.
- Miller, A. C., Gordon, R. M., Daniele, R. J., & Diller, L. (1992). Stress, appraisal, and coping in mothers of disabled and nondisabled children. *Journal of Pediatric*

Psychology. Special Issue: Theory-Driven Research in Pediatric Psychology: I, 17(5), 587-605.

Minnes, P., Woodford, L., & Passey, J. (2007). Mediators of well-being in ageing family carers of adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 20(6), 539-552.

Miodrag, N., & Hodapp, R. M. (2010). Chronic stress and health among parents of children with intellectual and developmental disabilities. *Current Opinion in Psychiatry*, 23(5), 407-411.

Mitchell, D. B., & Hauser-Cram, P. (2008). The well-being of mothers of adolescents with developmental disabilities in relation to medical care utilization and satisfaction with health care. *Research in Developmental Disabilities*, 29(2), 97-112.

Mitchell, D. B., & Hauser-Cram, P. (2010). Early childhood predictors of mothers' and fathers' relationships with adolescents with developmental disabilities. *Journal of Intellectual Disability Research*, 54(6), 487-500.

Murphy, N. A., Christian, B., Caplin, D. A., & Young, P. C. (2007). The health of caregivers for children with disabilities: Caregiver perspectives. *Child: Care, Health and Development*, 33(2), 180-187.

U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Child Health and Human Development. (2010). *Developmental disabilities*. Retrieved from http://www.nichd.nih.gov/health/topics/developmental_disabilities.cfm

- Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *Journal of Intellectual & Developmental Disability, 31*(1), 1-12.
- Orsmond, G. I., & Seltzer, M. M. (2009). Adolescent siblings of individuals with an autism spectrum disorder: Testing a diathesis-stress model of sibling well-being. *Journal of Autism and Developmental Disorders, 39*(7), 1053-1065.
- Orsmond, G. I., Kuo, H., & Seltzer, M. M. (2009). Siblings of individuals with an autism spectrum disorder: Sibling relationships and wellbeing in adolescence and adulthood. *Autism, 13*(1), 59-80.
- Pakenham, K. I., Samios, C., & Sofronoff, K. (2005). Adjustment in mothers of children with asperger syndrome: An application of the double ABCX model of family adjustment. *Autism, 9*(2), 191-212.
- Parker, J. D., Endler, N. S., & Bagby, R. M. (1993). If it changes, it might be unstable: Examining the factor structure of the ways of coping questionnaire. *Psychological Assessment, 5*(3), 361-368.
- Pellissier, S., Dantzer, C., Canini, F., Mathieu, N., & Bonaz, B. (2010). Psychological adjustment and autonomic disturbances in inflammatory bowel diseases and irritable bowel syndrome. *Psychoneuroendocrinology, 35*(5), 653-662.
- Plant, K. M., & Sanders, M. R. (2007). Predictors of caregiver stress in families of preschool-aged children with developmental disabilities. *Journal of Intellectual Disability Research, 51*(2), 109-124.

- Pottie, C. G., & Ingram, K. M. (2008). Daily stress, coping, and well-being in parents of children with autism: A multilevel modeling approach. *Journal of Family Psychology, 22*(6), 855-864.
- Rapanaro, C., Bartu, A., & Lee, A. H. (2008). Perceived benefits and negative impact of challenges encountered in caring for young adults with intellectual disabilities in the transition to adulthood. *Journal of Applied Research in Intellectual Disabilities, 21*(1), 34-47.
- Renty, J., & Roeyers, H. (2006). Satisfaction with formal support and education for children with autism spectrum disorder: The voices of the parents. *Child: Care, Health and Development, 32*(3), 371-385.
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with cornelia de lange syndrome and down syndrome. *Journal of Developmental and Physical Disabilities, 21*(6), 537-553.
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with cornelia de lange syndrome and down syndrome. *Journal of Developmental and Physical Disabilities, 21*(6), 537-553.
- Wulffaert, J., Scholte, E. M., Dijkxhoorn, Y. M., Bergman, J. E. H., van Ravenswaaij-Arts, C. M. A., & van Berckelaer-Onnes, I. A. (2009). Parenting stress in CHARGE syndrome and the relationship with child characteristics. *Journal of Developmental and Physical Disabilities, 21*(4), 301-313.
- Richman, D. M., Belmont, J. M., Kim, M., Slavin, C. B., & Hayner, A. K. (2009). Parenting stress in families of children with cornelia de lange syndrome and down syndrome. *Journal of Developmental and Physical Disabilities, 21*(6), 537-553.

- Saris-Baglana, R.N., DeRosa, M.A., Raczek, A.E., Bjorner, J.B. & Ware, J.E. (2006). Development, validation, and norming of the SF-10 for Children Health Survey. *Quality of Life Research, 15(S1)*, A-145. [Abstract]
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. *Journal of Personality and Social Psychology, 67(6)*, 1063-1078.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology, 1(1)*, 607-628.
- Secco, M. L., Askin, D., Yu, C. T., Garinger, J., Mulaire-Cloutier, C., Scharf, L., et al. (2006). Factors affecting parenting stress among biologically vulnerable toddlers. *Issues in Comprehensive Pediatric Nursing, 29(3)*, 131-156.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55(1)*, 5-14.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2001). "Positive psychology: An introduction": Reply. *American Psychologist, 56(1)*, 89-90.
- Seybold, J., Fritz, J., & MacPhee, D. (1991). Relation of social support to the self-perceptions of mothers with delayed children. *Journal of Community Psychology, 19(1)*, 29-29.
- Sharma, S., & Sharma, M. (2007). Preventing illness and promoting of health and well-being: The stress perspective. *Psychological Studies, 52(1)*, 70-76.
- Singer, G. H. S., Ethridge, B. L., & Aldana, S. I. (2007). Primary and secondary effects of parenting and stress management interventions for parents of children with

- developmental disabilities: A meta-analysis. *Mental Retardation and Developmental Disabilities Research Reviews*, 13(4), 357-369.
- Singh, N. N., Lancioni, G. E., Winton, A. S. W., Singh, J., Curtis, W. J., Wahler, R. G., et al. (2007). Mindful parenting decreases aggression and increases social behavior in children with developmental disabilities. *Behavior Modification*, 31(6), 749-771.
- Sipal, R. F., Schuengel, C., Voorman, J. M., Van Eck, M., & Becher, J. G. (2010). Course of behaviour problems of children with cerebral palsy: The role of parental stress and support. *Child Care, Health & Development*, 36(1), 74-84.
- Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion. Special Issue: Appraisal and Beyond: The Issue of Cognitive Determinants of Emotion*, 7(3-4), 233-269.
- Smith, C. A., Haynes, K. N., Lazarus, R. S., & Pope, L. K. (1993). In search of the "hot" cognitions: Attributions, appraisals, and their relation to emotion. *Journal of Personality and Social Psychology*, 65(5), 916-929.
- Smith, L. E., Seltzer, M. M., Tager-Flusberg, H., Greenberg, J. S., & Carter, A. S. (2008). A comparative analysis of well-being and coping among mothers of toddlers and mothers of adolescents with ASD. *Journal of Autism and Developmental Disorders*, 38(5), 876-889.
- Smith, T. B., Oliver, M. N. I., & Innocenti, M. S. (2001). Parenting stress in families of children with disabilities. *American Journal of Orthopsychiatry*, 71(2), 257-257.
- Son, J., Erno, A., Shea, D. G., Femia, E. E., Zarit, S. H., & Stephens, M. A. P. (2007). The caregiver stress process and health outcomes. *Journal of Aging and Health*, 19(6), 871-887.

- Spratt, E. G., Saylor, C. F., & Macias, M. M. (2007). Assessing parenting stress in multiple samples of children with special needs (CSN). *Families, Systems, & Health*, 25(4), 435-449.
- State of Michigan. (2009). Mental Health Code, Act 258 of 1974. Retrieved from <http://www.legislature.mi.gov/%28S%284rgzg45qqmter451o0mms55%29%29/mileg.aspx?page=getObject&objectname=mcl-act-258-of-1974>.
- Stuart, M., & McGrew, J. H. (2009). Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in Autism Spectrum Disorders*, 3(1), 86-97.
- Tehee, E., Honan, R., & Hevey, D. (2009). Factors contributing to stress in parents of individuals with autistic spectrum disorders. *Journal of Applied Research in Intellectual Disabilities*, 22(1), 34-42.
- The Developmental Disabilities and Bill of Rights Act of 2000. (2000). Public Law 106-402—October 30, 2000 114 Stat. 1677. Retrieved from <http://www.acf.hhs.gov/programs/add/ddact/DDACT2.html>
- Tung, H., Hunter, A., & Wei, J. (2008). Coping, anxiety and quality of life after coronary artery bypass graft surgery. *Journal of Advanced Nursing*, 61(6), 651-663.
- Vermaes, I. P. R., Janssens, J. M. A. M., Mullaart, R. A., Vinck, A., & Gerris, J. R. M. (2008). Parents' personality and parenting stress in families of children with spina bifida. *Child: Care, Health and Development*, 34(5), 665-674.
- Wulffaert, J., Scholte, E. M., Dijkxhoorn, Y. M., Bergman, J. E. H., van Ravenswaaij-Arts, C. M. A., & van Berckelaer-Onnes, I. A. (2009). Parenting stress in CHARGE syndrome and the relationship with child characteristics. *Journal of Developmental and Physical Disabilities*, 21(4), 301-313.

Xu, Yaoying. (2007). Empowering culturally diverse families of young children with disabilities: the double abcx model. *Early Childhood Education Journal*, 34(6), 431-437

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.

ABSTRACT**COPING STYLE AS A MEDIATOR OF STRESS PERCEPTION FOR
CAREGIVERS OF CHILDREN WITH DEVELOPMENTAL DISABILITIES**

by

JUSTIN W. PEER**May 2011****Advisor:** Dr. Stephen Hillman**Major:** Educational Psychology**Degree:** Doctor of Philosophy

Past research has found that parents and primary caregivers of children with developmental disabilities experience more stress than parents with children of normal development (Cushner-Weinstein et al., 2008; Hussain & Juyal, 2007). The present study examined the influence that coping style has on the relationship between known stress influencing variables (social support, severity of child disability, life orientation) and the perception of stress for caregivers of children with developmental disabilities. Parents or primary caregivers ($N = 127$) whose children received mental health services from a large Community Mental Health agency in Washtenaw County, Michigan participated in the study. Participants were assessed using the Multidimensional Scale of Perceived Social Support (MSPSS), SF-10 Health Survey for Children (SF-10), Revised Life Orientation Test (LOT-R), Ways of Coping Scale (WCS), the Parenting Stress Index-Short Form (PSI-SF), and a demographic survey.

A multiple regression analysis was utilized according to the model for statistical mediation developed by Baron and Kenny (1986). This statistical method sought to analyze the mediating impact coping style had on the relationship between the stress

influencing variables (social support, life orientation, severity of disability) utilized and the perception of stress for parents and primary caregivers of children with developmental disabilities. The results of this analysis indicated that coping style acted as a partial mediator in the relationship between social support and stress perception for parents/caregivers of children with developmental disabilities.

A potential benefit of the study was that the research focused on caregivers of children with developmental disabilities who have been mostly overlooked in the literature while possible limitations included demographic characteristics of the sample and issues related to the instrumentation utilized. It is suggested that future research utilize the current model to analyze other variables found to influence stress for caregivers of children with developmental disabilities.

AUTOBIOGRAPHICAL STATEMENT

Justin W. Peer

- Education Doctor of Philosophy, 2011-Wayne State University
 Major: Educational Psychology
 Cognate: Human Development
- Master of Arts, 2001-Wayne State University
 Major: Marriage and Family Psychology
- Bachelor of Arts, 1998-Wayne State University
 Major: Honors Psychology
 Co-Major: University Honors
- Certifications: State of Michigan-Limited License Psychologist
 State of Michigan-Certified Advanced Addictions Counselor
- Professional
 Experience: 2010
 The Guidance Center-Adult and Family Services
 Clinical Therapist
- 2009-Present
 Baker College of Allen Park
 Psychology Instructor
- 2008-Present
 Washtenaw Community Health Organization
 Recipient Rights Officer
- 2006-2008
 Monroe Community Mental Health Authority
 Developmental Disabilities Program Supervisor
- 2001-2008
 Monroe Community Mental Health Authority
 Assessment Clinician
- Professional
 Memberships: Associate Member, American Psychological Association
 Student Affiliate, Michigan Psychological Association