

THE RELATIONSHIP OF PARENTAL OVERPROTECTION
AND PARENTING STRESS TO DEPRESSION IN
CHILDREN AND ADOLESCENTS WITH
INSULIN-DEPENDENT DIABETES
MELLITUS

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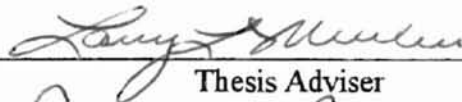
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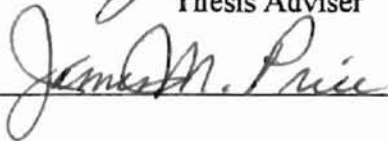
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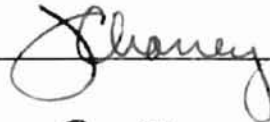
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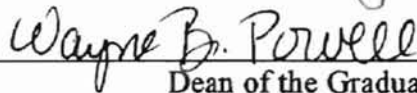
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CHAPTER I

INTRODUCTION

American surveys report that as many as 10% to 12% of all children have chronic illnesses of primary physical origins (Hobbs, Perrin, & Ireys, 1985). The majority of these children are presumed to be mildly to moderately affected by their illness while the remainder of the group are severely affected (Hobbs et al., 1985). Although recent advances in medical knowledge and technology have greatly extended the life expectancy of individuals with a chronic illness, there is a substantial lag in understanding and treating the psychosocial aspects of their disease (Herek, Levy, Maddi, Taylor, & Wertleib, 1990; Livneh & Antonak, 1997; Thompson & Gustafson, 1996). Such understanding should also focus on understanding the various processes associated with adaptation to a chronic illness, including parental adjustment factors, cognitive processes, method of coping, and family functioning (Chaney, Mullins, Frank, Peterson, Mace, Kashani, & Goldstein, 1997; Thompson & Gustafson, 1996).

Notably, a major dimension in which children and adolescents with chronic illnesses may differ from one another is that of disease-specific task demands (Hobbs et al., 1985). Those seeking to understand and/or treat chronically ill children need to have a basic understanding of the unique features, course, and medical interventions

related to each disease type. For example, specific treatments for glucose control in the management of Insulin-Dependent Diabetes Mellitus (IDDM) are in themselves additional stressors and experiences not shared by children and adolescents affected by other chronic illnesses. These task demands include dietary restrictions, exercise, and injections of insulin. Thus, chronic childhood illness is a well-recognized stressor for children and their families (Perrin & Mclean, 1988b).

Although the stressors and task demands associated with specific disorders vary (e.g., IDDM, sickle cell), it is estimated that children with a chronic illness have a risk for adjustment problems that is 1.5 to 3 times higher than their healthy peers (Pless, 1984). Those factors placing children at highest risk for adjustment difficulties appear to be those not necessarily related to illness severity [(i.e., duration of the illness, degree of functional impairment, parent adjustment, family functioning, and life stress) (e.g., Herek et al., 1990; Nelms, 1989; Pless & Roghmann, 1971)]. In addition, chronic childhood conditions also increase the risk for parental adjustment difficulties (Herek et al., 1990, Thompson & Gustafson, 1996). Therefore, continued research on psychosocial predictor variables is warranted because studying disease-specific aspects may help explain the broad and variable range of adjustment responses in both parents and children to chronic illnesses (Mullins, Chaney, Hartman, Olson, Reyes, & Blackett, 1995). In the current study, parent-child adjustment linkages will be examined in the context of a specific chronic illness, that of IDDM.

Insulin-Dependent Diabetes Mellitus (IDDM) is a disorder of the metabolic-endocrine system characterized by a defect in insulin secretion, elevation of blood glucose, and the development of long-term microvascular, macrovascular, and neuropathic changes

(Arslanian, Becker, & Dash, 1995). IDDM is thought to result from the auto-immune destruction of beta cells (i.e., the insulin-producing cells located in the pancreas. Although there is no known cure, medical advancements have been developed to improve the quality of life for individuals with IDDM. Most of these advancements have served the purpose of helping the individual with IDDM manage symptoms associated with the defect in their insulin action. However, relatively little significant advancement has been made with respect to understanding the psychosocial consequences of the disease (e.g., psychological adjustment, school adjustment). A review of the literature on the psychosocial effects of IDDM on children and adolescents suggests that research on this domain of the disease has lagged behind that of medical advancements (Livneh & Antonak, 1997).

Although research studying the effects medical complications have on the individual with IDDM is much needed, there is at the same time a need to further examine the psychosocial aspects of the disease. Specifically, research is needed to examine the family system, including the chronically ill child, and how systemic transactional factors may influence an individual's adaptation to chronic illness (Chaney et al., 1997). Family functioning, specifically parental factors, have frequently been linked to the psychological adjustment of a child or adolescent with IDDM (e.g., Chaney et al., 1997; Thompson, Gil, Burbach, Keith & Kinney, 1993b).

As might be expected, children with chronic illnesses who live in poorly functioning families have the highest incidence of adjustment problems (Thompson, Gustafson, Hamlett, & Spock, 1992a). Thompson et al. (1992a) suggest that this relationship may vary, however, depending on the nature of the child's illness. For example, in a study that pooled illness groups, Wallander, Varni, Babani, Banis, DeHann,

& Wilcox (1989) found that children with juvenile rheumatoid arthritis had fewer externalizing difficulties than other groups (e.g., IDDM, cerebral palsy, hemophilia). Breslau (1985) found that relative to healthy control children, children with chronic physical illness exhibited difficulties that included both internalizing- and externalizing-type problems. However, children with illnesses involving the brain had greater internalizing-type difficulties than did the children with illnesses not affecting the brain (Breslau, 1985). Further, it is argued that the severity of some illnesses (e.g., cystic fibrosis) may be so influential on the child's adjustment that family functioning is less influential than it is in milder illnesses such as asthma.

Thus, the interaction between family functioning and the chronically ill child involves a number of complex interrelationships. Thompson et al. (1992a), recognizing the multivariate nature of these interrelationships, developed the transactional stress and coping model to explain processes of coping and adaptation. The model is set within an ecological-systems theory and views chronic illness as a potential stressor to which the individual and family systems endeavor to adapt. The illness-outcome relationship is hypothesized to be a function of the transaction among biomedical, developmental, and psychosocial processes. Although illness parameters (i.e., disease type and severity) and demographic parameters (i.e., gender and age) are elements of the model, the focus is on patient and family processes that are hypothesized to further mediate the illness-adjustment relationship (Thompson Gil, Burbach, Keith & Kinney, 1993a). Thompson and colleagues (1993a, 1993b) have conducted a number of studies to assess adaptation to chronic illness using the transactional stress and coping model. Studies of this model include the investigation of the stability and change in adjustment, hypothesized

maternal, child and family mediational processes, and the interrelationships of these variables over time. Thompson's studies provide considerable support for the role of interactional or transactional processes in both maternal and child adjustment (Thompson & Gustafson, 1996). Specifically, across these studies of children with sickle cell disease, considerable support is provided for the relationship of specific parental adjustment variables (e.g., maternal anxiety, maternal stress) to child adjustment. Moreover, higher levels of maternal stress have differentiated stable poor from stable good child reported adjustment in IDDM populations (Livneh & Antonak, 1997). Such findings support the notion that parent adjustment is a strong predictor of child adjustment, and warrants the need to study the parent and child adjustment interaction in children with IDDM. Thus, the purpose of this research study is to expound on the research Thompson has conducted with other chronic illness groups and apply it to IDDM populations. Specifically, the study will examine specific, parental adaptational processes that may influence a child's adjustment to IDDM. Research should not only examine how the social-ecological context of the family is manifested in adjustment, but also the processes of caretaking and child rearing. The current study will examine discrete parental behaviors (i.e., parental overprotection and parenting stress) to both parent adjustment and child adjustment (e.g., depression). These predictor variables, subsumed under the concept of parenting factors, potentially affect not only the parents' and child's psychological adjustment, but also the cognitive and socio-emotional development of the child.

Certainly, an aspect of parenting practice that may effect the chronically ill child is parental overprotection. Parental overprotection as a construct has been poorly operationally defined, though such terms as overindulgent, oversolicitous, and

overanxious have been used interchangeably (Pinkerton, 1970). Nevertheless, there is a high degree of consistency in the views of those describing the genesis, existence, and the sequelae of parental overprotection of the chronically ill and handicapped child (Mattson, 1972). Mattson (1972) suggests that parents who remain anxious and guilt-laden about their chronically ill child tend to cope with their emotional distress by overprotection and intense pampering. Kasper (1978) also suggests that parental overprotection enhances the self-doubts and insecurities that the disabled process already possesses, while others (Pinkerton, 1970) view parental overprotection as a form of nonacceptance of a child's illness. More recently, Thomasgard and Metz (1993) suggested that overprotective behavior has different antecedents and consequences as compared with indulgent patterns of parent-child interaction. They further noted that measures of overprotection have either been retrospective accounts of perceived parental behavior or have been lacking in conceptual clarity. Thus, Thomasgard and Metz (1993) have proposed a new model of overprotection that incorporates a variety of factors. These factors include child, parent, family, socio-cultural, environmental, and resiliency factors. Notably, Thomasgard and Metz's (1993) investigation of parental overprotection did not specifically investigate the impact of these variables on child adjustment to a chronic illness. However, they speculate that parents of chronically ill children are more likely to exhibit overprotective behaviors, and that these behaviors in and of themselves could contribute to a child's adjustment to a chronic illness. Therefore, studies are warranted to further determine if there is a relationship between overprotective behaviors and child adjustment to a chronic illness. In addition to parental overprotection, parenting stress may be another factor that helps predict adjustment to childhood chronic illness. In terms of parental and child functioning,

recent research suggests that both mothers and siblings of chronically ill children exhibit increased levels of stress and maladaptation (Thompson, 1986). Other research on IDDM has addressed the linkage among parental distress, stress and parenting styles on the child's cognitive and social development (Livneh & Antonak, 1997). Increased stress levels have been found to be associated with less optimal parent and family functioning, and thus, lower child developmental competence. In a similar vein, Thompson and colleagues (1993a) found that daily stresses, apart from those related to caring for an ill child, related to emotional distress and family dysfunction in mothers of chronically ill children with cystic fibrosis and sickle cell disease. With illness and demographic parameters controlled, significant increments in variance were accounted for by the palliative coping ratio, stress of daily hassles, and emphasis on control in the family. Notably, such research did not address stress associated with parenting per se, but rather on external macro-and micro stressors.

In summary, there is an increased need to understand the specific mechanisms of adaptation to chronic illness by chronically ill children and their parents. Studies have shown that certain global adjustment variables (i.e., maternal anxiety) contribute to child adaptation, along with illness and demographic variables, yet a significant amount of the variance in adaptational processes still remains unaccounted (Thompson et al., 1993a). Such unaccounted variables may include more discrete parent-related variables, such as child rearing and caretaking practices (i.e., parental overprotection and parenting stress). It is important to determine whether understanding the role these variables play in adaptation can enhance a better understanding of adaptation to chronic childhood illness. Further, if parental variables are salient predictors of child maladjustment, then

intervention programs (i.e., parenting skills workshops) can be developed and enhance adaptation to childhood chronic illness.

Using Thompson's model of transactional stress and coping (1993a), the current study was designed to determine how parental overprotection and parental stress contribute to the variance in psychological distress in both parents and children with IDDM. Thus, the current study addressed the following questions:

Are higher levels of parental overprotection associated with increased levels of depression in children and adolescents with IDDM?

Are higher levels of parenting stress associated with increased levels of depression in children and adolescents with IDDM?

Are higher levels of parental overprotection associated with increased maternal depression?

Are higher levels of parenting stress associated with increased maternal depression?

When demographic and disease severity variables are controlled, what is the relative contribution of both parental overprotection and parenting stress to both maternal and child depression?

The current study also explored the influence of disease severity, demographics, and age differences in our sample of children with IDDM. These variables were investigated for both theoretical reasons and because they have been shown to relate to adjustment in previous studies of diabetes and other chronic illnesses (Herek et al., 1990; Livneh & Antonak, 1997; Thompson & Gustafson, 1996).

CHAPTER II

REVIEW OF LITERATURE

Overview of the Chronic Illness Literature

It is estimated that the total incidence of children with a chronic illness ranges from 10% to about 12% in the U.S. population, with some variation due to differences in survey methods, sample location and characteristics and timing of studies (Hobbs et al., 1985). Thus, approximately 7.5 million children and adolescents are affected by a chronic illness at any given point in time. The majority of these children (75%- 80%) are presumed to be mildly to moderately affected based on physiologic aspects of the disease itself, need for medications and other forms of treatment, and disruptions in daily life activities. If overall impairment of functional status is used as an index of severity (i.e., seriousness of physical and intellectual impairment), 20% - 25% of all chronically ill children are significantly affected (Newacheck, Budeeti & Halfon, 1986).

Further, Haggerty (1984) has specified that as many as one million children and adolescents in the U.S. have a severe chronic illness that requires ongoing, comprehensive medical care. Another 10 million chronically ill children with less serious chronic conditions may be in need of regular monitoring and specialized care. Research has shown that approximately one-third of chronically ill children receive all their medical care from

subspecialists (Stein, Jessop, & Reismann, 1983), with less than 20% receiving care in both primary and subspecialty settings (Perrin & Ireys, 1984). However, most children with chronic illnesses receive regular medical in the primary pediatric or general practice setting. Other studies suggest that up to one-third of chronically ill children do not receive regular medical care at either primary or subspecialty levels and less than 20% receive any social or mental health services (Walker, Gortmaker & Weitzman, 1981; Cadman, Boyle, & Offord, 1986).

Further analysis of patient utilization of the health care service delivery system reveals that families with chronically ill children typically do not receive comprehensive psychosocial support within traditional medical settings, despite a general awareness and acceptance of its' importance in such cases (Stein et al., 1983). Children with less prevalent or lesser known disorders often do not have any specialized services available outside of the medical setting, and thus caretakers are often left to their own resources to construct a comprehensive health care system to meet the child's psychosocial and medical needs.

From an educational perspective, chronically ill children receive a disproportionately greater amount of special education services in the U.S. However, the actual numbers of children in need of such services may be minimized through exclusion by public or private school systems that do not regard acute or chronic illness as a legitimate special education category (Pless & Roghmann, 1971). For example, children with low school attendance due to disease exacerbations may not receive additional educational services (i.e., tutoring, modified teaching techniques, etc.) and may fall through the cracks in both school and health care systems.

Pless and Roghmann (1971) highlighted the need for the development of an array of both specific and general health care delivery services for chronic illness over 25 years ago. However, progress in this area has been extremely slow, especially in rural and impoverished areas, inner-city locations, and with those diseases that have smaller prevalence rates or which require highly specialized medical care (Hobbs et al., 1985). This process has been retarded by lags in the development of suitable reimbursement schemes, deficiencies in professional training, and ongoing problems with identifying those providers and health care systems that are best equipped and most predisposed to address these issues (Garrison & McQuiston, 1989).

Although problems persist with the delivery of health care services to chronically ill children, it should be noted that the mortality rates of such diseases have stabilized during the past 30 years. The efforts of medical science and clinical practice have led to greater longevity for many children affected with more serious chronic illnesses, such as sickle cell disease, cystic fibrosis and IDDM (Daniels, Moos, Billings & Miller, 1987). Child and adult morbidity (the range of physical and functional consequences of an illness) however, are a more significant problem than mortality. Variation in morbidity patterns across disease groups is influenced by the range of severity of the particular disease, the specific organs or physical capacities which are affected, and a host of other factors that characterize the individual case (Hobbs et al., 1985).

Researchers have also focused on an examination of the psychological sequelae of childhood chronic illnesses. A broad range of psychosocial correlates and presumed outcomes of childhood chronic illness have been noted in a variety of surveys and clinical reports (e.g., Garrison & McQuiston, 1989; Goodnick, 1997; Livneh & Antonak, 1997;

Thompson & Gustafson, 1996). The severity of disease and its concomitant impact on the child's level of functioning has often, but not always, emerged as a predictor of increased levels of stress and subsequent psychological sequelae (Daniels et al., 1987). However, disease severity and functional status alone do not account for the considerable variation that has been observed across disease types or even individual children with the same chronic illness (e.g., Steinhausen, Schindler & Stephan, 1983; Thompson et al., 1993b). Among the array of psychosocial correlates and outcomes found in current research, family functioning, coping style, cognitive appraisal mechanisms, overall levels of life stress, the presence of additional chronic conditions, preexisting personological characteristics of the child and caregivers, and sociodemographic variables have all been suggested as mediators of the relationship between chronic illness and psychosocial adjustment in children and their parents (e.g., Chaney et al., 1997; Eiser, 1990; Mullins et al., 1995; Thompson et al., 1993b; Wallander & Varni, 1992).

The assumption that psychological or psychiatric disorder is quite common in those persons affected by chronic illness has been called into question both in the child and adult health psychology research literature (e.g., Cassileth, Lusk, Strouse, Miller, Brown, Cross, & Tenaglia, 1984; Drotar, Doershuk, Stein, Boat, Boyer, & Matthews, 1981). It should seem clear that there is no direct or simple relationship that exists between having chronic illness and psychosocial maladaptation. Rather, a wide range of adaptational outcomes to this source of life stress is more typical (Kashani, Barbero & Bolander, 1981). Although there is a considerable evidence to suggest that there are higher rates of depression and anxiety-related symptomatology in adults with chronic disease, the effects on children are less clear (Kashani et al., 1981; Cadman, Boyle & Offord, 1988). Several

studies have reported an elevated risk likelihood for samples of chronically ill children, as compared with unaffected children, for child and family psychological upset and diagnosable psychiatric disorders (Breslau, 1985; Stein & Jessop, 1984). However, the estimates of the increase in risk likelihood range from a doubling of the rate observed in the physically well population to a more than tenfold increase, again depending upon the particular measures and sampling techniques used in the various studies (Stein & Jessop, 1984).

The safest conclusion based on the current research is that a subsample of children with chronic illnesses is indeed at an increased risk for behavioral and emotional difficulties (Thompson, Gil, Gustafson, George, Keith, Spock, & Kinney, 1994). These children seem to be particularly at risk for internalizing difficulties or a combination of both internalizing and externalizing difficulties. More specifically, on the basis of structured diagnostic interviews, it appears that anxiety-based disorders are the most frequent, although milder forms of externalizing problems such as oppositional disorders are evident in some illnesses and age groups (Brown, Kaslow, Sansbury, Meacham & Culler, 1991). Children with illnesses that affect the central nervous system may be at particular risk for behavioral or emotional adjustment difficulties (Garrison & McQuiston, 1989).

Although anxiety-based disorders are the most frequently reported problems seen in children with chronic illness, current research also seems to suggest that depression is another internalizing disorder that may affect a child's adjustment to a chronic illness, specifically IDDM. According to Goodnick (1997), children with diabetes have approximately a 25 percent lifetime risk of suffering an episode of depression, noting that

depression potentially has a tremendous impact on the course of IDDM. The helplessness and hopelessness that characterize depression may make it more difficult, and often impossible, for diabetics to be compliant (i.e., take medications on schedule, manage diet, exercise). As a result, depression is strongly associated with high blood glucose levels, and an increased risk of all acute and chronic diabetes complications (Goodnick, 1997).

In a longitudinal study by Kovacs and colleagues (1990), 92 children between the ages of 8 and 13 who had been hospitalized at IDDM onset were followed over time, with mental health assessments on these children and their mothers conducted at least once a year for 10 years. Their findings indicated that almost half of diabetics under age 20 were affected by either depressive- or anxiety-related symptoms (Kovacs, Iyengar, Goldston, Stewart, Obrosky, & Marsh, 1990).

Kovacs and her colleagues (1990) further found that the most common mental health problem noted was depressive symptoms, which affected approximately 27 percent of the diabetic youngsters, compared with 9 to 16 percent in the general population. Depressive symptoms were most likely to develop during the first year after diagnosis. Symptoms of anxiety were documented in 12 percent of the population as compared to a 5 to 8 percent in the general population. Psychological distress in the mother increased the risk for anxiety and depression among their children, especially for depression. It was also found that the earlier the onset of the disturbance (e.g., depressive, anxiety), the higher the likelihood that additional mental health problems would present later in life for the child (e.g., phobias, eating disorders). Significantly, there were no gender differences in the types of mental health problems the diabetic children displayed (Kovacs et al., 1990). Thus, although many young people may be able to cope with IDDM without developing

psychological symptoms, the extant data suggests that such chronic medical conditions typically increase the risk of emotional and behavior problems, particularly depression. These problems have the potential to complicate medical management and therefore, must be identified and appropriate intervention dispensed.

In addition, there has been a paucity of research examining the stability of behavioral and emotional adjustment over time. The few existing longitudinal studies have demonstrated that stability in adjustment in children with a chronic illness is only moderate; there is considerable change across time at the individual level in the presence or absence of a behavior problem or diagnosis, particularly in terms of specific diagnoses and behavior problems (Thompson & Gustafson, 1996). In summary, future research should elucidate the factors that place children at risk for stable poor adjustment in the face of chronic illness. One such factor is how IDDM acts as a stressor, specifically as it concerns determining the extent to which it affects parental adjustment, and subsequently, child adjustment to IDDM.

Overview of Insulin-Dependent

Diabetes Mellitus

Etiology and Description

Insulin-dependent diabetes mellitus (IDDM) affects 1.6 per 1,000 school-age children and appears to affect boys and girls equally (Silverstein, 1994). IDDM is a disorder of the metabolic-endocrine system characterized by a defect in insulin secretion, elevation of blood glucose, and the development of long-term microvascular,

macrovascular, and neuropathic changes (Arslanian et al., 1995). IDDM is thought to result from the auto-immune destruction of beta cells (i.e., the insulin-producing cells located in the pancreas). The hypothesized pathogenesis for insulin-dependent diabetes mellitus is that a genetically susceptible person experiences multiple toxic or infectious insults to the beta cells. This causes an overreaction of the immune system, and antibodies cause destruction of beta cells, which result in insulin deficiency (Arslanian et al., 1995).

Manifestation and Course

The diagnosis of IDDM most often occurs in two periods: between the ages of 5 and 6 and between the ages of 11 and 13 (Johnson, 1988). The majority of patients diagnosed with IDDM experience an acute onset of symptoms that persist over several days or weeks. However, small proportions of patients experience intermittent or mild symptoms for several months (Arslanian et al., 1995). Onset symptoms can include fatigue, thirst, hunger, frequent urination, and weight loss despite constant eating. IDDM is a progressive disease. Chronic complications typically occur in young adulthood or beyond and include retinopathy, neuropathy, nephropathy, and accelerated cardiovascular disease (Arslanian et al., 1995). Life expectancy is one third less than that of the normal population (Silverstein, 1994). There is also evidence that the onset of diabetes before five years of age may be associated with poorer cognitive performance (Rovert, Ehrlich, Czuchta, & Akler, 1993).

Treatment

The goal of treatment is to keep the blood glucose levels as close to normal (80-120mg per 100ml before meals) as possible through the exogenous administration of insulin (Silverstein, 1994). However, it is very difficult to mimic the normal pancreatic function of balancing insulin and glucose levels. The interactions among diet, exercise, illness, emotional state, and insulin make blood glucose regulation difficult. Daily treatment tasks include blood glucose monitoring, dietary constraints, injections of insulin, and learning how to balance energy demands and insulin needs. The lifestyle behavior changes required to manage diabetes are lifelong.

Due to the daily treatment tasks that must be accomplished and the difficulty maintaining metabolic control, adherence can be a major issue (Livneh & Antonak, 1997). In particular, adolescence is frequently a difficult period because of the impact that the illness has on self-esteem and social and educational experiences and because of the interaction between illness and developmental tasks (Livneh & Antonak, 1997). For example, having to adhere to the lifestyle changes required by IDDM complicates accomplishing the developmental tasks of identity, competency, and autonomy.

Stress and Coping Model of IDDM

Traditionally, there have been three perspectives in which the relationship between stress and IDDM has been viewed (Herek et al., 1990). The first relationship views stress as a cause or trigger of IDDM. The second perspective identifies stress as a factor in disease course or outcome. The third and last perspective views IDDM as a stressor in

and of itself. To date, findings that investigate these three relationships have been inconsistent, but because of recent conceptual and methodological advances, interest in these relationships has not waned (Bradley, 1988).

From a conceptual perspective, the current study is focused on the last relationship, that is, IDDM as a stressor. The purpose of the study is to better understand how IDDM impacts family functioning, specifically parental adjustment through different parental variables (i.e., parental overprotection, parenting stress) and how this ultimately influences the child or adolescent's adjustment to IDDM. Specifically, IDDM will be studied in terms of how it is a stressor in the transactional stress and coping model.

The transactional stress and coping model, developed by Thompson and colleagues (Thompson, 1985; Thompson et al., 1993a, 1993b; Thompson et al., 1992a), is set within ecological-systems theory. In this model, chronic illness is viewed as a potential stressor to which the individual and family systems endeavor to adapt. The illness-outcome relationship is hypothesized to be a function of the transactions among biomedical, developmental and psychosocial processes. Although illness parameters (i.e., the type of illness and its severity) and demographic parameters (i.e., gender, age, and socioeconomic status) are elements of the model, the focus is on patient and family processes that are hypothesized to further mediate the illness - outcome relationship over and above the contributions of illness and demographic parameters (Thompson et al., 1993b).

Within an ecological-systems theory perspective, it is hypothesized that the psychological adjustment of children is affected by levels of stress and symptoms experienced by other family members (Thompson & Gustafson, 1996). Importantly, adjustment is considered in terms of both maternal and paternal adjustment and child

adjustment and their interrelationship. Notably, Thompson's model has not necessarily taken into account more specific parenting variables that may affect the adjustment of children and adolescents to chronic illness. In other words, such research did not investigate the more discrete aspects of parent-child interactions, but rather has focused on broad band aspects of parent-child adjustment. In addition, these studies were not conducted with diabetic populations of children with diabetes.

Based on existing research, it is possible that Thompson's psychosocial mediational processes apply to children with IDDM. Children with IDDM, like those with other chronic illnesses, face numerous stressors as they endeavor to adapt to the complications of a chronic illness. The extant research (Kovacs et al, 1990; Livneh & Antonak, 1997) on psychosocial implications of IDDM suggests that the psychological adjustment in this population is guided by similar psychosocial mediational processes as those documented by Thompson and Gustafson (1996). Despite this research, there has been a failure to recognize the frequency or the specific psychosocial implications of IDDM [(i.e., depression, anxiety, low self-esteem)(Barbarin, Whitten, & Bonds, 1994; Stein & Jessop, 1984). Therefore, there is a need for studies investigating the domains in which dysfunction may occur. These domains include psychological functioning (i.e., anxiety, depression), academic functioning (i.e., poor grades, school dropout), social functioning (i.e., isolation and poor relations with peers), and family functioning [(i.e., poor relations with parents and siblings)(Livneh & Antonak, 1997)].

Psychosocial Adaptation to IDDM

Early studies indicate that the onset and chronic course of IDDM have been associated with increased anxiety, depressive mood, social withdrawal, rebelliousness, insecurity, and denial among children (Gath, Smith, & Baum, 1980; Koski, 1969). Several clinical accounts exist that imply that anxiety, depression, social isolation, and possible mood swings may be more prevalent among individuals with IDDM than in the general population, but not more so than in individuals with other chronic illnesses (Denolin, Appleboom-Fondu, Lemeire, & Dorchy, 1982; Dunn & Turtle, 1981). Some of the symptoms may be developmentally related (e.g., exacerbated during adolescence), or may mimic symptoms associated with hyperglycemia or hypoglycemia (e.g., irritability, psychomotor retardation, fatigue). In addition, psychogenic causation theories (i.e., the view that certain personality or family attributes and disturbances predispose one to develop IDDM) have been postulated to further account for an individual's reaction to IDDM.

More recently, empirical studies of IDDM typically have addressed one of two issues, including the prevalence of psychiatric disturbances among samples of individuals with IDDM (Livneh & Antonak, 1997) and comparisons of personality attributes and emotional reactions between samples of persons with IDDM and control groups [(e.g., sample from the general population, samples of persons with other chronic illnesses)(Livneh & Antonak, 1997)].

In one of the earliest comprehensive studies, Swift, Seidman, & Stein (1967) concluded that based on psychiatric interviews, objective testing, and projective testing of

children with IDDM and control group children, the sample of children diagnosed with IDDM manifested more psychiatric and behavioral symptoms. These symptoms included dependence-independence imbalance, less adequate self-concept, greater anxiety, more hostility, and poorer social and home adjustment. Other findings have lent partial support to the Swift et al. study. Gath and colleagues (1980) reported that 18% of their sample of children with IDDM was recognized as having a psychiatric disorder, typified as neurotic and conduct behavior types. Based on psychiatric interviews, Grey, Cameron, and Thurber (1991) concluded that both anxiety and depression were common responses in their sample of adolescents with IDDM. Furthermore, scores from a general interview-based psychological adjustment scale with parents classified 55% of their children with IDDM as manifesting moderate to severe psychological adjustment. The psychiatric disorders, diagnosed from parental report, included both anxiety and depression. Such diagnoses, however, were conceptualized by the authors as adjustment disorders associated with the stress of having developed the disease. Still, their findings support previous research by Swift et al. (1967), and suggest that children with IDDM have an increased risk of experiencing psychiatric problems because of their chronic illness. However, their results are not without shortcomings, particularly the lack of use of standardized measures to assess psychiatric problems.

Other studies have utilized standardized ratings (i.e., Child Behavior Checklist) to explore adjustment disorders among children with IDDM. Lavigne, Traisman, Marr, & Chasnoff (1982) reported that male children with IDDM were more likely to manifest affective symptoms than were control children, particularly in the area of symptom internalization (i.e., tendencies of schizoid, depressive, and obsessive-compulsive nature)

and to a lesser extent in symptom externalization (i.e., aggression). Other studies support these findings. In comparison to their siblings, children with IDDM evidenced elevated scores on both the internalizing (e.g., depression, anxiety) and externalizing (aggression) scales of the Child Behavior Check List (Rovet, Ehrlich, & Hoppe, 1987). This was particularly evident for boys with IDDM onset after four years of age. The majority of the late-onset boys had profiles resembling those of "schizoid" children (e.g., anxious, fearful, shy). Both early- and late-onset boys also scored lower, but not significantly so, on the Piers-Harris Children's Self-Concept Scale than their siblings. Similarly, on the Goodenough-Harris Drawing test, late-onset boys drew more defective human figures than girls with IDDM and siblings without IDDM, suggesting impairment in body image of development. Overall, these findings support previous data suggesting that children and adolescents with IDDM have an increased predisposition to develop psychiatric problems because of their chronic illness.

Finally, the results of studies of ego development among children and adolescents with IDDM have suggested that (1) youngsters with IDDM were at lower levels of ego development (using Loevinger's Sentence Completion test) than control group youngsters, but at higher levels than young persons with psychiatric disorders; (2) girls with IDDM were at higher levels of ego development than boys; (3) self-esteem was more impaired among adolescents with IDDM; and (4) adolescents with IDDM used more suppression in comparison to adolescents with psychiatric disorders and adolescents without IDDM (Hauser, Jacobson, Noam, & Powers, 1983; Jacobson, Beardsless, Hauser, Noam, Powers, Houlihan, & Rider, 1986).

In summary, empirical studies of IDDM in children have sought to determine

whether IDDM is associated with increased adjustment difficulties. The overall findings suggest that IDDM predisposes a child or adolescent to psychiatric problems. The prevalence of psychiatric problems has often been used as an index of adjustment, and it would appear that children and adolescents with IDDM manifest these problems at a rate higher than that found in the general population. Although such findings have been consistent, caution is still warranted when interpreting these studies. Consistently, there has been the lack of use of standardized measures and sound methodology, two factors that may undermine the credibility of such investigations.

Characteristics Associated With Adaptation to IDDM

A large body of research also exists on the relationships between child adaptation to diabetes mellitus and sociodemographic, disability-related, psychological, and environmental variables. Two of the most frequently investigated sociodemographic variables have been sex and age. Most available research suggests that whereas boys demonstrate more adjustment and behavioral problems, girls report more anxiety and poorer body image (Hamburg & Inoff, 1983; Rovet et al., 1987). Sex differences also show differential interaction effects with age of onset and personality attributes such as locus of control (Hamburg & Inoff, 1983; Ryan & Morrow, 1986). Research on age at onset of IDDM also appears to support strongly the conclusion that children whose diagnosis was made at a later age demonstrate more psychosocial adjustment problems, lower acceptance, more negative self-esteem, and elevated behavioral problems than children with an early age of diagnosis (Allen, Tennen, McGrade, Affleck, & Ratzan,

1983; Anderson & Ekdahl, 1992). Metabolic control and adherence to treatment (i.e. compliance with diet and metabolic monitoring) also appear to worsen with increased age (Grey et al., 1991). A possible reason for this finding could be the time periods that diagnoses of IDDM are typically made. Early-onset IDDM occurs between five and six years, whereas late-onset occurs between eleven and thirteen years of age. It appears likely that the older child has a more difficult time adjusting to this period (onset period) of emotional upheaval because they cognitively experience the shock, disbelief, and lack of emotional acceptance that accompanies being diagnosed with IDDM after a period of normal development.

In addition to the variables mentioned before, socioeconomic status and education have been researched, but far less thoroughly. Of the studies that investigated these variables, the data have revealed that a positive relationship exists between higher levels of socioeconomic status and education and general psychosocial adaptation and control of IDDM (Hanson, DeGuire, Schinkel, Henggeler, & Burghen, 1992; Kovacs et al., 1990; Kvam & Lyons, 1991). Although the findings from these studies have been consistent in establishing a positive relationship between socioeconomic status and education as it is correlated with adaptation, it must be cautioned that these variables have not been investigated as thoroughly as other sociodemographic variables (e.g., sex, age).

Disease-related variables have also been studied to investigate their relationship to psychosocial adaptation to IDDM. Unlike sociodemographic variables, the studies that have investigated these variables have been largely inconsistent (Livneh & Antonak, 1997; Herek et al., 1990). Duration of the disease has been found by most researchers to be unrelated to reports of psychosocial adaptation, although it may be curvilinearly related to

possible curvilinear relationship between health locus of control and metabolic control, (i.e., both higher levels of externality and internality were associated with poor glucose control).

Research on measures of self-concept typically indicate that the more positive one's self-concept, the more positive their psychosocial adaptation to IDDM. This is especially true among young children (Grey et al., 1991; Jacobson et al., 1986). Jacobson and colleagues (1986) studied the psychological adjustment in children with recent-onset IDDM and compared them with a group of patients characterized by recent acute medical problems (e.g., fractures, injuries, infections) that necessitated changes in daily activities. No significant between-group differences were found in self-esteem or self-reports of behavioral symptoms, although the patients with IDDM reported a lower sense of scholastic competence than did the patients with acute medical problems. Children with IDDM were rated by their mothers as having more internalizing symptoms than were the children with acute medical problems, although when SES was controlled, group differences on internalizing symptoms were no longer significant (Wertlieb, Hauser, & Jacobson, 1986). A similar association was generally reported between positive self-concept and measures of compliance and metabolic control (Anderson, Miller, Auslander, & Santiago, 1981). However, Kovacs et al. (1990), in their longitudinal study, failed to detect any relationship between self-esteem and metabolic control over a six-year period.

The relationships between measures of independence, self-efficacy, social competence, and adaptation to IDDM have also been investigated. Of the limited data available, it has been consistently found that successful psychosocial adjustment (including more positive self-esteem) may be related to higher degrees of independence

(Grey et. al., 1991) and better handling of dependence-independence conflicts among adolescent girls (Sullivan, 1979). Similarly, successful adjustment and better adherence and metabolic control appear to be related to self-efficacy (Wysocki, Hough, Ward, & Green, 1992), perceived competence (Jacobson et. al., 1986), and social competence (Hanson, Henggeler, & Burghen, 1987a). Thus, social competence may act as a buffering variable, such that under stressful situations, high social competence attenuates the relationship often found between stress and poor metabolic control (Hanson et. al., 1987a).

Lastly, a psychosocial variable that has also received increased attention in the research literature is coping style. Research on coping with the stress of living with a chronic illness has emphasized the more stable properties of the individual and the psychosocial and physical environments (Pollock, 1989). Yet, results from studies that have focused on the role of coping modes in psychosocial adaptation to IDDM and in maintaining metabolic control are inconsistent. Some studies suggest that increased use of coping strategies in general (i.e., using active and avoidance modes of coping) is associated with poor metabolic control (Delamater, Kurtz, Bubb, White, & Santiago, 1987). However, other research has indicated quite different findings. Studies by Peyrot & McMurry (1985) and Kvam & Lyons (1991) suggest that persons with IDDM who use more constructive or mature coping modes (e.g., problem-solving, seeking professional support) show better adherence to a medical regimen and better metabolic control than persons with IDDM who use nonconstructive coping modes (e.g., denial, wishful thinking) (Delamater et. al., 1987; Grey et. al., 1991). Secondly, the research suggests that persons using more active, problem-focused coping strategies demonstrate more

been found to be associated with a lower adherence to the prescribed therapeutic regimen and poorer metabolic control (Eaton, Mengel, Mengel, Larson, Campbell, & Montague, 1992). In addition to lower adherence to one's regimen, feelings of anger, hostility, and interpersonal conflicts have also been linked with poorer metabolic control (Karlson et al., 1988; Peyrot & McMurry, 1985). The findings of these studies strongly suggest that poor regimen adherence and diabetic control are linked to psychiatric symptomatology and poor general psychosocial adaptation.

The relationship of perceived stress and metabolic control has been extensively investigated. Stress may impede adherence to therapeutic regimen, thus interfering with metabolic control (Fisher, Delameter, Bertelson, & Kirkley, 1982). On the other hand, chronic poor glucose control might have a negative impact upon general functioning, thus lowering body resistance to both internal and external stresses (Delameter et al., 1987). Positive relationships between increased levels of stress (e.g., daily hassles, negative life events) and poorer metabolic control have been reported consistently in the literature (Barglow, Hatcher, Edidin, & Sloan-Rossiter, 1984; Hanson et al., 1987a).

In summary, the above mentioned studies have investigated several broad sets of factors (e.g., sociodemographic, disease-related) to determine their possible influence on child adjustment to IDDM. Of the factors investigated, there have been relatively consistent findings in regard to how sociodemographic variables impact child adjustment. However, with respect to the other factors (e.g., disease-related, personality, psychological), there have been more inconsistent findings in how they influence child adjustment. This inconsistency suggests the need to further investigate these factors, in addition to variables that may account for additional. Specifically, factors that stem from

the family environment or ecosystem should be investigated. One such family environment factor is parent adjustment.

Parent Adjustment and Chronic Illness

Whereas parents of chronically ill children must cope with extraordinarily difficult life circumstances (e.g., financial concerns, demands of caretaking), it is not surprising that they may find the experience stressful. Subjective feelings of depression and worry are common features of parental response to chronic illness (Koocher & O'Malley, 1981; Pless & Satterwhite, 1973). The subjective stress of a chronic illness on parents has been described in the research literature, but the specific effects on parental mental health are less well understood. Tropauer, Franz, and Dilgard (1970) also documented the presence of maternal depression and guilt, but found that most mothers were able to perform effectively despite the stresses with which they were faced.

The Isle of Wright study (Rutter, Tizard, & Whitmore, 1970), one of the major epidemiological studies of chronic illness, included an assessment of maternal mental health. Maternal mental health was assessed through the completion of a 24-item malaise inventory on a subgroup of mothers of children with physical or psychiatric illnesses. No data was provided on the types or rates of psychological adjustment in the mothers of physically impaired children, but comparisons were made among the types of child physical impairment and between mothers of children with physical and psychiatric illnesses. No significant differences in the mean scores on the 24-item malaise questionnaire were noted among the mothers of children with different types of physical impairments. However, mothers of children with physical impairments had significantly

lower mean malaise scores than did mothers of children with diagnosed psychiatric illnesses (Thompson & Gustafson, 1996). A notable shortcoming of this research was that information about parental adjustment was based on self-report only.

Unfortunately, there has been only one other major epidemiological study of the psychological adjustment of parents of children with a chronic illness. The data used for the study was obtained from the Ontario Child Health Study (OCHS) and was used to compare the demographic features, individual parent mental health factors, and family functioning of families with a child with chronic health problems to those of families of well children (Cadman, Rosenbaum, Boyle, & Offord, 1991).

The findings of the OCHS study indicated that mothers of children with a chronic health problem had significantly higher maternal negative depression scores (based on the General Functioning Scale of the Family Assessment Device). Rates of parent-reported mental health treatment (i.e., depression, anxiety) among mothers and fathers of chronically ill children were two to three times higher than those parents of well children, which was a significant difference. However, there appeared to be no significant differences between groups on depression of number of single-parent families, social isolation, or alcohol problems. The investigators concluded that the data did not support the belief that families of chronically ill children functioned differently or were more distressed than those with well children (Cadman, et al., 1991). However, the primary limitation of their study was the use of survey measures to assess adjustment and family functioning.

Most information about parental adjustment emerges from studies with samples comprised of one specific chronic illness or pooled samples of several illnesses. One such

study assessed maternal depression in mothers of children with diabetes, cystic fibrosis, or mental retardation in contrast to healthy children (Walker, Ortiz-Valdes, & Newbrough, 1989). Results indicated that the level of self-reported depression was not significantly higher for mothers of children with a chronic illness. Controlling for socioeconomic status (SES) and child illness, lack of employment outside the home was associated with higher maternal depression (Walker et. al., 1989).

In summary, these studies demonstrate that parents, as well as their children, must adjust to IDDM, and that this adjustment process can be problematic for a subset of parents. The studies have typically investigated the global stress that a chronically ill child poses for his/her parents. Most studies assessed parents of chronically ill children to determine if they (the parent) were at a higher risk for psychiatric problems. Even though the results of the studies varied, the most salient finding that consistently emerged was that a significant number of parents do evidence adjustment problems. This finding suggests the need to research the impact of parent adjustment on family functioning, and more specifically, on child adjustment. The next section reviews the current research on family functioning and child adjustment.

Family Functioning and Child Adjustment to IDDM

Family functioning has received considerable attention in studies on children's adjustment to a chronic illness. Although empirical investigations of family factors (e.g., level of cohesion, parental support) and childhood chronic illnesses are still relatively rare as compared to studies of individual adjustment, available studies have underscored the

central importance of the family context as an influence on chronically ill children's mental health. For example, Pless, Roghmann, and Haggerty (1972) compared a sample of chronically ill children and a matched group of physically healthy children on a comprehensive battery of measures including responses from the child, parents, and teachers and an index of family functioning. Chronically ill children with the greatest risk for psychological impairment as judged by a composite index were from families with lower family functioning scores. Hence, family functioning was shown to be an important mediator of adjustment and one that operated in concert with other variables to affect individual adjustment (Pless et al., 1972).

Kucia, Drotar, Doershuk, Stern, Boat, and Matthews (1979) examined family problem-solving and the relationship to child adjustment. Their results indicated that families of well-adjusted children (as judged by physician and parent ratings) demonstrated more creative solutions to problem-solving tasks than those of maladjusted children. The association of family creativity with positive adjustment is consistent with studies which indicate that families of well-adjusted children are more able to consider alternatives than those of poorly adjusted children (Odom, Seeman, & Newbrough, 1971). In addition, fathers of the well-adjusted children displayed more creativity and positive support than those of maladjusted children. This pattern, which occurred in families of male children but not females, suggests that paternal flexibility and support may have been particularly important to the adjustment of boys (Odom et. al., 1971). Finally, this study was noteworthy for the absence of differences in positive support or communication between families of well-versus poorly adjusted children and the fact that the families of maladjusted children had higher success scores than those with adjusted children. This

study thus demonstrated that there is no simple relationship between children's maladjustment and the family transaction.

A similar finding emerged in Johnson's (1980) study of family concept and childhood adjustment comparing children with IDDM, emotionally disturbed children, and physically healthy children. Johnson found a strong relationship between individual adjustment and perceptions of family across the entire sample. Specifically, Johnson found that maternal, paternal, and siblings' ratings for family satisfaction were significantly related to their own individual adjustment. Johnson's (1980) findings also contrast with clinical descriptions of families of chronically ill children as conflict ridden or ineffective and indicate that chronic childhood illness does not inevitably disrupt individual adjustment or family effectiveness.

Other research with child diabetic populations consistently substantiate the notion that in families of youth with IDDM, high levels of disengagement (poor cohesion) and a high degree of enmeshment (exaggerated cohesion) are linked to poor adherence and metabolic control (Anderson et al., 1981). Cohesion has also been linked to poor psychosocial adjustment, including behavioral problems, depression, and the use of avoidant coping styles (e.g., Grey, Genel, & Tamborlane, 1980). In a similar vein, positive family climate, as evidenced by high levels of adaptability, flexibility, encouragement of independence and personal growth, communication patterns, and support, was consistently associated with both successful adherence and metabolic control (Eaton et. al., 1992) and psychosocial adjustment or higher self-esteem (Hauser, Jacobson, Wertlieb, Brink, & Wentworth, 1985).

Hanson et. al. (1992) sought to investigate whether general family relationships (e.g., marital satisfaction, family affection, cohesion, adaptability) and diabetes-specific family relationships (e.g., the family's specific behaviors relative to IDDM) related to a youth's illness-specific psychosocial adjustment (e.g., acceptance of illness), general psychosocial adjustment (e.g., self-esteem, behavior problems), and health outcomes (e.g., adherence to treatment, metabolic control). Participants included 95 youth diagnosed with IDDM and their parents. Results indicated that both illness-specific and general family relations (family adaptability) contributed significantly to dietary adherence after sociodemographic variables were controlled for and that both illness-specific and general family relations significantly predicted participants' general psychosocial adjustment (Hanson et. al., 1992).

Finally, the longitudinal linkage between parent adjustment and child adjustment has been examined (Chaney et al., 1997; Grey et. al., 1980; Jacobson & Hauser, 1986). Jacobson and Hauser (1986) investigated the linkage between parent adjustment and child adjustment by looking at specific parenting variables and how they impacted child adjustment to IDDM. Their findings suggested the existence of both rejection and neglect, and conversely guilt and overprotection among parents of poorly controlled children with IDDM (Jacobson & Hauser, 1986). Furthermore, the families in their study were also marked by overprotectiveness, extreme rigidity, overindulgence, control, perfectionism, and poor ability to resolve problems.

Mullins and colleagues (1995) investigated the relationship between maternal and child emotional adaptation across and within samples of children with IDDM and cystic fibrosis. The sample of children and their mothers completed measures of both child

depression and parental adjustment (Mullins et al., 1995). Results indicated that higher levels of maternal depression were associated with increased depression in children with IDDM. In addition, increased illness severity and greater length of time since diagnosis was related to depression in children with IDDM (Mullins et al., 1995).

More recently, Chaney and colleagues (1997) examined the transactional patterns of adjustment in children with IDDM and their parents. Interviews and self-report methods were administered to the children and parents in order to assess adjustment at two time points one year apart (Chaney et al., 1997). Their findings indicated that parent and child adjustment remained relatively stable over the one-year study period. After demographic variables (i.e., age, gender, SES) and disease variables (i.e., illness duration, metabolic control) were held constant, it was found that the father's distress over time contributed significantly to poorer child adjustment. Further, a decline in fathers' adjustment was inversely related to mothers' adjustment (Chaney et al., 1997). Results also showed that children's and mother's adjustment independently made significant predictions of fathers' adjustment. Thus, the results of the study substantiate the notion that important transactional relationships in adjustment exist in families of children with IDDM (Chaney et al., 1997).

In summary, these studies have examined how familial influences, including parent variables, affect the adjustment of a child to IDDM. The extant research on familial influences has consistently suggested that these variables are strong predictors of child adjustment. Although such studies support this relationship, additional research is still needed in order to determine the discrete processes by which these variables exert their

effect. In the next section, two such variables will be reviewed, parental overprotection and parenting stress.

Specific Parenting Variables

Parental Overprotection

Operational definitions of parental overprotection have never been universally accepted, although such terms as overindulgent, oversolicitous, and overanxious have been used interchangeably. Indulgent and controlling parental behaviors have been considered to be overprotective, yet the antecedents and consequences of such behaviors may be different (Thomasgard & Metz, 1993). Although it is important that a parent protect their child from the dangers of the outside world, the construct of overprotectiveness suggests behaviors that extend beyond the norms of what most parents would do.

Levy's (1931) original work on overprotection defined the concept as either an excess or lack of maternal control in parental overprotection. Overprotective behaviors were categorized as: 1) excessive physical or social contact, 2) prolongation of infantile care, 3) prevention of independent behavior and 4) either an excess or a lack of maternal control (referred to as indulgence).

Subsequently, there has been research conducted exploring each "form" of overprotection as proposed by Levy (1931). Using Levy's work, Green and Solnit (1964) proposed the Vulnerable Child Syndrome. The Vulnerable Child syndrome deals with parental attitudes about a child's health, specifically a continuing fear that the child will die

prematurely. Green and Solnit (1964) focused their research on parents whose children had previously life-threatening illnesses or injuries from which the parent did not believe the child would recover. Overuse of medical services, overindulgence, psychosomatic illness, and difficulties with separation were the possible outcomes of such events.

An indulgent parent-child relationship is often characterized by a guilty, anxious parental attachment to the child (Green & Solnit, 1964). As the child becomes more independent, setting limits becomes increasingly difficult and anxiety and unresolved feelings of guilt or grief may resurface. At times, the guilt may turn into anger, causing the parent to become punitive toward the child. There is then a shift between overindulgent and overly controlling behaviors.

In contrast to the studies by Green and Solnit (1964), Parker (1983) identified two factors from his research with overprotective parents. The two factors were termed caring versus indifference/rejection, and control/overprotection versus allowance of autonomy/independence. In his study, Parker (1983) found that high protection scores were negatively correlated with the care dimension. Thus, the factor labeled "affectionless control" represented overprotection, while "affectionate constraint" more closely described an indulgent form of parent-child interaction. His research found that the best predictor of parental overprotection was parent trait anxiety. "Affectionate constraint" and "affectionless control" dimensions were associated with higher scores on a measure of trait anxiety versus the "Optimal bonding" and "Absent or weak bonding dimensions."

Thomasgard and Metz (1993) expounded on Levy's (1931) work by making a clearer distinction between the Vulnerable Child Syndrome and parental overprotective behaviors. They emphasized that the Vulnerable Child Syndrome dealt with parental

attitudes about a child's health, specifically, a continuing fear that the child would die prematurely. Clinical outcomes of this syndrome include difficulty with separation, infantilization of the child by the parent, child psychosomatic illness, and later school underachievement (Thomasgard & Metz, 1993). However, unlike parental perceptions of child vulnerability, parental overprotectiveness was conceptualized as a set of specific parental behaviors that promoted the safety and security of the child (Thomasgard & Metz, 1993). They suggest there is a continuum of parental protective behaviors toward children. with the extremes on this continuum are manifested by physical/psychological neglect at one end, and an excessive and developmentally inappropriate level of parental overprotectiveness at the other end (Thomasgard & Metz, 1993).

In summary, a review of the research on parental overprotection suggests that overprotective behaviors have different antecedents and consequences as compared with indulgent patterns of parent-child interaction (Thomasgard & Metz, 1993). Previous research suggests that this parenting variable is an important mediator/moderator in predicting child adjustment to a chronic illness (Jacobson & Hauser, 1986). However, prospective studies are needed to further determine if there is continuity between overprotective behaviors and the maladjustment in children with chronic illnesses, notably IDDM.

Parent Stress

A stressor is an environmental stimulus that acts on an organism and elicits a physiological and/or psychological response. Stressors can vary with their intensity, type, and source. One such stressor many individuals face is that of parenthood.

Parenting stress is defined as the aversive feelings experienced by most parents in response to the demands of the parenting role (Deater-Deckard, 1998). Parenting stress cannot be subsumed under a single measure, but is instead represented by a complex process that links the (a) task demands of parenting, (b) the parent's psychological well-being, (c) the qualities of the parent-child relationship, and (d) the child's psychological adjustment (Deater-Deckard, 1998). Parenting stress then, are those negative feelings toward the self and the child that are directly attributable to the demands of parenthood (Deater-Deckard, 1998).

Parenthood brings a host of stressors that may include demands on time, finances, and marital relations. In addition, the birth of a child and the adjustment of him/her as a new member of the family may in itself be stressful, and the diagnosis of a chronic illness may further add to these stressors. Research has suggested that there are several key areas of parenting that can be affected when a child is diagnosed with a chronic illness. These areas include finances, work, transportation, social isolation for the primary caregiver, family routines, and parental guilt (e.g., Nishiura & Whitten, 1980). Because interactions between parent and child are important influences on the child's emotional, social, and intellectual development, psychological distress in parents and/or excessive family tensions are a significant concern (Fendrich, Warner, & Weissman, 1990). The functioning of parents and the quality of family life may be even more significant for a child with a chronic condition like IDDM. An environment that is "good enough" for a healthy child may be inadequate for a chronically ill youth.

Related work investigating family functioning has suggested that IDDM may create interpersonal difficulties for some parents, including increased conflict and less

organization in the family (Burlew, Evans, & Oler, 1989). Insofar as IDDM causes difficulties for parents, it might be anticipated that children with more severe disease (more complications) have parents who report greater parenting stress and more family tensions.

In normal populations, research has long addressed the linkages between parental stress, parenting style, and child cognitive and social development. It is now recognized that stress has both direct and indirect effects on child development. Greater stress has been associated with less optimal parent and family functioning, less optimal parent-child interactions, and lower child developmental competence.

Conger and colleagues (1984) examined three hypothesized links among stressful environmental conditions and parental actions in child development. The links were maternal distress, child rearing values, and maternal evaluative judgments. These psychological variables partially mediated the influence of stressful life conditions on the positive and negative behaviors of mothers toward their children (Conger, McCarty, Yang, Lahey, & Kropp, 1984). More specifically, chronic stress appeared to have direct influences on maternal behavior and was partially mediated by mothers' emotional distress, authoritarian values, and negative perceptions of their children.

Other studies have demonstrated that links also exist between stable characteristics of parents and parenting stress. Higher parenting stress has been linked to depression (Anastopoulos, Guevremont, Shelton, & DuPaul, 1992; Gelfand, Teti, & Fox, 1992), and separation anxiety (Deater-Deckard, Scarr, McCartney, & Eisenberg, 1994). It seems that psychopathology and personality are likely moderators of the links between social and economic disadvantage and parenting stress, with higher levels of psychopathology

exacerbating the effects of these stressful circumstances on parenting stress (Gelfand et al., 1992).

The availability and accessibility of emotional support appear to be crucial ingredients in positive adaptation to parenting. Support seems to buffer the individual from the negative effects of the parenting stressors (Deater-Deckard, 1998). Parenting stress has been found to be lower for parents who have more perceived emotional and instrumental support from their partners, family members, and friends (Abidin & Bruner, 1995; Roghmann, Moe, Hart, & Forthum, 1994). However, this effect may be culturally bound and dependent on the parent's gender.

This social support-parenting stress link is particularly important for high-risk groups of parents (i.e., adolescent mothers, economically disadvantaged parents). In particular, social support may be associated with lower parenting stress among parents of chronically ill or handicapped children (Frey, Greenberg, & Fewell, 1989). Having sufficient social support may prevent an elevation in parenting stress from negatively affecting parenting behavior and may ameliorate the increase in parenting stress that arises from more general life stress (Nakagawa, Teti, Lamb, 1992). In addition, marital satisfaction, particularly among women, may also reduce the link between parenting stress and parenting behavior (Deater-Deckard, 1998).

The findings from these studies suggest that the risk of psychosocial problems in a population of chronically ill children is increased substantially by the presence of parental dysfunction and stress. It is therefore important to understand how and to what extent parenting stress relates to child and adolescent adjustment to IDDM.

Summary of the Problem

Insulin-dependent diabetes mellitus is one of the most common chronic diseases of childhood, presenting a myriad of challenges and task demand for the family. Certainly, medical problems are often addressed adequately by physicians and other trained medical professionals. However, there is another problematic dimension to IDDM, and that is the behavioral, social, and psychological effects of the illness. These effects are of special concern for the child or adolescent with IDDM, as well as their parents.

The research literature and clinical work with chronically ill children and their families have been largely based upon either pathology or personality models, or in other words, how things go awry. Indeed, chronically ill children appear to manifest higher rates of psychiatric dysfunction as compared to groups of non-affected children (Haggerty, 1984; Breslau, 1985). However, a major goal of research should be to highlight and illustrate the fact that adjustment to chronic illness in children and their families more often provides a context for understanding psychological health and successful adaptation, both in the child and family. It can be also argued that such an approach to understanding chronic illness and psychological sequelae allows a greater opportunity to study psychological strength, resilience, and resistance to life stress.

Current Study

The current study attempted to study how chronic illness impacts family interactions to create maladjustment for the child or adolescent. The study revolved around the essential importance and role of the family in explaining and preventing

eventual adjustment to chronic illness in childhood. Parent and child interactions are interwoven in a bi-directional fashion and therefore, our understanding of psychological coping with IDDM needs to be attuned to this fact. Specifically, research is needed to examine the family system, including the chronically ill child, and how systemic factors influenced an individual's adaptation to IDDM. Family functioning, specifically parental factors, have frequently been linked to children's adjustment. However, specific parental factors have not been adequately studied in the IDDM child population. Thus, this study specifically addressed the relationship of specific parental variables to parent and child adjustment to IDDM. Specifically, the relationship between parental overprotection and parental stress to the child's adjustment to IDDM were examined. The following questions were examined:

Are higher levels of parental overprotection associated with increased levels of depression in children and adolescents with IDDM?

Are higher levels of parenting stress associated with increased levels of depression in children and adolescents with IDDM?

Are higher levels of parental overprotection associated with increased maternal depression?

Are higher levels of parenting stress associated with increased maternal depression?

When demographic and disease severity variables are controlled, what are the relative contributions of both parental overprotection and parenting stress to both parent and child depression?

To answer these questions, the study employed a self-report format to determine how parental overprotection and parenting stress influenced maternal and child adjustment.

CHAPTER III

METHOD

Participants

Participants were 59 children and adolescents, and their mothers. To be included in the study, participants had to meet the following criteria: 1) diagnosis of insulin-dependent diabetes mellitus (IDDM) and 2) be between the ages of 8- and 18-years old. The mean age of the child or adolescent who participated in the study was 12.1 years (SD = 2.47), and the mean age at time of diagnosis was 8.6 (SD= 3.8). Twenty-eight of the participants were children (8- to 12-years old) and thirty-one were adolescents (13-to 18-years old). Twenty-four of the children were male and thirty-five were female. Forty-eight children were Caucasian, three were African American, two were Native American, one was Hispanic, and five were listed as other. The mean age of the mothers was 39.1 (SD = 5.76). Forty-eight of the mothers were married, nine were single, and two were listed as "other". The mean educational level for the mothers was two years of study beyond high school (SD = 2.34), and the mean income per household was between \$40,000 and \$49,999.

Procedure

The participants for the study were contacted via a list that was generated by each participating physician. The list consisted of individuals who had previously consented to participate in research projects being conducted in conjunction with their primary physician. Two physicians with practices in a large Midwestern city participated in the study. One physician worked in a private clinic and the other physician worked in a community-based clinic. Individuals from both clinics were sent letters detailing the rationale and goals of the study. A postcard was included for them to return in order to inform the investigator of their desire to either participate or decline participation in the study. If the participant indicated that they wanted to participate in the study, they were sent a research packet and study. All packets were mailed and completed between March, 1997 and June, 1998. The packet contained two questionnaire packets; one for the mother and one for the child. In addition, the packets contained consent forms. Mothers were asked to sign one copy of the consent forms and return it with the completed packet, and to retain one copy for their records. Mothers were assured that participation or non-participation in the study would not affect their continued medical care.

The caregivers were given names and phone numbers of the researcher and assistants if they had additional questions. The mothers and children were reimbursed ten dollars for their participation. The participation rate for the study was estimated to be forty percent.

Measures

As a result of the varied age range of the study's child and adolescent populations, two different measures were used to assess depression. Children (8- 12-years old) were administered the Children's Depression Inventory (CDI). Adolescents (13- 18-years old) were administered the Brief Symptom Inventory (BSI), with the Depression subscale being used to measure adolescent depression. Mothers also filled out the BSI with the Depression subscale being used to measure maternal depression. In addition, the mothers filled out the Parent Protection Scale/Child Vulnerability Scale and the Parenting Stress Index/Short Form. Physicians completed the illness severity rating form.

Brief Symptom Inventory

The Brief Symptom Inventory (BSI; Derogatis, 1992) is a 53-item self-report symptom inventory designed to reflect the psychological symptom patterns of adolescent and adult psychiatric and nonpsychiatric respondents (Derogatis, 1992). It is essentially the brief form of the SCL-90-R. Each item of the BSI is rated on a five-point scale of distress (0-4). The scale range consists of "not at all" (0) to "extremely" (4). The BSI is scored and profiled in terms of nine symptom dimensions and three global indices of distress (Derogatis, 1992). The depression scale was used to measure depressive symptomatology. The symptoms of the depression dimension reflect a representative range of the indications of clinical depression. Symptoms of dysphoric mood and affect are represented as well as lack of motivation and loss of interest in life (Derogatis, 1992).

The overall reliability of the BSI is very good (Nunnally, 1970). Further, the internal consistency reliability coefficient for the Depression subscale is .85. It has the highest internal reliability of any of the BSI subscales. In addition, the test-retest reliability coefficient of the Depression subscale of the BSI is .84. The BSI also has good validity, showing impressive convergent and discriminant validity (Derogatis, 1992). As with the reliability coefficients, the Depression dimension had the highest coefficients for convergent and discriminant validity (.72 and .95 respectively). These reliability and validity coefficients were based on four major norm groups. The four normative samples included adult psychiatric outpatients, adult nonpatients, adult psychiatric patients, and adolescent nonpatients (Derogatis, 1992). The adult non-patient norms were used as a comparison group for the maternal scores and the adolescent non-patient norms were used as a comparison group for the adolescent scores.

Children's Depression Inventory

The Children's Depression Inventory (CDI; Kovacs & Beck, 1977) is a 27-item self-rated symptom-oriented scale designed to assess depression in children aged 8- to 17-years old. The inventory assesses commonly accepted symptoms of depression that the child has experienced within the two weeks prior to completing the inventory.

Each of the 27 items that comprise the CDI describes a different symptom of childhood depression. These symptoms include disturbances in mood and hedonic capacity, vegetative functions, self-evaluation, and interpersonal behaviors (Kovacs & Beck, 1977). Several items also evaluate the child's functioning in the school environment. The CDI yields a total score that reflects the severity of depressive

symptoms. Factor analysis of the CDI yielded five factor scales: 1) Negative Mood, 2) Interpersonal Problems, 3) Ineffectiveness, 4) Anhedonia, and 5) Negative Self-Esteem. Further analysis has shown that the CDI has good reliability and validity for research and clinical purposes (Kovacs, 1992).

Illness Severity

The diagnosis of IDDM was established by standard laboratory procedures. Patients were classified into two types: insulin-dependent diabetes mellitus or non-insulin dependent diabetes mellitus. Only insulin-dependent children and adolescents were used for the study. Physicians rated each child on illness severity using a 7-point Likert scale designed to give an overall impression of illness severity. Total scores ranged from 0-7, with higher scores meaning increased severity. This scale has been successfully used in previous research (Mullins et al., 1995).

Parent Protection Scale/Child

Vulnerability Scale

The Parent Protection Scale/Child Vulnerability Scale (PPS/CVS; Thomasgard, Metz, Edelbrock & Shonkoff, 1995) is essentially two scales that are designed to measure parental protective behaviors and perceived child vulnerability. It was designed to assess these behaviors for children aged 2 to 10 years old. However, it is appropriate to for use with children and adolescents above 10 years old, and it is the only questionnaire that examines present parental overprotectiveness, rather than determining it in a retrospective

manner (Thomasgard & Metz, 1993). This therefore allows for a better account of parents' parental overprotectiveness.

The PPS scale of the PPS/CVS was used in this study since it was the scale that was developed to measure specific parental protection behaviors (e.g., "I blame myself when my child gets hurt"). The Child Vulnerability Scale (CVS) was designed to measure parent perceptions and attitudes about their child's health. Specifically, it examined parents' fears that their child may die prematurely, and an overall estimate of the child's vulnerability. Since the purpose of the study was to examine discrete parenting behavior and not perceptions, the CVS was not used.

Items on the Parent Protection Scale (PPS) were selected to represent key dimensions of protective behaviors. Factor analyses of the PPS indicated four subscales: supervision, separation problems, dependence, and control. The PPS has acceptable internal consistency, test-retest reliability, and clinical validity. Linear declines in subscale scores as the child's age increased have been noted. Demographic correlates of higher PPS scores included younger parental age, non-married parents, families in the lower third of socioeconomic status, and being an only child (Thomasgard, et al., 1995).

Parenting Stress Index/Short Form

The Parenting Stress Index/Short Form (PSI/SF; Abidin, 1990) is a parent self-report instrument designed to yield a measure of the relative magnitude of stress in a parent-child system and to identify the sources of stress. A factor analysis of the full length PSI scale resulted in a three factor solution (Castaldi, 1990). Castaldi labeled these three factors 1) Maternal Esteem, 2) Parent-Child Interaction, and 3) Child Self-

Regulation. Although the full length PSI examines the parent-child dyad more closely than the short form, the three factors proposed by Castaldi appear to capture the primary components of the parent-child system by focusing on the parent, child, and their interactions (Abidin, 1990). Each of these three factors (subscales) consists of 12 items. The subscale score will be obtained by adding the value of each of the numbers circled by the parent for the 12 items on each subscale. The total score (Total Stress Score) of the PSI/SF will be obtained by adding the three subscale scores together.

The PSI/SF is highly correlated with the full-length PSI instrument ($r = .94$). Two-week test-retest reliability of the full-length PSI with the PSI/SF is .95. Such results suggest that the PSI/SF is measuring an important aspect of parent perceptions that are related to child characteristics, parent stress, and child rearing problems. Additionally, the PSI/SF appears to be a useful tool for the study of stressors and possible stress reactions on parent and child behavior

CHAPTER IV

RESULTS

Overview of Analysis

Before running hierarchical regression analyses to determine the effect(s) of parental overprotection and parenting stress on child/adolescent adjustment and maternal adjustment, preliminary tests (MANOVAs) were utilized to clarify the relationships among the study variables. In addition, means and standard deviations of demographic variables, illness severity, parental overprotection, parenting stress, and depression were obtained.

First, it was necessary to determine that the participants in the study did not differ significantly on demographic variables, illness severity, parental overprotection, or parenting stress. Of particular concern was whether or not demographic variables would differ significantly for the participants and/or have interaction effects with parental overprotection and parenting stress. MANOVAs were subsequently performed between the fixed demographic variables and parental overprotection and parenting stress. These variables included child ethnicity and child gender.

To further examine the interrelationships among the study variables, and to address research questions 1 through 4, a correlation matrix was constructed. This matrix consisted of additional demographic variables (child age and maternal age), illness

severity, child/adolescent depression, maternal depression, parental overprotection, and parenting stress.

Lastly, in order to evaluate research question 5, two hierarchical regression analyses were conducted. Two criterion/ dependent variables were identified, including: 1) the combined scores of child and adolescent (child/adolescent) depression, and 2) maternal depression. For the child and adolescent depression measures, all scores were converted to z-scores in order to combine the two age groups. Z-scores were also used for maternal depression scores. The predictor variables were demographic information, illness severity, parental overprotection, and parenting stress.

The predictor variables were entered in a stepwise fashion according to the transactional stress and coping model (Thompson et al., 1993a; Thompson & Gustafson, 1996). The R² (explained variance) could then be analyzed by increments as to the proportion of the variance explained due to the addition of each new variable entered in the hierarchy (Cohen & Cohen, 1983). In accordance with the transactional and coping model, the predictor variables were entered in two steps. On step one of the regression equation, demographic variables (i.e., child age, child gender, child ethnicity, and maternal age) and illness severity were entered as a block. Parental overprotection and parenting stress were entered as a block on step two. Two regression analyses were then performed with child/adolescent depression or maternal depression as the criterion/dependent variable.

When R² for a given step was significant, an F test was performed to test the significance of the standardized regression coefficients (betas) for each predictor variable.

This test was performed in order to determine if the contribution of variance of a predictor variable was statistically significant.

The rationale for using a hierarchical regression model in this study was based on previous research Thompson and colleagues conducted with populations of children diagnosed with sickle cell disease and cystic fibrosis (Thompson et al., 1993b; Thompson & Gustafson, 1996). Thompson's rationale for the ordering of variables in the model was based on the approach physicians typically take when evaluating a child with sickle cell disease. Typically, demographic variables, illness severity, and frequency of painful episodes are taken into account first, and only after these variables are considered do physicians look beyond them to psychological variables to explain response to painful episodes (Thompson, et al., 1993b; Thompson & Gustafson, 1996).

Preliminary Analyses

Table 1 presents the means and standard deviations for the demographic variables, illness severity ratings, mother-, child-, or adolescent-reported adjustment (depression), parental overprotection, and parenting stress. As mentioned previously, two different measures were used to assess depression. Children (8-12-years old) were administered the Children's Depression Inventory (CDI). Adolescents (13-18-years old) were administered the Brief Symptom Inventory (BSI) with the depression scale used to measure depressive symptomatology.

TABLE 1
 MEANS AND STANDARD DEVIATIONS OF DEMOGRAPHIC
 VARIABLES, ILLNESS SEVERITY, MOTHER- AND
 CHILD-REPORTED ADJUSTMENT, AND
 PREDICTOR VARIABLES

	n	M	SD	norms
Children	28			
Age		10.4	1.3	a
Illness Severity		4.00	.92	a
Depression		6.04	6.62	6.0
Adolescents	31			
Age		14.8	1.6	a
Illness Severity		4.42	.85	a
Depression		53.5	12.4	53.0
Mothers	59			
Age		39.1	5.76	a
Depression		58.0	8.93	55.0
PPS/CVS		28.4	5.76	25.6
PSI		79.0	22.9	83.0

Note: a = not applicable; PPS = Parental Protection Scale/Child Vulnerability Scale;
 PSI = Parenting Stress Index.

The means and standard deviations of the child sample for this study and the Published norms of the CDI are presented in Table 1. The means obtained for each sample are within one standard deviation of the norm means from the BSI, including the adolescent non-patient group and the adult non-patient group.

To further discern the characteristics of the sample, depression scores were examined in terms of maladaptation. For the CDI, a score at or above the 90th percentile defined the criterion for maladaptation, which is a cutoff raw score of 20. Based on these criteria, there were no positive cases in the study sample.

Caseness criteria were also utilized to examine adolescent and maternal scores on the BSI. Caseness is defined by a Global Severity Index (GSI) score that is greater than or equal to 63, or if any two primary scale scores that are greater than or equal to a T score of 63 (Derogatis, 1993). According to caseness criteria, 11 (36%) adolescents and 19 (32%) of mothers met criteria for maladaptation.

MANOVAs were then conducted on the demographic variables and illness severity variable to determine whether significant differences or interaction effects existed between the sample population, parental overprotection, and parenting stress. The MANOVAs were conducted using the fixed demographic variables, child age (child versus adolescent), child ethnicity (Caucasian, African American, Native American, Hispanic, Other), and child gender (males versus females). Results of the MANOVAs indicated that there were no main effects or interaction effects for any of the variables (all p 's > .05).

Pearson product-moment correlations were conducted to further investigate the relationships between demographic variables, illness severity, parental overprotection,

and parenting stress and to address research questions 1 through 4 (see Tables 2 and 3). Results of these correlations are presented below.

Demographic Variables

Results of the correlation matrix indicated that two demographic variables were significantly correlated with parental overprotection (see Table 2). Results indicated that child age was negatively correlated with level of parental overprotection ($r = -.365$), suggesting that as the age of the child increased, level of parental overprotection endorsed by the mother decreased.

The second demographic variable to be significantly correlated with parental overprotection was maternal age (see Table 2). Results indicated that as maternal age increased, levels of parental overprotection decreased ($r = -.311$). Thus, these findings suggest that two age-related trends are associated with parental overprotection.

Illness Severity

Results of the correlation matrix indicated that illness severity was significantly correlated with child age, with higher levels of illness severity associated with older children (see Table 2).

Mother-Child Adjustment Linkages

Lastly, results of the correlation matrix indicated that child/adolescent adjustment and maternal adjustment, as measured by level of depression, were not significantly correlated.

TABLE 2
 CORRELATIONS AMONG DEMOGRAPHIC VARIABLES,
 ILLNESS SEVERITY, MOTHER- AND CHILD-
 REPORTED ADJUSTMENT, AND
 PREDICTOR VARIABLES

	Child Age	Maternal Age	Illness Severity
Child Age	-	.191	.264*
Maternal Age	-	-	-.046
ABSI-DEP	-.063	-.143	.173
BSI-DEP	-.050	-.129	.018
CDI/ABSI-DEP	.004	-.078	-.307
CDI	-.017	-.112	-.069
PPS/CVS	-.365**	-.311*	.014
PSI	.057	-.099	.000

Note: ABSI- DEP = Adolescent Brief Symptom Inventory, Depression scale; BSI- DEP = Brief Symptom Inventory, Depression scale; CDI = Children's Depression Inventory; CDI/ABSI = combined z-scores for the Children's Depression Inventory and Adolescent Brief Symptom Inventory, Depression scale; BSI-DEP = Maternal Brief Symptom Inventory, Depression scale; PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.

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

TABLE 3
CORRELATIONS AMONG MOTHER- AND CHILD-
REPORTED ADJUSTMENT AND PREDICTOR
VARIABLES

	CDI	ABSI- Dep	CDI/ ABSI-Dep	BSI- DEP	PPS/ CVS	PSI
CDI	-	a	1.00**	a	.292	.431*
ABSI -DEP	-	-	1.00**	.086	.365*	.023
CDI/ ABSI-DEP	-	-	-	.013	.318*	.233
BSI - DEP	-	-	-	-	.380**	.468**
PPS/CVS	-	-	-	-	-	.450**
PSI	-	-	-	-	-	-

Note: a = could not be correlated because at least one of the variables is constant; ABSI- DEP = Adolescent Brief Symptom Inventory, Depression scale; BSI- DEP = Maternal Brief Symptom Inventory, Depression scale; CDI = Children's Depression Inventory; CDI/ABSI- DEP = combined z-scores for the Children's Depression Inventory and Adolescent Brief Symptom Inventory, Depression scale; PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.
*p< .05 **p< .01.

Parental Overprotection

As per research question 1, parental overprotection was significantly correlated with combined child/adolescent depression (see Table 3). Results indicated that a significant positive relationship existed, such that as the level of parental overprotection

increased, so did the level of child/adolescent depression. Further, results also revealed a significant relationship between level of parental overprotection and level of depression in the adolescent subsample, meaning that as levels of parental overprotection increased, so did level of adolescent depression. However, parental overprotection was not found to be significantly correlated with child depression. These findings suggest that the significant relationship found between child/adolescent depression and parental overprotection was due largely to the contribution of the adolescent depression scores.

Concerning research question 3, a significant relationship was found between parental overprotection and maternal depression. Results indicated that increased levels of parental overprotection were associated with increased levels of maternal depression.

Parenting Stress

With regard to research question two, parenting stress was found to be significantly correlated with child depression (see Table 3). Thus, increased levels of parenting stress were associated with increased levels of child depression. No significant correlation was found, however, for parenting stress and either adolescent depression or the combined depression scores.

Parenting stress was also found to be significantly correlated with maternal depression (see Table 3). Thus, higher levels of parenting stress were associated with increased levels of maternal depression.

Lastly, results of the correlation matrix indicated that the two discrete parenting measures were significantly correlated. As levels of parental overprotection increased, levels of parenting stress also increased.

Notably, a number of key variables were correlated in the matrix, including both demographic and illness severity variables. Because of the significant interrelationships between these variables, the correlational analyses do not fully answer the research questions posed in this thesis. Furthermore, because of the number of analyses attempted, there is an increased risk of a Type 1 error. Therefore, caution should be taken when interpreting these results.

To address research question 5, two multiple hierarchical regression analyses were conducted to help explain the interrelationships among these variables. The results of these analyses are presented in Tables 4 and 5.

Primary Analyses

Tables 4 and 5 summarize the results of each step of the regression analyses after controlling for demographic and illness severity variables. By controlling demographic variables and illness severity, the relative contribution of parental overprotection and parenting stress on child/adolescent depression and maternal depression could be examined. In each table, the beta weights, partial correlations, R^2 , and R^2 changes for each step are indicated. Also indicated is the F-change for each step.

TABLE 4
 HIERARCHICAL REGRESSION ANALYSES PREDICTING
 CHILD/ADOLESCENT DEPRESSION FROM PARENTAL
 OVERPROTECTION AND PARENTING STRESS

Variable	B	SE	t for Partial regression coefficients	F for set	R2	R2 change
Step 1						
Child Age	.23	.06	1.46	.31	.03	.03
Child Ethnicity	-.27	.12	-1.84			
Child Gender	-.06	.26	-.46			
Illness Severity	-.08	.15	-.62			
Mother's Age	-.04	.03	-.26			
Step 2						
PPS/CVS	.38	.03	2.25	1.65	.19	.16
PSI	.15	.01	.99			

Note: R 2 = .03 for Step 1; change R 2 = .16 for Step 2. PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.

TABLE 5
 HIERARCHICAL REGRESSION ANALYSES PREDICTING
 MATERNAL DEPRESSION FROM PARENTAL OVER-
 PROTECTION AND PARENTING STRESS

Variable	B	SE	t for Partial regression coefficients	F for set	R2	R2 change
Step 1						
Child Age	.02	.06	.13	.565	.05	.21
Child Gender	.02	.25	.13			
Illness Severity	.01	.14	.10			
Mother's Age	-.03	.03	-.24			
Step 2						
PPS/CVS	.21	.03	1.31	2.53	.26	.21
PSI	.38	.01	2.63*			

Note: R 2 = .05 for Step 1; change R 2 = .26 for Step 2. PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.

*p < .05

Exploratory Analyses

Given the differential age group correlation results noted previously, additional exploratory analyses were conducted to further investigate the relationship between parental overprotection, parenting stress, and child/adolescent depression. Previously, child depression scores and adolescent depression scores were combined for analysis. However, for the exploratory analyses, each age group was examined independently. In the exploratory regression analyses, predictor variables were entered in two steps. On step one of the equation, demographic variables (i.e., child age, child gender, child ethnicity, and maternal age) and illness severity were entered as a block. Parental overprotection and parenting stress were entered as a block on step two. The resultant regression analyses were run with either child depression or adolescent depression as the criterion/dependent variable. Tables 6 and 7 summarize the results of the final step of these regression analyses.

TABLE 6
HIERARCHICAL REGRESSION ANALYSES PREDICTING
ADOLESCENT DEPRESSION FROM PARENTAL
OVERPROTECTION

Variable	B	SE	t for Partial regression coefficients	F for set	R2	R2 change
Step 1						
Child Age	.18	.15	.78	.457	.09	.09
Child Ethnicity	-.17	.14	-.81			
Child Gender	.05	.41	.25			
Illness Severity	.11	.24	.51			
Mother's Age	-.13	.03	-.66			
Step 2						
PPS/CVS	.52	.04	2.07	.978	.24	.15
PSI	-.19	.01	-.75			

Note: R² = .09 for Step 1; change R² = .24 for Step 2. PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.

TABLE 7
HIERARCHICAL REGRESSION ANALYSES PREDICTING
CHILD DEPRESSION FROM PARENTING STRESS

Variable	B	SE	t for Partial regression coefficients	F for set	R2	R2 change
Step 1						
Child Age	.19	1.27	1.07	708	.13	.13
Child Ethnicity	-.42	3.00	-1.83			
Child Gender	-.16	3.62	-.89			
Illness Severity	-.32	2.05	-1.68			
Mother's Age	-.11	.40	-.59			
Step 2						
PPS/CVS	.27	.39	1.18	2.63*	.47	.33
PSI	.53	.09	2.70*			

Note: R² = .13 for Step 1; change R² = .47 for Step 2. PPS/CVS = Parent Protection Scale/Child Vulnerability Scale; PSI = Parenting Stress Index.
*p < .05.

CHAPTER V

DISCUSSION

The primary purpose of this study was to better understand the specific mechanisms of adjustment to IDDM by chronically ill children/adolescents and their parents. Previous studies have shown that certain global adjustment variables (e.g., maternal depression) contribute to child adjustment, along with demographic variables and illness severity (Thompson et al., 1993b; Thompson & Gustafson, 1996). Still, a significant amount of variance has been left unexplained. The current study postulated that part of the previous unexplained variance in child and maternal adjustment to IDDM might be accounted for by more specific discrete parent variables. The variables examined were parental overprotection and parenting stress.

To examine the interrelationships among the study variables and to address research questions 1 – 4, correlations were performed. Within the context of the transactional stress and coping model, the correlations were essentially preliminary analyses that did not account for nor control for the effects of demographic and illness variables. Consistent with hypothesis one, the results of the correlation matrix indicated that increased levels of parental overprotection were significantly correlated with increased levels of child/adolescent depression. However, with regard to hypothesis two,

parenting stress was found to be unrelated to level of child/adolescent depression.

Consistent with hypotheses three and four, results of the correlation matrix indicated that increased levels of both parental overprotection and parenting stress were associated with increased levels of maternal depression.

In addition to child/adolescent depression and maternal depression, both demographic variables and illness severity were also found to be correlated with parental overprotection and parenting stress. Based on Thompson's transactional stress and coping model and his research with chronically ill populations (i.e., cystic fibrosis, sickle cell disease), this finding was expected. Thompson's research has consistently demonstrated that demographic variables and illness severity account for roughly 20% - 68% (Thompson & Gustafson, 1996) of the variance associated with adjustment to a chronic illness. In light of this, additional analyses were conducted to determine whether parental overprotection and parenting stress were significant predictors of child and maternal adjustment to IDDM above and beyond the variance associated with demographic variables and illness severity. In order to determine this, a series of hierarchical regression analyses were run.

Research question 5 addressed the relative contributions of parental overprotection and parenting stress to child/adolescent depression and maternal depression after controlling for demographic variables and illness severity. The first regression analysis conducted to address this question was run with child/adolescent depression as the criterion variable. Results of this analysis indicated that after controlling for demographic variables and illness severity, the relative contribution of parental overprotection and parenting stress did not significantly predict levels of child/adolescent depression.

The second regression analysis was conducted to address the relative contribution of parental overprotection and parenting stress to maternal depression after controlling for demographic variables and illness severity. Results indicated that after demographic variables and illness severity were controlled, increased levels of parental overprotection and parenting stress were predictive of increased levels of maternal depression. Further analysis of the variables of interest indicated that parenting stress was the sole significant predictor of level of maternal depression.

The results of the two regression analyses suggests that parental overprotection is not a salient predictor of child/adolescent adjustment or maternal adjustment to IDDM. However, such results should be viewed with caution. Results of the bivariate analyses, indicated that level of parental overprotection was significantly correlated with level of child/adolescent depression and maternal depression, meaning that as level of parental overprotection increased, level of child/adolescent and maternal depression also increased. Further, results indicated that level of parental overprotection was significantly correlated with adolescent depression, meaning that as level of parental overprotection increased, level of adolescent depression increased. Parental overprotection was not significantly correlated with child depression. From this, it appears then that the significance that emerged between parental overprotection and child/adolescent depression may have largely been due to the contribution of the adolescent sample.

In light of these findings, it is speculated that parental overprotection may not have emerged as a salient predictor of adjustment to IDDM as a result of three factors: (a) the relatively small sample size; (b) the removal of variance associated with a variety of demographic and illness parameters; and (c) the combination of two distinct age groups

(children and adolescents). As a result, no definitive conclusion can be drawn at this time as to whether parental overprotection is or is not a predictor of adjustment to IDDM. Therefore, future research with larger sample sizes and homogenous age groups is warranted to address these concerns.

Notably, this is the first study to directly examine the current effect (s) of parental overprotection on child/adolescent adjustment and maternal adjustment. A review of the extant literature found that the majority of the research on parental overprotection was conducted in a retrospective manner. That is, instead of assessing and measuring the present and immediate effect (s) of parental overprotection, these studies looked at the cumulative effect (s) or outcomes over longer periods of time. Although some of these studies included adolescent populations, the bulk of the research was conducted with adult psychiatric populations (Parker, 1981; 1983). This literature, based solely on retrospective accounts and measures, suggest that children raised in an overprotective environment may be at an increased risk for developing anxiety and depressive disorders later in life (Parker, 1981). These studies draw on a variety of conceptualizations of parental overprotection, with terms as "overindulgent," "oversolicitous," and "overprotective" being used interchangeably to describe the same parental behaviors toward their children. In most cases, distinctions have not been made between domineering/controlling and indulgent/permissive types of parental behavior. This undifferentiated taxonomy is problematic because the antecedents and consequences for each of these styles of parent-child relationships appear to be quite different (Thomasgard et al., 1995). Thus, research is warranted to adequately distinguish between these various

parental protective behaviors and to determine how variations in these protective behaviors influence adjustment to IDDM.

Although parental overprotection did not emerge as a significant predictor of child/adolescent adjustment and maternal adjustment to IDDM, analysis of the demographic variables and the PPS/CVS did yield significant results consistent with findings by Thomasgard and his colleagues (1995). Specifically, in the correlation matrix, two age-related trends emerged. First, results indicated that there was a significant relationship between the age of the parent and the level of parental overprotectiveness. Specifically, the younger the parent, the higher the level of parental overprotection on the PPS/CVS. Secondly, there was a significant inverse relationship that emerged between the age of the child and level of parental overprotection, meaning that as the age of the child increased, the level of parental overprotection decreased. These two findings were consistent with the trends observed during the development and validation of the PPS/CVS (Thomasgard et al., 1995). It seems then, that these findings suggest that as parents grow older and children age, less overprotection is apparent. This may reflect their increased adjustment to the disease, maturation effects, or both.

Similarly to parental overprotection, level of parenting stress also did not significantly predict level of child/adolescent depression in regression analyses despite the findings of the correlational analyses. These findings do not support past research in establishing certain types of parent-related stress as a predictor of child/adolescent adjustment to a chronic illness (Banez & Compas, 1990; Thompson et al., 1993a). However, the extant research does not make a distinction between daily life stress and stress associated solely with the parenting role. For example, Thompson and colleagues

(1993) found that in a non-referred sample, maternal daily distress and stress were related to child-reported total symptoms. With chronically ill children, maternal distress was found to be associated with total symptoms reported by children with cystic fibrosis (Thompson et al., 1992a). Further, Banez and Compas (1990) addressed this issue in terms of children's daily stress. Results of their study indicated that mothers' and fathers' reports of their children's internalizing behavior problems correlated significantly with mothers' and fathers' daily stress and distress. Furthermore, parents' level of daily stress was related significantly to their children's self-reported anxiety (Banez & Compas, 1990). Importantly, although these researchers found daily stress to be associated with adjustment difficulties, they did not assess parenting stress per se.

However, level of parenting stress did significantly predict level of maternal depression even when demographic variables and illness severity were controlled. It is speculated that the everyday hassles and stresses associated with parenting may be exacerbated by the demands of caring for a child with IDDM. These demands may include financial concerns, demands of caretaking, and time constraints. As a result, subjective feelings of stress may result in feelings of depression and/or worry (Koocher & O'Malley, 1981; Pless & Satterwhite, 1973).

Although parenting stress was found to be a significant predictor of level of maternal depression, it should be noted that the results of the bivariate analysis indicated that parental overprotection and parenting stress were significantly correlated, suggesting they measure similar overlapping constructs. If this is true, future research needs to address the interrelationship between the PPS/CVS and PSI. As mentioned earlier, two

ways in which to determine the effect of parental overprotection is to increase the sample size, and to run the regression analyses within age groups.

Lastly, after conducting the primary analyses, exploratory analyses were run to further investigate the relationship between parental overprotection, parenting stress, and child depression and adolescent depression independently. When regression analyses were run with adolescent depression as the dependent variable, no significant results were found. Results indicated that the relative contribution of parental overprotection and parenting stress did not significantly predict increased levels of adolescent depression. Contrary to this, results of the bivariate analysis indicate that a significant relationship existed between increased level of parental overprotection and increased level of adolescent depression. Thus, it appears, as with earlier regression analyses, that controlling for demographic variables and illness severity make a substantial difference in how well parental overprotection is able to predict level adolescent depression. Notably, with regard to the prediction of child depression, analyses indicated that increased levels of parental overprotection and parenting stress were associated with increased levels of child depression, with parental overprotection and parenting stress accounting for 47% of the explained variance. Specifically, parenting stress was found to be the significant predictor of child depression. Such preliminary results again underscore the importance of examining such variables within distinct age groups.

The findings of this research study yielded a number of significant results that must be considered when examining child/adolescent and maternal adjustment to IDDM. Several potential strengths of the study should be mentioned. First, discrete parental measures were used as opposed to more global measures. A major concern that has arisen

with regard to using global measures is their validity, not to mention their applicability to the chronic illness populations (Kazdin, 1992). In other words, did they accurately evaluate the construct they were designed to measure? Secondly, there has been concern with how sensitive they are in measuring specific constructs, since such measures are designed to reflect overall global impressions rather than discrete aspects of a construct [(i.e., parenting behavior versus parental overprotection)(Kazdin, 1992)].

Secondly, in selecting the research questions, the investigator considered the current status of knowledge in regard to the variables of interest and developed a theory-driven study that would contribute to that knowledge base. Thompson's transactional stress and coping model, which characterizes contemporary research in the field of pediatric psychology, was utilized to examine the relationship between specific parent variables (i.e., parental overprotection and parenting stress) and their effect on child adjustment to IDDM. Further, use of this model emphasized the importance of controlling for demographic information and illness severity, as they are important factors that also influence child adjustment to a chronic illness.

In addition to its strengths, the current research did have particular limitations. First, although this study is the first to directly examine parental overprotection and parenting stress to the adjustment of children with IDDM, the sample size was relatively small. Therefore, it is not known how well these results can be generalized beyond this study. It is speculated that an increase in sample size would serve to minimize the threats to the external validity (Kazdin, 1992).

Secondly, two age groups were used in the study. It is speculated that the degree to which parental overprotection and parenting stress contributed to the prediction of the

level of child/adolescent depression was directly related to combining the child and adolescent populations. Had the age groups not been combined, very different results may have likely emerged. It is speculated that the differences in their developmental levels may have led to differences in their cognitive processes of appraisals, expectations, and attributions made the experiences of their adjustment to IDDM qualitatively different. As a result of their different levels of cognitive development, it is recommended that future research address these populations independently of one another. It is also suggested that a larger sample size be obtained.

In conclusion, the present findings may have important implications for understanding the specific mechanisms of adaptation to IDDM by children, adolescents, and their parents. Studies have shown that certain global adjustment variables (i.e., maternal anxiety) contribute to child adaptation, along with demographic variables and illness severity, yet a significant amount of the variance in adaptational processes still remains unaccounted (Thompson et al., 1993b). The tentative conclusions of this study suggest that such unaccounted variables may include parental overprotection and parenting stress. It is important to determine whether understanding the roles these variables play in adaptation can enhance a better understanding of adjustment to IDDM. Further, if parental overprotection and parenting stress are significant predictors of child maladjustment, then intervention programs (i.e., parenting skill workshops) can be developed to enhance adaptation to IDDM. Specifically, the goals of these intervention programs would be to increase longevity, enhance the quality of life, and foster adaptation to the stresses associated with IDDM.

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APPENDIXES

APPENDIX A

OKLAHOMA STATE UNIVERSITY INSTITUTIONAL
REVIEW BOARD APPROVAL FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

DATE: 01-26-99

IRB #: AS-99-030

Proposal Title: REDUCING ILLNESS UNCERTAINTY: AN INTERVENTION
TO PROMOTE ADJUSTMENT IN FAMILIES OF NEWLY DIAGNOSED
CHILDREN WITH INSULIN DEPENDENT DIABETES MELLITUS

Principal Investigator(s): Larry L. Mullins

Reviewed and Processed as: Full Board

Approval Status Recommended by Reviewer(s): Approved

Signature: 

Date: January 26, 1999

Carol Olson, Director of University Research Compliance

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modification to the research project approved by the IRB must be submitted for approval. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

APPENDIX B

BRIEF SYMPTOM INVENTORY



Leonard R. Derogatis, PhD

 Last Name First MI

 ID Number

____ _____ // //
 Age Gender Test Date

DIRECTIONS.

1. Print your name, identification number, age, gender, and testing date in the area on the left side of this page.
2. Use a lead pencil only and make a dark mark when responding to the items on page 3.
3. If you want to change an answer, erase it carefully and then fill in your new choice.
4. Do not make any marks outside the circles.

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Product Number
 05627

INSTRUCTIONS:

On the next page is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY. Blacken the circle for only one number for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example before beginning, and if you have any questions please ask them now.

	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY	EXAMPLE
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	HOW MUCH WERE YOU DISTRESSED BY: Bodyaches

APPENDIX C

CHILDREN'S DEPRESSION INVENTORY

CDI

This form lists feelings and ideas that kids sometimes have. From each group of feelings and ideas, pick one sentence that describes you best for the past two weeks. After you pick a sentence from one group, go on to the next group.

There is no right or wrong answer. Just pick the sentence that best describes the way you have been recently. Put a mark like this "X" in the box next to the sentence that you pick.

Here is an example of how this form works. Try it. Put a mark next to the sentence that describes you best.

EXAMPLE: I read books all the time.
 I read books once in a while.
 I never read books.

1. I am sad once in a while
 I am sad many times
 I am sad all the time
2. Nothing will work out for me.
 I am not sure if things will work out for me
 Things will work out for me O.K.
3. I do most things O.K.
 I do many things wrong
 I do everything wrong
4. I have fun in many things
 I have fun in some things
 Nothing is fun at all
5. I am bad all the time
 I am bad many times
 I am bad once in a while
6. I think about bad things happening to me once in a while
 I worry that bad things will happen to me
 I am sure that terrible things will happen to me

7. I hate myself
 I do not like myself
 I like myself
8. All bad things are my fault
 Many bad things are my fault
 Bad things are not usually my fault
9. I do not think about killing myself
 I think about killing myself but I would not do it
 I want to kill myself
10. I feel like crying every day
 I feel like crying many days
 I feel like crying once in a while
11. Things bother me all the time
 Things bother me many times
 Things bother me once in a while
12. I like being with people
 I do not like being with people many times
 I do not want to be with people at all
13. I cannot make up my mind about things
 It is hard to make up my mind about things
 I make up my mind about things easily
14. I look O.K.
 There are some bad things about my looks
 I look ugly
15. I have to push myself all the time to do my school work
 I have to push myself many times to do my school work
 Doing school work is not a big problem

16. I have trouble sleeping every night
 I have trouble sleeping many nights
 I sleep pretty well
17. I am tired once in a while
 I am tired many days
 I am tired all the time
18. Most days I do not feel like eating
 Many days I do not feel like eating
 I eat pretty well
19. I do not worry about aches and pains
 I worry about aches and pains many times
 I worry about aches and pains all the time
20. I do not feel alone
 I feel alone many times
 I feel alone all the time
21. I never have any fun at school
 I have fun at school only once in a while
 I have fun at school many times
22. I have plenty of friends
 I have some friends but I wish I had more
 I do not have any friends
23. My school work is all right
 My school work is not as good as before
 I do very badly in subjects I used to be good in
24. I can never be as good as other kids
 I can be as good as other kids if I want to
 I am just as good as other kids

25. Nobody really loves me.
 I am not sure if anybody loves me
 I am just as good as other kids
26. I usually do what I am told
 I do not do what I am told most times
 I never do what I am told
27. I get along with people
 I get into fights many times
 I get into fights all the time

THE END

APPENDIX D

PARENT PROTECTION SCALE/CHILD

VULNERABILITY SCALE

PARENTING STRESS INDEX

(Short Form)

Richard R. Abidin
University of Virginia

Directions:

In answering the following questions, please think about the child you are most concerned about.

The questions on the following pages ask you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel.

YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

Please mark the degree to which you agree or disagree with the following statements by circling the number which best matches how you feel. If you are not sure, please circle #3.

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

Example:

I enjoy going to the movies. (If you sometimes enjoy going to the movies, you would circle #2.)

1 (2) 3 4 5

	1	2	3	4	5
	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. I often have the feeling that I cannot handle things very well.	1	2	3	4	5
2. I find myself giving up more of my life to meet my children's needs than I ever expected.	1	2	3	4	5
3. I feel trapped by my responsibilities as a parent.	1	2	3	4	5
4. Since having this child I have been unable to do new and different things.	1	2	3	4	5
5. Since having a child I feel that I am almost never able to do things that I like to do.	1	2	3	4	5
6. I am unhappy with the last purchase of clothing I made for myself.	1	2	3	4	5
7. There are quite a few things that bother me about my life.	1	2	3	4	5
8. Having a child has caused more problems than I expected in my relationship with my spouse (male/female friend).	1	2	3	4	5
9. I feel alone and without friends.	1	2	3	4	5
10. When I go to a party I usually expect not to enjoy myself.	1	2	3	4	5
11. I am not as interested in people as I used to be.	1	2	3	4	5
12. I don't enjoy things as I used to.	1	2	3	4	5
13. My child rarely does things for me that make me feel good.	1	2	3	4	5
14. Most times I feel that my child does not like me and does not want to be close to me.	1	2	3	4	5
15. My child smiles at me much less than I expected.	1	2	3	4	5
16. When I do things for my child I get the feeling that my efforts are not appreciated very much.	1	2	3	4	5
17. When playing, my child doesn't often giggle or laugh.	1	2	3	4	5
18. My child doesn't seem to learn as quickly as most children.	1	2	3	4	5
19. My child doesn't seem to smile as much as most children.	1	2	3	4	5
20. My child is not able to do as much as I expected.	1	2	3	4	5
21. It takes a long time and it is very hard for my child to get used to new things.	1	2	3	4	5

- | | 1 | 2 | 3 | 4 | 5 | |
|--|----------------|--------|----------|----------|-------------------|----------------------------|
| | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | |
| 22. I feel that I am: | | | | | | |
| 1. not very good at being a parent, | | | | | | |
| 2. a person who has some trouble being a parent, | | | | | | |
| 3. an average parent, | | | | | | 1 2 3 4 5 |
| 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. | | | | | | 1 2 3 4 5 |
| 24. Sometimes my child does things that bother me just to be mean. | | | | | | 1 2 3 4 5 |
| | | | | | | P-CDI <input type="text"/> |
| 25. My child seems to cry or fuss more often than most children. | | | | | | 1 2 3 4 5 |
| 26. My child generally wakes up in a bad mood. | | | | | | 1 2 3 4 5 |
| 27. I feel that my child is very moody and easily upset. | | | | | | 1 2 3 4 5 |
| 28. My child does a few things which bother me a great deal. | | | | | | 1 2 3 4 5 |
| 29. My child reacts very strongly when something happens that my child doesn't like. | | | | | | 1 2 3 4 5 |
| 30. My child gets upset easily over the smallest thing. | | | | | | 1 2 3 4 5 |
| 31. My child's sleeping or eating schedule was much harder to establish than I expected. | | | | | | 1 2 3 4 5 |
| 32. I have found that getting my child to do something or stop doing something is: | | | | | | |
| 1. much harder than I expected, | | | | | | |
| 2. somewhat harder than I expected, | | | | | | |
| 3. about as hard as I expected, | | | | | | 1 2 3 4 5 |
| 4. somewhat easier than I expected, | | | | | | |
| 5. much easier than I expected. | | | | | | |
| 33. Think carefully and count the number of things which your child does that bother you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please circle the number which includes the number of things you counted. | | | | | | |
| 1. 10+ | 2. 8-9 | 3. 6-7 | 4. 4-5 | 5. 1-3 | | 1 2 3 4 5 |
| 34. There are some things my child does that really bother me a lot. | | | | | | 1 2 3 4 5 |
| 35. My child turned out to be more of a problem than I had expected. | | | | | | 1 2 3 4 5 |
| 36. My child makes more demands on me than most children. | | | | | | 1 2 3 4 5 |

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APPENDIX E

PARENTING STRESS INDEX/SHORT FORM

PPS/CVS

Thomasgard, Shonkoff, Metz & Edelbrock

Please read each statement carefully and determine the extent to which the statement is descriptive of your behavior with your child.

	Never (0)	Sometimes (1)	Most of the time (2)	Always (3)
1. I blame myself when my child gets hurt.....	0	1	2	3
2. I comfort my child immediately when he/she cries.....	0	1	2	3
3. I encourage my child to depend on me.....	0	1	2	3
4. I have difficulty separating from my child.....	0	1	2	3
5. I trust my child on his/her own.....	0	1	2	3
6. I let my child make his/her own decisions.....	0	1	2	3
7. I have difficulty leaving my child with a babysitter.....	0	1	2	3
8. I decide when my child eats.....	0	1	2	3
9. I use baby words when I talk to my child.....	0	1	2	3
10. I urge my child to try new things.....	0	1	2	3
11. I determine who my child will play with.....	0	1	2	3
12. I keep a close watch on my child.....	0	1	2	3
13. I feed my child even if he/she can do it alone....	0	1	2	3
14. I feel comfortable leaving my child with other people.....	0	1	2	3
15. I protect my child from criticism.....	0	1	2	3
16. I let my child choose what he/she wears.....	0	1	2	3
17. I make my child go to sleep at a set time.....	0	1	2	3
18. I go to my child if he/she cries during the night.....	0	1	2	3
19. I encourage my child to play with other children..	0	1	2	3
20. I give my child extra attention when he/she clings to me.....	0	1	2	3

	Never (0)	Sometimes (1)	Most of the time (2)	Always (3)
21. I decide what my child eats.....	0	1	2	3
22. I dress my child even if he/she can do it alone...	0	1	2	3
23. I decide when my child goes to the bathroom.....	0	1	2	3
24. I know exactly what my child is doing.....	0	1	2	3
25. I allow my child to do things on his/her own.....	0	1	2	3

1. In general my child seems less healthy than other children.....	0	1	2	3
2. I often think about calling the doctor about my child.....	0	1	2	3
3. When there is something going around, my child usually catches it.....	0	1	2	3
4. I sometimes get concerned that my child doesn't look as healthy as s/he should.....	0	1	2	3
5. I often have to keep my child indoors because of health reasons.....	0	1	2	3
6. My child gets more colds than other children I know.....	0	1	2	3
7. I get concerned about circles under my child's eyes.....	0	1	2	3
8. I often check on my child at night to make sure that s/he is okay.....	0	1	2	3

VITA

Colleen Anissa Ewing

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Master of Science

Thesis: THE RELATIONSHIP OF PARENTAL OVERPROTECTION AND PARENTING STRESS TO DEPRESSION IN CHILDREN AND ADOLESCENTS WITH INSULIN-DEPENDENT DIABETES MELLITUS

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