

The Influence of Sibling Relationships in Children  
with Chronic Medical Conditions

By

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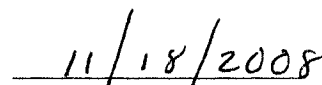
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## **ABSTRACT**

Research indicates that children's adjustment may be linked to family relationships. However, studies have tended to focus on parent-child interactions or on how having a chronically ill or disabled sibling influences children who do not have any health problems. The role that a healthy child might have on the adjustment of a child with a chronic medical condition has been overlooked. Considering the fact that children who have covert medical conditions have a higher risk of developing adjustment difficulties, the influence a sibling may have in alleviating this risk deserves attention.

This study examined whether sibling relationships had an association with adjustment in children with and without chronic, covert medical conditions. The sample consisted of 30 children and their parents. Children were between 7 and 14 years of age, and had at least one sibling. Parents were asked to complete the Child Behavior Checklist (CBCL), while children completed the Sibling Relationship Questionnaire (SRQ) and the Beck Youth Inventory-Depression scale (BYI-D). In addition, parents and children were both asked about their opinions on the child's sibling relationships.

Results indicated that affection in the sibling relationship did not appear to influence adjustment outcomes in children. Ratings of hostility did appear to be linked to adjustment, but only in children who had a covert medical condition. However, parent ratings of sibling closeness were positively correlated with measures of adjustment in

children, particularly in regard to children with covert medical conditions. The amount of variance accounted for by sibling relationship quality, gender, and medical status in regards to adjustment status were also examined.

PREVIEW

## CHAPTER I

### INTRODUCTION

This study investigates the role that sibling relationships play in children's adjustment. Special regard is given to the influence of sibling relationships of children with chronic medical conditions, as these children have a higher risk for developing adjustment problems than their peers. Prior research on sibling relationships has tended to focus on the negative influences that the presence of a chronically ill or disabled child in the family may have on a healthy sibling, but the quality of sibling relationships as a possible protective factor has rarely been addressed. The current study intends to examine this issue in depth.

#### *Overview*

There has been a plethora of research linking children's adjustment to family relationships. However, most of this research has emphasized the parent-child dyad in general and, more specifically, the mother-child bond. In contrast, there has been a dearth of studies evaluating the role of sibling relationships in children's adjustment. Those studies that have been done imply that the quality of the sibling relationship is associated with children's psychological and behavioral adjustment (e.g., Daniels, Moos, Billings, & Miller, 1987; Hanson et al., 1992; Milevsky & Levitt, 2005; Modry-Mandell, Gamble, & Taylor, 2007; Olivia & Arranz, 2005; Sabarra, Rimm-Kaufmann, & Pianta, 2002). However, most of this research has focused on the

influence that a chronically ill or disabled sibling (e.g., developmentally or physically impaired) plays on the adjustment of a healthy, non-disabled child (e.g., Gallo & Szychlin, 2003; Guite, Lobato, Kao, & Plante, 2004; Hanson et al., 1992; Hollidge, 2000; Wolf, Fisman, Ellison, & Freeman, 1998). These studies tend to focus on the negative impact that a child with a chronic illness has on other children in the family, rather than on potential areas of sibling support. Moreover, the influence that a healthy sibling may have on the adjustment of a child with a chronic medical condition has largely been ignored.

Furthermore, it is not just the siblings of children with disabilities who run the risk for adjustment problems. Children and adolescents with chronic medical conditions, such as asthma, diabetes, and epilepsy, are themselves at an increased risk for developing psychological and psychiatric problems (Calam, Gregg, & Goodman, 2005; Gortmaker, Walker, Weitzman, & Sobol, 1990; Holden et al., 1997; McQuaid, Kopel, & Nassau, 2001; Sbarra et al., 2002). An epidemiological study conducted with regard to children between 4 and 17 years of age also found increased risk of behavioral problems among those with chronic physical conditions (Gortmaker et al., 1990). This risk persisted even when sociodemographic variables such as gender, family income, and parent factors were controlled for (Gortmaker et al., 1990).

#### *Statement of Purpose*

The current study is designed to fill a gap in the literature, namely, by examining how relationships with siblings may be related to the behavioral and emotional adjustment of children diagnosed with asthma, diabetes, and epilepsy. Specifically, sibling affection and hostility are investigated in samples of children

with and without covert medical conditions and their correlations to adjustment outcomes are explored. The amount of variance in children's adjustment accounted for by sibling affection and hostility, and the possible interactions between sibling relationship variables and gender are also examined.

More specifically, this study examines the relationship between feelings of affection and hostility towards siblings as they relate to depression, externalizing behavior, and total behavior problems in children with and without chronic medical conditions. The role of gender on the quality of sibling relationships in this population will be studied to expand on the work of Cicirelli (1989), who found differences in the association of adjustment and quality of relationship to brothers and sisters. Differences in sibling relationships where one child has a chronic medical condition and sibling relationships where neither child has such a diagnosis are also examined.

The chronic medical conditions that will be addressed in this study are asthma, diabetes, and epilepsy. These three were chosen because they all share the distinction of being covert chronic medical conditions. In each of these cases, the presence of a medical condition is not obvious to observers. Unlike children with hearing or visual impairments, who may require tools such as hearing aids or books written in Braille, the peers of a child with asthma, diabetes, or epilepsy may never know the child has a medical condition at all. None of these conditions are curable, all require long term management, and all have the potential to be fatal, yet they can also be managed at home and generally do not prevent children from engaging in the activities enjoyed by their peers. Asthma, diabetes, and epilepsy also all typically

emerge in childhood, and are common enough conditions that can be found among the general population, rather than just in hospital or clinic settings.

### *Hypotheses and Research Questions*

There are four main hypotheses regarding perceived quality of sibling relationship and its influence on behavioral and emotional adjustment. Specifically, it is hypothesized that:

1. There would be a significant positive correlation between children's perception of hostility in the sibling relationship and self and parent ratings of emotional and behavioral maladjustment. Furthermore, this correlation will be stronger for children with covert medical conditions than for those without. The Beck Depression Inventory for Youth (BDI-Y) and the Child Behavior Checklist (Achenbach and Edelbrock, 1991) were used to measure child and parent perceptions of emotional and behavioral maladjustment.
2. There would be a significant negative correlation between perceptions of affection in the sibling relationship and child and parent ratings of children's emotional and behavioral maladjustment.
3. Children's ratings of sibling affection and hostility are expected to account for a significant amount of the variance in their emotional and behavioral adjustment, particularly among children with chronic medical conditions.
4. The interaction between gender and quality of sibling relationship is expected to predict feelings of depression and behavior problems. More specifically, it is hypothesized that quality of sibling relationship to a sister

would be a better predictor of emotional and behavioral adjustment than would quality of relationship to a brother.

In addition to the above hypotheses, several exploratory questions were examined to determine if relationships existed between:

1. Gender and emotional or behavioral adjustment.
2. Gender and the perception of the sibling relationship.
3. Number of siblings and emotional and behavioral adjustment.
4. Age of the child and adjustment to sibling.

It is hoped that this research into sibling relationships may help us better understand the experiences of children within the family context. This in turn may aid the development of new and more effective interventions for children and families, in particular, those that are experiencing or who are at higher risk for adjustment problems. Furthermore, with the increased focus on prevention, rather than dysfunction, in the treatment of chronic illness, research that may help promote adaptive functioning in the family setting may be of interest to other professionals who work outside of the field of psychology, such as medicine (Jutras et al., 2003), and social work (Bellin & Kovacs, 2006).



## CHAPTER II

### LITERATURE REVIEW

This section provides a review of the current literature on asthma, diabetes, and epilepsy, particularly as each relates to adjustment problems in children and the effects these conditions have on families as a whole. An overview of each condition is followed by a review of the research into the adjustment issues related to that condition. The literature on sibling relationships follows after the literature on asthma, diabetes, and epilepsy is examined.

#### *Chronic Medical Conditions: Asthma, Diabetes, and Epilepsy*

Asthma, diabetes, and epilepsy all share common features which make examining them together appropriate. For instance, they are all chronic illness generally diagnosed in childhood, and are among the ten most common chronic illnesses affecting children (Kaffenberger, 2006). While none of these conditions are curable, neither are they necessarily terminal, though they may result in severe or debilitating consequences if not controlled (Kaffenberger, 2006). As such, each necessitates close and continuous medical supervision over time (Watson & Logan, 1998; Wodrich, Kaplan & Deering, 2006). Each condition involves related events that are largely unpredictable, but generally does not involve physical deformities or other signs of illness. Furthermore, all three have been associated with increased risks for emotional and behavioral maladjustment (Blackman & Gurka, 2007; Carlton-Ford et

al., 1995; Grey, Wittemore & Tamborlane, 2002; Katon, Lozano, & Russo, 2007; Schoenfeld et al., 1999; Seidenberg & Berent, 1992). Finally, they have been studied in tandem in prior research (Zashikhila & Hagglof, 2007).

However, despite these similarities, there are major differences among these conditions that warrant further clarification. Foremost of these is that the conditions affect different systems throughout the body. Asthma is a respiratory ailment, while diabetes affects the endocrine system, and epilepsy is a neurological condition. Of all these, epilepsy is the diagnosis that covers the widest array of subtypes.

Classification may be based on type of seizure (e.g. partial or generalized) or area of the cortex from which the seizures generate. (This may be as broad as temporal or parietal lobe epilepsy, or as specific as amygdale-hippocampal, orbitofrontal, or paracentral seizures). The classification of diabetes and asthma are more straightforward.

#### *Asthma*

Once believed to be a psychosomatic illness linked to poor mother-child interactions (Klinnert et al., 2000), asthma is now known to be a lung disease involving airway obstruction, airway inflammation and increased airway responsiveness to a variety of stimuli (Vura-Weis, 1998). Asthma is one of the most common respiratory conditions in the United States, affecting four to five percent of the overall population, with two-thirds of all sufferers currently under 18 years of age. Between 7 and 13 percent of all children in the United States have already been diagnosed, and approximately 4.8 million more children a year will join their ranks (Morgan & Khan, 2003). Furthermore, the condition is becoming both more severe

and more prevalent over time. (Barnes, 2008; de Mesquita and Fiorello, 1998; Gillaspy, Hoff, Mullins, Van Pelt, & Chaney, 2002; Morgan & Khan, 2003).

Asthma is manifested in the widespread narrowing of air passages (Barnes, 2008). Those with this ailment have hypersensitive bronchioles (i.e., branches of the trachea that convey air to the lungs) that narrow and constrict in response to a variety of stimuli (Plaut, 1995). In an attack, bronchial tube linings become inflamed and compressed, the small muscles that surround this area become hypersensitive, and glands produce excessive mucus that further clogs the airway (de Mesquita & Fiorello, 1998). These internal changes manifest themselves outwardly as wheezing, breathlessness, tightness in the chest, and coughing (Gillaspy et al., 2002). Chest pain is an especially common complaint in children, while adults describe greater difficulties in breathing in enough air, not being able to exhale completely, and labored breath (Vura-Weis, 1998). If untreated, the airways may become thickened and swollen, further lowering the threshold for attack and thus increasing the likelihood of future attacks.

At the onset of an attack, the chest feels constricted, there is often an unproductive cough, and breathing becomes harsh. Breathing and heart rate increase (tachypnea and tachycardia), as does systolic blood pressure. The end of an attack is typified by a cough that expels the thickened mucus. If this cough is ineffective, this mucus remains in the lungs and may lead to suffocation (Barnes, 2008). Attacks generally last only a few minutes, but may take several hours to resolve (Barnes, 2008). However, status asthmaticus, where episodes may last days or weeks, is always a concern. While attacks are rarely lethal (Vura-Weis, 1998), some certainly

may be fatal. Of further concern is that the mortality rate from asthma has been rising, particularly in inner city areas (Barnes, 2008). As it is impossible to predict the severity of the attack at its onset (Plaut, 1995), all attacks are considered to be potentially life threatening and require immediate attention (de Mesquita & Fiorello, 1998).

Regardless of the severity of the attack, breathing difficulties typically disrupt whatever activity the individual is engaged in, and often some intervention is required (Plaut, 1995). In this vein, asthma causes children to miss school more often than any other chronic condition (Steinmann, 1992).

A variety of factors may cause the initial inflammation of the airway, which sets off the asthmatic condition. These are generally divided into seven major categories: allergens, (e.g., pollen) ; pharmacological stimuli, (e.g., sulfides used in food preservation); environmental and air pollution; occupational stimuli; infection; exercise; and emotional stress. Whatever the initial irritant, once exposed, the lungs tend to become more sensitive and react to further triggers more easily. Over time this buildup can lead to permanent physiological changes which persist even if episodes cease and asthma appears to be in remission (Barnes, 2008).

Since smaller airways are more prone to be effected, young children are particularly susceptible to asthma (Vura-Weis, 1998). In fact, half or more of all cases develop before 10 years of age (de Mesquita & Fiorello, 1998; Vura-Weis, 1998), though most children with asthma are diagnosed by 3 years of age (de Mesquita & Fiorello, 1998). However, many children who are diagnosed with the condition cease to exhibit symptoms once they reach adolescence (Plaut, 1995).

### *Asthma and Adjustment*

As with epilepsy and diabetes, the effects of asthma are not limited to the physical body, but also have a psychological and social impact. Depression and anxiety are commonly found to be comorbid conditions (Gillaspy et al., 2002; Morgan & Khan, 2003). Furthermore, emotional reactions may effect the vagus nerve, causing the muscles around the bronchioles to tighten, leading to wheezing. Anxiety in particular, may lead to a worsening of symptoms (Plaut, 1995).

There is evidence which suggests an emerging relationship between a variety of lung diseases, mental health problems (e.g., anxiety, depression), and behavioral problems (Alati et al., 2005; Ortega, Huertas, Canino, Ramierz, & Rubio-Stipec, 2002). In fact, children with asthma appear to have a greater risk for developing emotional and behavioral problems in general, and internalizing problems such as anxiety and depression in particular (Alati et al., 2005; Calam et al., 2005). It has been estimated that between 30 to 63 percent of children with severe asthma experience psychopathology (Wamboldt et al., 1998). In this vein, Alati and her colleagues (2005) discovered that asthma symptoms in childhood were better predictors of emotional problems in adolescence than were emotional difficulties in childhood. On this basis, asthma has been postulated as a causal factor driving the development of internalizing problems (Alati et al., 2005).

In addition, in a study that controlled for overall health as a possible confound of psychological susceptibility, children with asthma who were otherwise in good health were more likely to be judged as having emotional difficulties by parents and teachers than were other children in good health without asthma. Such a link may

lead to a vicious cycle, as depression and anxiety have been found to be risk factors in increased morbidity and mortality in asthma (Wamboldt et al., 1998). This risk may also be additive, as evidence suggests that children with early onset of asthma symptoms (by 3 years of age) may be at higher risk for emotional difficulties than children whose symptoms onset later (between 3 and 6 years of age). For example, at age six, children who had been diagnosed with asthma by three years of age had higher Behavioral Screening Questionnaire (BSQ) scores than children without asthma or who developed asthma later; children who had an early onset of asthma were also more likely to experience symptoms of depression as well as behavior problems than children who developed the condition later (Mrazek, Schuman & Klinnert, 1998). This suggests that asthma onset before age three may have significant negative influences on behavioral adjustment. Differences in adjustment between early and late onset asthma groups were noted as early as four years of age, though differences were not significant at that point (Mrazek et al., 1998).

Evidence suggesting a genetic link between asthma and psychological and/or psychiatric concerns has also been posited. Wamboldt and her colleagues (1998) found that there was not only a high percentage of anxiety and affective disorders in a sample of children with asthma, but that the first degree relatives (e.g., parents) of children with asthma had greater rates of depression and affective disorders than first degree relatives of children without asthma. In addition, first degree relatives of children with asthma had similar rates of depression as compared to first degree relatives of children who were diagnosed with depression, and the affective disorders in the family were likely to have preceded the illness in the child. Findings by Perna,

Bertani, Polti, Colombo and Bellodi (1997) also found high prevalence of panic disorders among people with asthma; since diagnoses of asthma generally occurred prior to the onset of panic disorders, they hypothesized that asthma might in fact facilitate the development of panic disorder. First degree relatives of those with panic disorder were also found to report more chronic obstructive pulmonary diseases (COPD) in general, particularly asthma (Van Beek, Schruers & Griez, 2005), than did people who did not have first degree relatives with a panic disorder. However, despite the high rates of anxiety disorders found in children with severe asthma, their families did not appear to have a higher than average risk for developing anxiety (Wamboldt et al., 1996).

It should be noted that the medications used to treat asthma may actually exacerbate symptoms of emotional and behavioral maladjustment. For example, children being treated with aerosolized steroids may be prone to hyperactivity, aggression and oppositionality, all of which are components of several DSM-IV diagnoses (e.g., attention-deficit, oppositional defiant disorders). Steroid treatment may also increase feelings of anxiety and depression (de Mesquita & Fiorello, 1998), although alternative evidence indicates that medication level may not be related to psychosocial variables (Klinnert et al., 2000).

#### *Asthma and Family Issues*

Family functioning also seems to influence the ability of children to cope with asthma. For example, Reichenberg and Broberg (2005), who studied children with asthma in Sweden, found that family cohesion (i.e., the emotional bond that family members feel for each other), was positively related to children's psychological

adjustment, as assessed by children's ratings of global self-worth and parent reports of behavioral problems. In Australia, Sawyer, Spurrier, Kennedy, and Martin (2001) examined possible links between quality of life among children with asthma and family adjustment, which included such factors as communication, problem solving, and affective involvement. While no significant correlations between physical health and general family functioning were noted among this sample, overall family functioning was found to be a significant correlate of mental health outcomes. More specifically, the quality of family affective relationships (i.e. the extent to which family members are concerned about each other's welfare and provide emotional support when needed) was found to significantly and negatively relate to children's distress due to asthma symptoms. Including family adjustment variables in stepwise multiple regression analyses has also been found to improve the prediction of children's adjustment outcomes above the inclusion of medical variables alone (Hamlett, Pellegrini & Katz, 1992).

Only one study (Eksi, Molzan, Savasir & Guler, 1995) has included questions regarding the role of sibling relationships in the psychological adjustment of children with asthma. The results of that study found that Child Behavior Checklist problem scores for children with asthma were significantly correlated with unsatisfactory sibling relationships.

### *Diabetes*

Diabetes mellitus is, like asthma, a common and chronic disease, and one of the most common disorders of childhood (Watson & Logan 1998). Diabetes is also a leading cause of death in most countries (Rewers, 2002; World Health Organization,