THE ROLE OF FAMILY DYNAMICS IN PSYCHOSOMATIC AND CHRONIC ILLNESS IN CHILDHOOD

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

Fall 1982

ABSTRACT

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This study proposed to clarify the role of family functioning in relation to childhood psychosomatic illness. Maladaptive family functioning is thought by some to be characteristic of families with psychosomatically ill children. Others propose that any chronically ill child can produce such family dynamics. Families of children with psychogenic abdominal pain, asthma, and leukemia were compared on dimensions of adjustment, adaptability and cohesion. It was hypothesized that families with a psychosomatically ill child would show the most disturbed child and family adjustment. Measures of psychosomaticism for asthmatics only were used to define a subgroup of asthmatics expected to show disturbed family functioning. Leukemics were expected to have moderate levels of adjustment.

Fifteen families with an ill child comprised each of three illness groups: Leukemia, Asthma, and Abdominal Pain. Families were enlisted through local specialty clinics and private pediatricians. Children ranged in age from six to thirteen. The families were seen in their homes and filled out questionnaires. The Family Adaptability and Cohesion Evaluation Scales (FACES) (Olson,

Sprenkle, and Russell, 1979) measured family cohesion and adaptability. The Spanier Dyadic Adjustment Scale (Spanier, 1976) and the Achenbach Child Behavior Checklist (Achenbach, 1980) measured marital and child adjustment, respectively. For asthmatic subjects only, psychosomaticism was measured by the Asthma Precipitant Survey, filled out by the mother, and a physician rating.

As hypothesized, children in the Abdominal Pain Group showed more characteristics of emotionally disturbed children than did those in the Asthma and Leukemia Groups. However, predicted family patterns were not found. Rather, mothers were found to be more rigid than fathers in all three groups. As a whole, the sample scored as more rigid and more enmeshed than the population norms. In the Asthma Group, psychosomatic prone asthmatics reported more behavior problems and lower marital satisfaction than non-psychosomatic asthmatics. The hypothesis that psychosomatic symptoms in children are related to patterns of family functioning was rejected. It was concluded that families with an ill child show similar family dynamics and are more connected and structured than typical families.

DEDICATION

To the ill children and their families,

that they may live happily.

ACKNOWLEDGMENTS

I extend my sincere appreciation, first, to the families who shared of themselves to make this project possible. Many thanks to my committee: Professor Lucy Ferguson, Committee Chair, for her guidance throughout not only this project, but also my entire graduate program; Professor Charles Hanley, for assuming the responsibilities of chairman, for his statistical and editorial assistance, and for sharing interesting conversation; and to Professors Martha Karson and Elizabeth Seagull, a special heartfelt thanks for their respect and friendship.

The assistance of many medical professionals is responsible for the successful completion of this study. For their time and help in contacting families with ill children, I extend my thanks to Patricia Peek, R.N., M.A.; and Sara LeeRoy, R.N. from Michigan State University Clinical Center; Mary Waskerwitz, R.N., P.N.P., from Mott Children's Hospital, Ann Arbor; and Dr. Ronald Holmes, Beaumont Hospital, Detroit, Michigan.

Finally, I wish to acknowledge Dr. Richard Honicky, pediatric pulmonary specialist at Michigan State University Clinical Center, for his help in conceptualizing and implementing this study. I especially appreciate his openness, sharing and willingness to see ill children as whole human beings in the context of their families. Thank you all.

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INTRODUCTION

The role of family dynamics in psychosomatic disorders of childhood was the subject of this study. The study of family dynamics in relation to psychosomatics represents the move away from purely psychoanalytic and physiological consideration of symptoms to the exploration of the interaction of psycho-social factors influencing psychophysiological functioning. Minuchin, Rosman and Baker (1978) have proposed that families of psychosomatic children show chronic unresolved stress, rigidity, enmeshment, and use the child's illness to detour marital conflict. Literature on chronic illness in childhood suggests that the dynamics proposed to encourage psychosomatic symptoms in children may be the result of the stress generated by having any chronically ill child in the family. Yet another theory suggests that the adjustment of the child and family to any illness, psychosomatic included, depends on variables related to pre-illness adjustment and adaptability.

This study explored whether family dynamics which have been identified as characteristic of children with psychosomatic illness are neurotic family patterns which produce a symptomatic child, rather than the effect of coping with a chronically ill child. Families with a child diagnosed as having psychogenic recurrent abdominal pain (irritable bowel syndrome), families with an

asthmatic child, and families with a child who had leukemia participated in the study. These three illnesses were chosen since they represent different degrees of psychosomaticism. Recurrent abdominal pain has no known organic etiology and is thought to be primarily psychogenic. Asthma traditionally has been thought of as a psychosomatic disease. Now, it is known to have organic etiology with morphological changes, but its course is highly influenced by emotional factors. Leukemia is a chronic disease rarely considered to be psychosomatic.

Before discussing specific hypotheses regarding the role of the family in the etiology of these childhood illnesses, literature relevant to the study will be reviewed. A brief historical review of the study of psychosomatics and summaries of theory and research in childhood asthma, recurrent abdominal pain, leukemia, and the effect on families of chronic illness in children will follow.

LITERATURE REVIEW

Psychosomatics

The modern study of psychosomatics derives from the ancient consideration of the relationship between the human mind and the body. The discipline as we know it grew from two major trends in the early 20th century: the psychoanalytical and the psychophysiological. The former was primarily influenced by Freud's revolutionary theories about unconscious mental processes and their effect on behavior. The latter grew from Pavlov's demonstrations that external stimuli could affect functional patterns of internal behavior.

The psychodynamic school of thought in psychosomatics relied on psychoanalytic concepts and methods of making observations. The focus of the approach was to identify the specific factors in personality which determine susceptibility to particular diseases, and to identify the particular intrapsychic mechanisms and psychological factors determining choice of disease organ or function. These early theories are summarized in Table 1. They are largely based on observations of psychiatric patients and are not supported by empirical studies. However, the impact of the psychodynamic approach has been great, and researchers still search for the psychodynamic meaning of psychosomatic symptoms (Sperling, 1978).

TABLE 1.--Psychoanalytic Theories of Psychosomatic Illness.

Theorist	Date	Theory of Finding
Adler	1924	Neurotic patients manifest somatic symptoms at the site of a constitutional "organ inferiority".
Dunbar	1935	Personality profiles for patients with fractures hypertensive cardiovascular disease, rheumatic disease, and diabetes.
Reusch	1948	Some physical symptoms reflect infantile self-expression, or use of somatic sphere for communication.
Deutsch	1949	Physical symptoms are a symbolic representation of a repressed emotion.
Alexander	1950	Specific unresolved neurotic conflicts cause specific somatic disorders such as bronchial asthma, ulcerative colitis, essential hypertension, and arthritis.
Schmale	1958	Correlational study found real, threatened, or symbolic object loss highly correlated with onset of asthma, diabetes, ulcerative colitis, and cancer.
Engel	1967	Study of patient records found that somatic disease coincided with a period when patient was dealing with real or threatened loss and was experiencing inability to copy.

Psychosomatics today is less concerned with individual dynamics and more focused on the nature of the physiological processes whereby psychological and external factors influence internal behavior. This physiological approach has its roots in the work of Pavlov and Cannon in the late 1920s and 1930s. Pavlov (1928) developed the technique of applying measured timed stimuli to animals and measuring visceral functions. Cannon (1935) showed the effects of strong emotional stimuli on visceral activity in experimental animals and demonstrated mobilization of energy for emergency fight or flight. In the decade that followed, Selye and Wolff studied the effect of stress on physiology and behavior. Such interactions of external stimuli and internal body functions are now understood in the framework of control systems physiology. Neural, hormonal, and muscle control systems operate to maintain body homeostasis in the face of external and emotional stimuli. Within this framework, the body's various coordinated functions (like circulation and respiration) maintain relatively constant the internal composition of the body. The cellular activities which comprise these functions follow basic physical and chemical laws (Vander, Sherman, and Luciano, 1980). Thus, the chemical and physical roots of emotion are currently being studied; and research in psychosomatic illness now looks for insufficiencies or disruptions in the physiological control systems to account for psychosomatic symptoms.

Psychosomatic Disorders in Childhood

The study of psychosomatics in childhood developed logically from the same psychoanalytic tradition discussed above, and also within the discipline of pediatric medicine. Psychosomatic reactions in infants and small children have been related to the mother's personality and mother-child relationship. Table 2 lists some psychoanalytic and pediatric theories of childhood psychosomatic disorders. These studies are, by and large, based on observations from clinical material, and the theories generated do not necessarily represent all children with psychosomatic illness. Various illnesses were studied, and the theories and clinical samples on which they were based are not easily compared. The effect of the ill child on the mother is not addressed, nor is the rest of the family considered. These last criticisms hold as well for the only empirical study of these early works, Garner and Wenar's (1959) ambitious comparison of psychosomatic, neurotic, and illness families. Their findings are based on interviews with mothers, Thematic Apperception Test themes, and direct observation of mother-child interaction. They found mothers of psychosomatic children to be driving, rigid, lacking emotional commitment to their infants, and yet also pathologically close. Mothers of neurotic and organically ill children did not show those patterns. Both psychosomatic and organically ill children showed fantasies of illness being related to aggression and transgression. This last finding points up the importance of considering the effect

TABLE 2.--Theories of Psychosomatic Illness in Childhood.

Theorist	Date	Theory of Finding
Cammeron	1919	Enuresis, anorexia, dyspepsia, and constipation considered manifestations of nervousness in childhood.
Kanner	1948	Child seen as "organ of hypochondriasis" for the parent.
Stephanos	1955	Tension between mother and child in early years leads to pregenital object relations and "absolute helplessness towards the primary object".
Garner and Wenar	1959	Psychosomatics in children related to "lack of motherliness", or lack of intuitive responsiveness, to the child's needs.
Forrer	1960	"Psychosomatic compliance": child responds to the unconscious conflicts of the mother.
Grolnick	1972	Childhood psychosomatic illness is a somatic expression of the mother's neurotic conflicts transmitted via unconscious communication.
Sperling	1978	Mother-child relationship and mother's emotions and handling of the sick child lead to a psychosomatic type of object relations.

of the ill child on the mother-child relationship and the family. Organically ill controls are essential to any good study of psychosomatic children.

Consideration of family interactions in the study of psychosomatics in childhood accompanied the general trend in psychology towards systems analyses (Grolnick, 1972). Livsey (1972) suggested that the interpersonal environment of the family as the universal institution of basic relationship must be explored in order to understand the development of somatic symptoms in children. Many theorists have done just that and have identified various patterns of family functioning which seem associated with psychosomatic symptoms. The earliest of such efforts were epidemiological. Characteristics of psychosomatic families were identified, tallied, and compared to normals and other illness groups. Many studies of this nature found higher percentages of illness in immediate families of those with psychosomatic illnesses (Dunbar, 1943; Apley, 1975). The role of heredity was ruled out since fewer children with organic disease than with similar non-organic disease had positive family histories. It was suggested that psychosomatic children model the sick role as learned from their parents (McCord and McCord, 1960).

The study of family relationships, previously confined to the mother-child relationship, was expanded to include fathers. Fathers were found to be compliant and distant in psychosomatic families (Meissner, 1966; Grolnick, 1972).

Most recently, Minuchin et al. (1978) proposed that four transactional patterns characterize families with psychosomatic children: enmeshment, overprotectiveness, rigidity, lack of conflict resolution. This theory encompasses many previous descriptions of psychosomatic families as summarized in Table 3. Minuchin's framework was developed on the basis of his therapeutic work with diabetics, asthmatics, and anorectics; and it is attractive since it cuts across illness types. However, it is based on a population of patients referred for psychological intervention and patients whose families agreed to be treated in family therapy. As such, Minuchin's sample is perhaps not representative of all psychosomatic families. Further, Minuchin's theory does not address the question of etiology, and we are left still wondering if the family causes the illness, or if the illness affects the family. Recent studies (Lipowski, 1977) show that psychiatric complications are common among the physically ill, and that medical and psychiatric complications coexist in 25 to 50% of patients studied in every type of treatment setting.

Before reviewing literature relevant to the effect of chronic illness on family dynamics, the specific illnesses of interest in this study, asthma and recurrent abdominal pain, will be discussed in light of Minuchin's theory.

Asthma

Asthma is a disorder of the respiratory system which results in a narrowing of airways in the lungs causing breathlessness,

TABLE 3.--Theories consistent with Minuchin's Proposed Psychosomatic Family Dynamics.

Theorist	Date	Theory of Finding
ENMESHMENT		
Abramson	1954	Mutual engulfment of mother and child.
Meissner	1966	Psychosomatic children are enmeshed in family emotional interaction.
Loof	1970	Severe separation anxiety in psychosomatic children.
Meijer	1976	Unfulfilled needs of mother cause mutual interdependence between mother and child.
OVERPROTECTIVENESS		
Meijer	1976	Extreme dependency.
Rees	1963	Overprotective parents in asthmatics.
RIGIDITY		
Richardson	1948	Psychosomatics are resistant to change.
Jackson and Yalom	1966	Psychosomatic illness is a reaction to overly rigid rules.
LACK OF CONFLICT RESOLUTION		
Nye	1957	Less psychosomatic illness in broken homes than in unhappy intact homes.
Goldberg	1958	Less open discord and divorce in psychosomatic than behavior disorder group.
Meissner	1966	Tense and conflictual families in psychosomatics.
Loof	1970	Blocked verbal communication in psychosomatic families.
Livsey	1972	Stress in relationship intensifies somatic illness.
Almond et al.	1979	Psychosomatic families teach their children suppression of free expression, especially disagreement.

wheezing, and tightness in the chest. Symptoms are episodic and reversible so that the child is often symptom free. Asthma is thought to affect 2.4% of the population and in 1974 affected 1.2 million school children (Bronheim, 1978).

The etiology of asthma is the subject of heated debate between mental health and medical professionals. Asthma has long been considered psychosomatic, and a prodigious literature represents attempts to establish the psychogenesis of the disease. Medical research has searched for allergy and infection related etiologies. Both the medical and psychological approaches have mistakenly assumed that conditions correlated with exacerbation of symptoms are causal factors (Bronheim, 1978). It is now generally agreed that psychological factors, allergens, and infection can influence onset of symptoms but do not cause the disease. The controversy seems fueled, though, by the fact that the exact physiological mechanism responsible for asthmatic symptomatology is unknown. Most recent research on asthma has examined the physiology underlying asthma. Breathing is regulated by the autonomic nervous system. The walls of the air passages in the lungs are lined with striated muscles, mast cells, and mucus secreting lymphocytes. The size of the air passages is a function of the amount of mucus in the lungs and the size of the striated muscles along the airway walls. Changes in the amount of mucus secreted and in the muscle size occur in response to external irritation, internal irritation (e.g. stress), or at times when the body requires larger amounts of air (e.g. during exercise).

In the framework of control systems physiology discussed earlier, two theories attempt to explain how changes in breathing occur. One concerns the autonomic nervous system, and the other, reflexive processes in the lung. The autonomic nervous system controls the tone of the muscles in the lungs by a balance of bronchoconstriction and bronchodilation. The former is controlled by the parasympathetic system while the latter is controlled by the sympathetic system. The parasympathetic system operates through acetycholine which stimulates hypothesized alpha receptors in the muscle cells. This stimulation leads to constriction of the muscles. The sympathetic system operates through cholinergic stimulation of hypothesized beta receptors in the muscles. When stimulated, these receptors will produce cyclic adenosine monophosphate (cyclic AMP) which leads to dilation of the airway muscles. In normal breathers these two systems balance one another. The second theory stresses the reflexive responses of the lungs to external irritation. The mast cells in the lungs produce histamines when irritated. These histamines lead to the secretion of mucus and to the constriction of the striated muscles along the air passage walls.

It is hypothesized that the physiological control systems above work differently in asthmatics than in normal breathers. One explanation proposes that asthmatics are hypersensitive to external irritation and consequently display symptoms of asthma. Another theory proposes an imbalance of the constriction and dilation in the lungs. Another current hypothesis involves the endocrine

system. Asthmatics are thought to have an inadequate adenylate cyclase system so that beta-adrenergic stimulation by catecholamines never happens. Accordingly, the adenylate cyclase, which is a receptor enzyme that responds to stimulation of the sympathetic nervous system, does not respond to chemical mediators responsible for bronchial dilation. Thus, the system does not effectively counteract the constriction caused by parasympathetic stimulation in response to cold, infection, and emotions.

Although there is strong support for a physiological basis to asthma, it was formerly considered to be psychological in origin. Family dynamics of asthmatics have been studied. Early studies of asthmatics tried to identify a personality profile for the asthmatic. As it was difficult to confirm the existence of such a profile, focus switched from the individual to the mother-child relationship and the family. The mother of the asthmatic has been described as over-protective, engulfing, and dependent on the child, but also as hostile, controlling and rejecting. The asthmatic child has been seen as having difficulty with object relations and dependence-independence conflict. The mother-child relationship has been reported to vacillate between needy interdependence and hostile distancing. These theories are summarized in Table 4. This history of contradictory descriptions of asthmatics suggests that asthmatics are not a homogeneous group as expected.

Family Dynamics.--When it was observed that some children lose their asthmatic symptoms upon hospitalization, the role of

TABLE 4.--Early Studies of the Asthmatic Personality and Mother-Child Relationship.

Theorist	Date	Theory of Finding
ASTHMATIC PERSONALITY		
Fine	1963	Conflict between dependence and independence, patterns of hostility, hypersensitivity, low frustration tolerance.
Knapp	1963	No single or simple personality profile found.
Groen and Bastiaans	1964	Neurotic core of qualities including egocentricity, impatient impulsive behavior, domineering, diminished capacity for adaptation, narcissistic vulnerability, stubbornness, inability to solve interpersonal conflicts by talking, great need for love and affection.
Dubo et al.	1961	Overanxious, latently aggressive, egocentric, bright, orderly, clean, low frustration tolerance, over sensitive, over-demanding, inhibited in expression of feeling.
MOTHER-CHILD RELATIONSHIP		
French and Alexander	1941	Early maternal rejection, asthma as "repressed cry for the mother".
Abramson	1954	Mother and child mutually engulfing.
Sperling	1955	Child rejected when healthy and rewarded for being sick and dependent.
Margolis	1959	Psychosexual conflicts and child rearing attitudes of mothers related to child's asthma.
Garner and Wenar	1959	Mothers are "unmotherly".
Fine	1963	Dependence-independence conflict and hostility between mother and child.
Rees	1963	Mothers overtly rejecting, perfectionists, and overprotective.
Pinkerton	1967	Mothers found to be smothering and overprotective or intolerant and rejecting.
Knapp	1963	Poor differentiation between mother and child, hostile dependence, "symbiotic equilibrium".

the family was explored in controlled studies (Long, 1958; Peshkin and Abramson, 1959; Purcell, 1969). Characteristic of these studies was Purcell's design attempting to determine if separation from the physical or emotional environment accounted for the dramatic progress in controlling symptoms. He studied asthmatic children in the hospital with and without their families, and at home with and without their families. He concluded that for some children, asthmatic symptoms seemed to be maintained by factors within their families. Unfortunately, these studies do not shed light on the specific family dynamics responsible. Also, only intractable asthmatics, or those unresponsive to medical control, were studied, so that the findings cannot be generalized to all asthmatics.

Liebman, Minuchin, and Baker (1974) identified specific characteristics of family organization associated with chronic, severe, relapsing asthma. They report that chronic unresolved conflict in the family complicates the course of a child's asthma. Minuchin's (1978) later theory of psychosomatic family patterns reviewed earlier, was based, in part, on observations and family therapy with these uncontrolled asthmatics. Others have lent empirical support to Minuchin's theory of enmeshed, conflictual families in relation to psychosomatic children. Studies of specific and isolated family dynamics have reported constant emotional repression, unclear communication, family rewards for symptomatic behavior, marital conflict, submerged family conflict, and lack of appropriate social activity (enmeshment) in families of asthmatics (Block et al., 1966; Kluger, 1969; Meissner, 1966;

Wikran, Faleide, and Blakar, 1978). Samples of asthmatic children used in these studies are rarely described adequately or are patients referred for psychological services.

Some recent studies have examined asthmatics in general to determine whether or not they are a homogeneous group. This work follows the thrust of Purcell's earlier observations that family dynamics impact only some asthmatics. Dubo, McClean, Ching, Wright, Kaufman, and Sheldon (1961) studied asthmatics who were being treated not by psychologists but by allergists in general practice. Each child and family was rated on a variety of medical, individual, and family adjustment measures. Dubo et al. reasoned that if asthma was a psychosomatic disorder, they should find a strong positive relationship between severity of the child's disorder, the reaction to treatment, and family adjustment. They found only that asthmatic children who were poorly adjusted in school came from poorly adjusted families. Otherwise, they found asthmatics to be a heterogeneous group with no relationship between family functioning and asthma course. Inclusion of a group of intractable asthmatics would perhaps have given a fuller picture. A ten year follow-up (McLean and Ching, 1973) showed no differences in asthma course between children with good and poor family adjustment. However, of eight families referred for psychiatric treatment, only one was from the good adjustment group. The authors conclude that despite negative findings, family situation does "have a direct effect on the adjustment of the child with asthma,

on his adaptation to the illness, and on the level of limitation the asthma imposes" (p. 160).

On the other hand, Block et al. (1964) brought evidence that there may be an inverse relationship between allergic potential of a child and psychopathology in the mother. They suggested two types of asthma: biogenic and sociogenic. However, their projective testing of asthmatic children failed to indicate a single asthmatic personality. Personality factors were not related to severity of asthma, but allergic potential was inversely related to responsiveness to treatment.

Controversy thus remains as to whether asthmatics are a homogeneous group or can be divided into biogenic and sociogenic subgroups. The question is confused since some researchers examine general populations of asthmatics while others study asthmatics referred for psychiatric treatment. It is suggested that families of asthmatics are enmeshed, overprotective, and show submerged conflict; but these findings are generally based on samples of intractable asthmatics referred for treatment. These findings have not been confirmed on general samples of asthmatics. Nor have family dynamics of asthmatics been compared to those of other chronically ill groups.

Recurrent Abdominal Pain

Recurrent abdominal pain is one of two subgroups of the Irritable Bowel Syndrome (IBS). IBS is a spectrum of disorders of bowel functioning including stool retention, cholic, intermittent

diarrhea, constipation and recurrent abdominal pain. It is thought to encompass the old diagnostic category of mucous colitis. Less than 10% of children referring with these symptoms are found to have obvious organic basis, and at least two thirds are referred because of functional disturbances (Silverberg and Daum, 1979). Most agree that the Irritable Bowel Syndrome represents "nervous manifestations" (Young et al., 1976).

Almy (1951) did laboratory experiments with subjects with healthy and irritable colons and connected IBS to psychological states. He found that, "in patients with irritable colon, as with healthy persons, disturbances of the motility of the sigmoid colon occur quite regularly in association with emotional conflict" (p. 65). IBS appears highly correlated with other neurotic manifestations, especially hysteria and depression (Young et al., 1976). The personality of IBS patients has been described. They are found to be strikingly sensitive and insecure, worrisome, mature yet dependent, and having a high personal sense of duty to do things right. When compared to normals, children with abdominal pain show more characteristics of emotionally disturbed children including undue fears, nocturnal wetting, sleep disorders, appetite disorders, nervousness, fussiness, excitability, anxiety, timidity, apprehension, and overconscientiousness (Stone, Barbera, and Gulio, 1970; Apley and Naish, 1958; Heinild et al., 1959; Sperling, 1978).

The parents of IBS children have a high level of marital discord, chronic depression, and alcoholism (Green, 1962). Other characteristics include unsatisfying parent-child relationships,

overly severe discipline, favoritism of another child, excessive pressure for accomplishment, inconsistent discipline, too many prohibitions, and lack of attention to the child as an individual (Green, 1962). Similar complaints or other somatic symptoms like headaches have been noted in the parents, mostly mothers, of children with recurrent abdominal pain. It has been suggested that the pain behavior may be learned from the family (Oster, 1972).

Family Dynamics.--Family dynamics have been studied in IBS children. Stone et al. (1970) noted intense closeness hampered the development of independence and coping behaviors in the children. Abdominal pain has been noted to occur in relation to conflict or crisis in the family and may serve to relieve the tension in the family (Prugh and Shackmen, 1955; Heinild, et al., 1959; Green, 1962). In Apley's (1975) sample of 1,000 children with pain, he found discord in home or school correlated with the first attack of pain for some children. He also found over-protective and extremely anxious parents in a high percentage of cases. For those who had no organic disease, family history and stress situations seemed correlated with attacks. He concluded: "From all the evidence, it appears justifiable to conclude that in a large proportion of children with recurrent abdominal pain, the criteria of stress disorder are fulfilled. Organic disease is not demonstrable: emotional disturbances are the rule, and like attacks of pain, are often preceded or exaggerated by a stressful situation: and psychotherapy is usually helpful" (p. 93).

Irritable Bowel Syndrome in general, and recurrent abdominal pain specifically, resemble other emotional disturbances and are often of psychogenic etiology. Consistent with Minuchin's theory of psychosomatic families, extreme family closeness or enmeshment, marital conflict, family stress, and overprotection have been identified in these families. Most research on recurrent abdominal pain comes from the medical literature, and the studies describe the characteristics of disturbed children and families typical of IBS patients. However, they do not suggest whether the illness is a symptom of emotional disturbance or vice versa. Children with recurrent abdominal pain and their families have rarely been compared to other populations of organic or psychosomatically ill children.

The Effect of Chronic Illness on Families

Overprotectiveness, enmeshment, marital conflict, submerged stress and rigidity have been identified in families with psychosomatic children. It is most often assumed that these family dynamics have some impact on the development and course of psychosomatic illness. However, it is possible that disturbed family functioning is the family's response to the stress of having an ill child (Livsey, 1972). Another theory suggests that illness only exacerbates previous difficulties and or pathology in the family.

Parents of psychosomatics have been found to be overprotective, and families, enmeshed. Livsey (1972) suggested that parental reactions to illness of covert anger and guilt can lead to

overprotectiveness. Hughes (1976) found that illness thwarts (to variable degrees) acquisition of independence so that children would appear dependent and close to family. Also, the family's reactions to their fears about the sick child may appear as enmeshment. Parents have a tendency to stop disciplining sick children, and they tend to over-indulge them (Hughes, 1976; Mattson, 1972). On the other hand, Steinhausen (1976) studied a group of chronically ill children and found no increased levels of overprotectiveness in mothers.

As regards conflict and stress in families, the chronically ill child can induce complications in his illness as a weapon with which to control the parents (Livsey, 1972). In such a way, the illness can promote marital conflict. Family relationships change such that one parent, usually the mother, takes over. The spouse and other children often feel left out or neglected. Feelings are often not expressed due to guilt about anger with the sick child, so that stress is produced and submerged in the family (Almond et al., 1979). In addition, parenting a chronically ill child engenders psychological stress, dysphoric moods, and low self-esteem (Cummings, 1976).

Others suggest yet another theoretical position, that chronic illness becomes only a focus for previous difficulties in the family. For instance, a sick child may become the focus of parental interaction when the marital relation is already poor (Livsey, 1972; Lowit, 1973). Children with gross emotional immaturity are thought to be from families which were unhealthy before

the illness. If the family fails to adapt to the illness, the family may break down, but the ability to cope with illness seems related to how the family copes with life in general (Lowit, 1973). Likewise, Hughes (1976) found that the adjustment of a child to illness depends a great deal on the attitudes of parents and the child's emotional balance prior to the illness.

Childhood Leukemia.--Leukemia is the most common form of cancer in childhood. It is characterized by the abnormal accumulation of immature leukocytes which are proliferating more slowly than normal marrow cells. The prognosis for children with acute lymphocytic leukemia (the most common type, accounting for 80% of children with leukemia) has changed considerably in the past ten years. With advances in early diagnosis and effective chemotherapy regimens, over 90% of children will attain remission and 50% will survive five years or more free of any evidence of leukemia. Therapy has been stopped in some long-term survivors who have enjoyed remission for years. Thus, leukemia, once considered a fatal disease, must now be treated as a chronic disease. However, leukemia presents special stresses for families due to costly, frequent, and painful clinic procedures, fear surrounding relapses, and the looming possibility of death.

Because having a child with leukemia is quite stressful, parents of leukemic children have organized support groups (Briscoe, 1972). Simultaneously, comprehensive care clinics have become aware of the psychological needs of these families and children, and they

have undertaken to study the coping patterns of families. Questionnaire and interview data have yielded much information, some conflicting, about the effect of a leukemic child on his or her family.

Families of children with leukemia face problems similar to those noted above in families dealing with any chronic illness. There are increased financial burdens, problems of transportation to clinics, and difficulties caring for other children (Bozeman, Orbach, and Sutherland, 1955). Reactions of anger and guilt are common in parents of leukemics. The illness is sometimes felt to be a punishment for the parents' past wrong-doings (Bozeman et al., 1955; Lukens and Miles, 1970). Also, as with any ill child, parents find it difficult to discipline the leukemic child, and siblings often feel neglected, angry, and guilty about their feelings (Briscoe, 1972; Binger, Ablin, Feuerstein, Kushner, Zoger, and Mikkelsen, 1969).

Other coping styles or defense reactions found in parents of leukemic children include isolation of affect, denial, use of religion, increased motor activity, search for meaning, withdrawal, and idealization of the ill child (Lukens and Miles, 1970). Parents have been noted to react with depression, frustration, and a sense of futility (Heffron, Bommelaere, and Masters, 1973). It seems noteworthy that these dynamics resemble those found in persons dealing with death and loss. These coping styles may be more related to anticipatory mourning than to the effect of a chronically ill child.

The problem of isolating the effect of living with and caring for a leukemic child from the effects of losing the child are evident in a study by Binger et al. (1969). They interviewed twenty families whose leukemic children had died. They found a high incidence of divorce in these families. Also, emotional disturbance requiring psychiatric help in one or more family members was reported in over half of the families interviewed. The high numbers of disturbed family members may reflect unresolved loss rather than the effect of illness on the family. Chodoff, Friedman, and Hamburg (1964), for instance, found that most parents in their study of 46 parents of children with neoplastic disease (mainly leukemia) "were able to function effectively during the period of illness, carrying out whatever tasks were necessary without being overwhelmed with despair or anxiety, at the same time preserving their own personalities, maintaining key relationships, and a measure of self esteem" (p. 743).

Patterns of interaction and coping styles of a family prior to diagnosis of leukemia affect how the family will cope. Binger et al. (1969) concluded from their interviews of twenty families, that each parent and child reacted to the diagnosis of leukemia individually and in ways consistent with their own personality structures. Although there tends to be a breakdown of communication between parents and withdrawal by husbands (Briscoe, 1972), Bozeman et al. (1955) found only two families in the twenty they studied in which the marital relationship offered no emotional

support. Those two couples had overt marital difficulties before the diagnosis. Those authors also reported that the fathers' ability to communicate solidarity and compassion was of great importance in the long-term adaptation of the family.

Open communication plays an important role in the adaptation of the leukemic child and the family. Families who are open about the diagnosis report more meaningful relationships and adaptation to the illness (Binger et al., 1969). Leukemic children who are talked with honestly about their illness show fewer behavior problems and emotional disturbances (Lansky et al., 1975; Vernick and Karon, 1965).

To summarize, some theorists believe that chronic illness impacts families so as to produce dynamics such as the overprotectiveness, submerged stress, marital conflict, and rigidity noted in psychosomatic families. Others believe that illness only exacerbates and brings into focus previously existing problems.

Research on family reactions to childhood leukemia shows that leukemia impacts the family much like any other chronic illness. There appears to be a heightened incidence of stress, marital discord, and emotional disturbance in families of leukemics. However, such disturbances may be related to anticipatory mourning and pathological mourning after the loss of the ill child and are thus not necessarily characteristic of families of surviving leukemics with a favorable program. In fact, several surveys have suggested that families respond to and cope with a diagnosis of

leukemia according to their communication skills, marital adjustment, and general adaptability prior to diagnosis of the ill child.

STATEMENT OF PROBLEM AND HYPOTHESES

Minuchin et al. (1978) have identified enmeshment, overprotectiveness, rigidity, and lack of conflict resolution as four transactional patterns characteristic of psychosomatic families. According to their theory, asthma is a "primary" psychosomatic disorder since a physiological dysfunction is present and can be exacerbated by emotional stress. Recurrent abdominal pain is a "secondary" psychosomatic disorder and represents a transformation of emotional conflicts into somatic symptoms. Minuchin et al. believe that the transactional patterns above encourage somaticization and are typical of all psychosomatic families, that is, all families that express emotional disturbance somatically. Accordingly, most children with recurrent abdominal pain are psychosomatic whereas not all asthmatics are psychosomatic. In contrast, leukemia is a chronic and sometimes fatal disease which is rarely considered psychosomatic. On the basis of this theory then, one would expect pathogenic family dynamics in most families of children with abdominal pain, in some but fewer families with an asthmatic child, and in a small number of families with a leukemic child. If, on the other hand, disturbances noted in psychosomatic families are the effect of the stress and upheaval associated with caring for a chronically ill child, one would expect families of leukemics (as the most stressed of these populations) to show the

most pathological family dynamics. Some theorists believe that family dynamics in relation to a child's illness depends on the family's adaptability and adjustment prior to the illness. In that case, children with abdominal pain, by definition the transformation of emotional conflicts into somatic symptoms, should show a high frequency of family maladjustment. Asthmatic and leukemic families should show similar and random levels of maladjustment.

The purpose of this study, then, was to clarify the role of family functioning in relation to childhood psychosomatic illness. Families of children with abdominal pain, asthma, and leukemia were compared on dimensions of adjustment, adaptability and cohesion. Extremes on these dimensions have been identified in the literature as characteristic of families with psychosomatically ill children. The instruments chosen to measure these dimensions have been shown to discriminate normal from problem families.

It was hypothesized that, in accordance with Minuchin's theory of psychosomatic family patterns, abdominal pain families would show the highest levels of child related problems, lowest marital adjustment, and most extreme levels of family cohesion (enmeshment or disengagement) and adaptability (rigidity or chaos). The research on asthma suggests that there are some asthmatics who are very reactive to emotional stimuli and others who are not. It was hypothesized that measures of psychosomaticism would distinguish a sub-group of psychosomatic asthmatics who would show patterns of family functioning like those hypothesized for the Abdominal Pain

Group. Finally, leukemics, as a highly stressed but non-psychosomatic group, were expected to show moderate levels of child adjustment, marital adjustment, cohesion, and adaptability.

METHODS

Subjects

Forty-five families with an ill child participated in the study. Fifteen families comprised each of three illness groups; leukemia, asthma, and abdominal pain.

Leukemia Families.--This group consisted of families with a child diagnosed with leukemia of the acute lymphocytic type and judged by the child's oncologist to be in remission or responding well to treatment. These families were identified and contacted through the pediatric hematology and oncology clinics of the Michigan State University Clinical Center, East Lansing, Michigan, and University of Michigan's Mott Children's Hospital in Ann Arbor, Michigan.

Asthma Families.--This group consisted of families with a child diagnosed with asthma. All asthmatic children had been diagnosed for at least one year. These families were enlisted through the Pediatric Pulmonary Clinic at Michigan State University Clinical Center.

Abdominal Pain Families.--This group consisted of families with a child diagnosed with Recurrent Abdominal Pain for which no organic cause was apparent and which the treating physician considered to be psychogenic. Abdominal Pain families were enlisted

through private pediatricians in East Lansing, Michigan and a pediatric gastroenterologist at Beaumont Hospital in Detroit, Michigan.

All families participating in the study had no more than five children and had two parents living in the home. All couples had been married for at least two years. Identified patient children ranged in age from 6-0 to 13-3. There were no significant differences between illness groups in age and sex of identified patient children, years married and educational level of the parents, number of children in the family, and religious affiliation. Table 5 and Table 6 summarize the demographic characteristics of the three illness groups.

Definition of Terms

The following variables were measured in each family group participating in the study:

1) Family adaptability: the ability of the family system to change its power structure, role relationships and relationship rules in response to stress (Olson, Sprenkle, and Russell, 1979).
2) Family cohesion: the emotional bonding and individual autonomy that family members experience in the family system, ranging from enmeshed to disengaged (Olson et al., 1979; Minuchin, 1974).
3) Marital adjustment: quality of the marriage relationship as perceived by the husband and wife.

TABLE 5.--Mean Values on Demographic Variables for Three Illness Groups.

	Age of Child	Years of Marriage	Years of Parent Education	Number of Children
Leukemia	10.28	11.93	26.87	3.2
Asthma	9.61	12.67	27.93	2.53
Pain	8.91	11.87	27.47	2.47

TABLE 6.--Distributions of Sex of Patient Child and Religious Affiliation for Three Illness Groups.

	Sex of Child		Religious Affiliation					
	Male	Female	Catholic	Prot-estant	Jewish	Other	Mixed	None
Leukemia	9	6	5	8	0	0	1	1
Asthma	5	10	4	7	0	1	1	2
Pain	6	9	4	6	1	1	2	1

4) Adjustment of child: the degree to which the identified patient child shows problem behaviors as perceived by the child's mother.

The literature on asthma suggests that there are some asthmatics who are reactive to emotional stimuli and others who are not. Likewise, it has been suggested that highly allergic asthmatics do not show levels of neuroticism as high as non-allergic asthmatics (Feingold, 1962). What then of the voluminous literature of the disturbed mother-child relationship and family dynamics of asthmatics? Dubo, McLean, Ching, Wright, Kaufman, and Sheldon (1961) have cautioned that only intractable asthmatics, or those who do not respond to medication, are referred for psychological services, and that these patients comprise the samples from which hypotheses of psychogenesis have been drawn. Perhaps then, asthmatics referred for psychological services reflect the characteristics described in the literature but do not represent all asthmatics. In this study, an attempt was made to distinguish psychosomatic asthmatics, or asthmatics who are highly reactive to emotional stimuli, from asthmatics whose illness is primarily organic and not susceptible to emotional influences. Therefore, the following variable was assessed in the Asthma Group only:

5) Psychosomaticism: the degree to which psycho-social factors affect disease course.

Instruments

The Family Adaptability and Cohesion Evaluation Scales (FACES) (Olson, Bell, and Porter, 1978) was used to measure cohesion and adaptability in the family. FACES is a 111 item self-report measure. Each question is answered on a scale of 1-4 representing responses of 'always', 'most of the time', 'some of the time', and 'never', repsectively.

The cohesion dimension is comprised of 9 sub-scales of 6 items each, or 54 items. The subscales include emotional bonding, independence, family boundaries, coalitions, time, space, friends, decision making, and interests and recreation. The adaptability dimension is comprised of 7 subscales of 6 items each, or 42 items. These subscales include assertiveness, control, discipline, negotiation, roles, rules, and system feedback. In addition to the cohesion and adaptability dimensions, 15 items comprise a social desirability scale designed to measure the extent to which responses reflect idealistic rather than actual conditions in the family.

Ratings by marriage and family counselors and factor analyses have shown FACES to have a high degree of clinical and construct validity in measuring adaptability and cohesion. A study using 603 subjects found internal consistency coefficients of $r = .75$ for adaptability and $r = .83$ for cohesion. Split-half reliability for individual subscales was low (Portner and Bell, 1980).

The Family Wellness Scale is a 10 item version of the FACES questionnaire. It was designed for use with children under 12. It yields scores from 0 to 20 for cohesion and adaptability.

The Spanier Dyadic Adjustment Scale (Spanier, 1976) was used to measure marital satisfaction. The scale is a 32 item self-report measure. Each item is answered on a six point scale. The scale was well constructed and scores correlate highly with other measures of marital adjustment. The scale has successfully differentiated married couples from divorced couples. Factor analysis of the scale revealed four interrelated components of dyadic adjustment: dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression. Using Cronbach's coefficient Alpha estimate of internal consistency, the entire scale showed a reliability of .96. Reliability of the subscales ranged from .73 to .94.

The Child Behavior Checklist (Achenbach, 1980) is a list of 113 items describing children and their behavior and habits. It is designed to be filled out by parents. Each item is marked 0, 1, or 2, representing 'not true', 'somewhat or sometimes true', or 'often true', respectively.

The checklist yields a profile consisting of three social competence scales and eight to nine behavior problem scales. The problem behavior scales vary according to sex and age. The scales were derived through factor analysis of checklists filled out by parents of 450 boys and 450 girls referred for mental health services. A second order factor analysis found 2 groupings of

behavior problems labeled 'internalizing' and 'externalizing' for all samples.

Validity of the profiles has been demonstrated. Clinical and non-clinical samples of children, regardless of sex and age, differed on all behavior problem and social competency scales ($p=.001$). One-week test-retest reliability averaged .87 and inter-parent correlation averaged .67.

Two instruments, Physician Rating of Psychosomaticism and Asthma Precipitant Survey were used with asthmatic families only to determine if some asthmatic children are reactive to emtional stimuli and can be discriminated from those who are not.

Physician Rating of Psychosomaticism was obtained for asthmatics only. In this context, the term 'psychosomaticism' is used to mean the degree to which psychological factors affect the disease process and course.

Degree of psychosomaticism was estimated by a rating by the asthmatic child's physician. The physician rated the child on a scale from 1 to 5 as to the impact of psychological and emotional variables on the child's asthma. A score of 1 indicates little emotional involvement, or asthma exacerbated primarily by external irritants and allergens. A score of 5 represents an asthma exacerbated predominantly by stress, emotions, or other psycho-social influences.

Eight asthmatics attending the pulmonary clinic at Michigan State University's Clinical Center for routine checkups of their

asthma were rated on the psychosomaticism scale by 3 members of the health care team. The team included the pulmonary specialist M.D., pulmonary nurse, and the pediatric psychologist. Inter-rater reliability between the two raters who rated all of the patients was .82. Eighty-nine percent of all pairs of ratings were within one point of each other. Scores ranged from 1 to 5.

Asthma Precipitant Survey (APS) was adapted from Purcell and Weiss (1970) by Renne for use at the National Asthma Center in Denver. The survey is a list of possible physical and emotional precipitants of asthma attacks. The mother of the asthmatic child was asked to check and rank the precipitants that she had witnessed bringing on an asthma attack in the child. The total number of different emotions that were reported as having triggered or aggravated the asthma in at least one precisely recalled circumstance was the score on the APS (Tal and Miklich, 1976).

Tal and Miklich (1976) used the Asthma Precipitant Survey in a study measuring emotionally induced decreases in pulmonary flow rates in asthmatics. The validity of APS was demonstrated by their finding that precipitant surveys were significantly correlated with emotionally induced change in pulmonary functioning. Specifically, children with a reported history of emotional triggers to their asthma were more likely to show breathing difficulties in response to situations of fear and anger recalled in the experimental setting.

Procedures

Enlisting Subjects.--The parents of potential subjects were given a written form or telephoned by the clinic nurse to ask their consent to be contacted about the study. The form was given to parents and explained by the child's doctor or a nurse at the clinic at the time the child was there for treatment (see Appendix A).

Those families consenting to be contacted were telephoned by the experimenter. The study was explained in more detail on the telephone. It was described as a study of the effects on families of having a child needing frequent medical care. The time commitments involved and the procedures for collecting the questionnaire data were described. For families who remained interested in participating, an appointment time to collect data was set. A letter describing the study (Appendix B) was sent to those families. Informed consent forms (Appendix C) were signed at the time of data collection.

Data Collection.--Parents and children were seen in their homes for the data collection. The nature of the research was briefly described to the family. The researcher interviewed the parents to gather demographic information including number of children in the family, years married, educational level of parents, and religious affiliation.

Each parent was asked to fill out FACES (Appendix D) and the Spanier Dyadic Adjustment Scale (Appendix F). Simultaneously,

the child filled out the Family Wellness Scale. Older children were permitted to read the items and circle their answers. Younger children and children who had difficulty reading or understanding the items had the items read to them by the researcher and indicated their answers by pointing to the preferred response (see Appendix E).

The Child Behavior Checklist (Appendix G) was filled out on the identified patient child by the mother.

The Asthma Precipitant Survey (Appendix H) was filled out by the mothers of asthmatics. They were asked to check which affects had precipitated or aggravated the child's asthma. In the column marked "Statements of Verification", the mother was required to write at least one precisely recalled incident when that affect precipitated or aggravated an asthma attack.

Parents of asthmatics signed a consent form to enable the researcher to ask the child's pulmonary specialist for his or her opinion of precipitants of the child's asthma (see Appendix I). The physician was given a description of the rating scale for asthmatics and asked to rate the asthmatic patient accordingly. The Physician's Rating of Asthmatic Patients is reproduced in Appendix J.

RESULTS

Illness group means and standard deviations for all variables appear in Table 7. All families in the study had an ill child and thus represent a homogeneous group. The standard deviations of scores from this sample did not differ from standard deviations reported for the normative population. The reliability of measurement can thus be assumed to be the same as reported for the instruments' norm groups. Standard deviations for the scores on the FACES instrument in the present sample and in the standardization sample are in Appendix O.

Mixed model analyses of variance tested the hypotheses about parent perceptions of family adaptability, family cohesion, and marital satisfaction in the three groups. The hypotheses that the Pain Group would show the most extreme scores and the Leukemia Group the most moderate scores in family adaptability and family cohesion were not supported. There were, however, significant differences in adaptability between mothers and fathers across groups, as shown in Table 8. The hypothesis that the Pain Group would have the lowest level of marital adjustment and the Leukemia Group the highest level of marital adjustment was not supported. But, a significant interaction effect was found, and the differences between Mother and Father marital satisfaction varied between groups as shown in Table 8.

TABLE 7.--Means and Standard Deviations of Dependent Measures by Illness Group.

	Leukemia		Asthma		Pain		Total	
	Mean	S.D.*	Mean	S.D.	Mean	S.D.	Mean	S.D.
Mother Adaptability	169.86	13.02	169.46	10.65	168.93	17.48	169.42	13.69
Father Adaptability	179.47	11.49	176.53	13.08	170.80	15.23	175.60	13.54
Mother Cohesion	255.40	16.85	260.67	17.95	262.93	27.46	259.67	21.04
Father Cohesion	261.53	20.75	256.13	16.54	267.67	16.16	261.78	18.16
Mother Marital Adjustment	113.53	18.26	121.80	12.33	115.80	9.21	117.04	13.92
Father Marital Adjustment	119.07	9.35	112.40	21.25	113.27	9.18	114.91	14.40
Child Adaptability	12.40	1.99	12.33	2.74	14.00	2.75	12.91	2.58
Child Cohesion	14.13	2.26	14.93	2.94	15.53	2.39	14.87	2.55
Child Activities**	53.60	8.27	50.47	10.97	51.67	15.72	51.91	11.85
Child Social Behavior**	49.86	8.12	48.80	11.77	47.33	8.49	48.67	9.44
Child School Adjustment**	54.13	15.46	59.00	11.53	42.27	20.12	51.80	17.25
Internal Behavior Problems**	49.13	10.20	47.80	19.02	36.78	10.99	44.56	11.36
External Behavior Problems**	49.60	8.81	51.33	10.91	43.13	9.51	47.69	10.16
Mother Social Desirability	42.50	4.20	43.50	5.30	40.30	5.20	42.13	5.00
Father Social Desirability	43.00	5.40	44.00	5.70	42.30	4.60	43.11	5.17

*Standard Deviation
**Scores are T scores from norms. High score indicates few behavior problems.

TABLE 8.--Parents' Adaptability and Marital Adjustment Scores: Analysis of Variance Results

		Mean Scores			Source of Variation	F	Significance Level
		Leukemia	Asthma	Pain			
Adaptability	Mother	169.86	169.46	168.93	Sex of		
	Father	179.46	176.53	170.80	Parent	6.38	.0154
Marital	Mother	113.53	121.80	115.80	Interaction Parent with		
Adjustment	Father	119.07	112.40	113.27	Illness Group	5.30	.0089

Simple analyses of variance were applied to children's scores on adaptability and cohesion and to measures of child behavior. The hypotheses that children's perceptions of adaptability and cohesion would be most extreme in the Pain Group and most moderate in the Leukemia Group were not supported. The hypothesis that children with abdominal pain would exhibit most signs of emotional disturbance was confirmed for two variables. Table 9 summarizes the significant findings. The Pain Group had more school problems and more internalized behavior problems than the other two groups.

It was hypothesized that the measures of psychosomaticism would distinguish within the asthma group a sub-group of "psychosomatic asthmatics" who would show more disturbed family dynamics and child behavior than the rest of the Asthma Group. Physician ratings of psychosomaticism and scores on the Asthma Precipitant Survey showed a low positive correlation ($r = .37$), and the two scores were summed to yield a single psychosomaticism score for the Asthma Group. The seven asthmatics with psychosomaticism scores above the group mean were considered psychosomatic asthmatics and the eight scoring below the mean were considered non-psychosomatic. T-tests confirmed the hypothesis for 5 variables, as summarized in Table 10. Mothers of the psychosomatic asthmatics were more disengaged, and fathers of the psychosomatic asthmatics were more rigid. Mothers and fathers in the psychosomatic sub-group reported lower marital satisfaction. The psychosomatic asthmatic children

TABLE 9.--Significant Differences Between Illness Groups from Analysis of Variance on Scores on the Achenbach Child Behavior Checklist.

Variable	Illness Group	Mean	F	P
School Adjustment	Leukemia	54.13		
	Asthma	59.00	4.29	.0201
	Pain	42.27		
Internal Behavior Problems	Leukemia	49.13		
	Asthma	47.80	6.81	.0027
	Pain	36.73		

TABLE 10.--T-tests of Differences in Mean Scores on Dependent Variables for Psychosomatic and Non-Psychosomatic Asthmatics.

Dependent Variable	Psychosomatic Mean	Non-Psychosomatic Mean	t	p
Mother Adaptability	167.0	171.5	1.14	N.S.*
Father Adaptability	171.0	181.0	2.20	.025
Mother Cohesion	252.0	269.0	3.00	.005
Father Cohesion	255.0	256.0		N.S.
Mother Marital Adjustment	116.0	126.7	2.68	.01
Father Marital Adjustment	103.0	120.0	2.30	.025
Child Activities	51.6	49.5	.51	N.S.
Social Behaviors	55.0	43.3	2.97	.01
School Adjustment	60.6	58.0	.60	N.S.
Internal Behavior Problems	42.0	53.0	2.67	.01
External Behavior Problems	45.0	57.0	3.38	.005

*Non-significant

had more internalized and externalized behavior problems than the non-psychosomatic asthmatic children.

DISCUSSION

Although children with psychosomatic illness are more disturbed than children with more organically based illnesses, there is no parallel difference in their family dynamics. The rigidity and enmeshment proposed by Minuchin to be characteristic of families with a psychosomatic child do not distinguish the psychosomatic families in this study from families with an ill but not psychosomatic child. However, within a single illness group, asthma, psychosomatic prone children could be distinguished from more organic asthmatics and family dynamics varied between the two groups.

Implications of Significant Findings

Behavior of children in this study differed between groups in the direction expected. Those with abdominal pain had more internalized behavior problems and poorer school adjustment than children in the other groups. This finding is particularly important in light of the absence of differences between groups in family dynamics. Recall that the Pain Group was found to be a more psychologically disturbed set of children. The theories discussed earlier view recurrent abdominal pain as an internalized expression of stress. Items endorsed on the Achenbach Child Behavior Checklist by this group confirm descriptions in the literature of recurrent abdominal pain children as anxious, timid, fearful, and nervous.

The Pain Group also showed considerably more school problems, including low grades, special classes, and repeated grades. It is unlikely that this finding is related to school absence, since leukemics tend to miss more school than children with abdominal pain. The relationship of abdominal pain to school difficulties should be explored further. Psychogenic pain may be a symptom secondary to learning problems, separation difficulties, or other factors contributing to a school phobia.

The Family Wellness Scale proved to be a dubious instrument, perhaps contributing to the lack of significant differences between groups for children's perceptions of adaptability and cohesion. Many items were poorly worded and difficult for children to understand. The questionnaire was short so that one item held much weight in the final scores. On both measures, only a 15 point range was possible, and scores clustered at the midpoint. Further, the child measures did not correlate with any of the parent perceptions of the same constructs.

There were only two minor and unexpected differences between the families. In marital satisfaction, the largest discrepancy between mother and father scores occurred with the Asthma Group. The Psychosomatic Asthmatics showed even more discrepancy between mothers and fathers, and the Non-psychosomatic Asthmatics showed less discrepancy than the Asthma Group as a whole. High discrepancy between Mother and Father marital satisfaction in Psychosomatic Asthmatics is consistent with the theories reviewed earlier that the asthmatic child gets used to meet unfulfilled needs in the

marriage, and that fathers are blind to the needs of mothers in asthmatic families (Meijer, 1976; Block, 1966). But, one very low score (44) amongst the Asthma Fathers depressed the mean for Asthma Fathers. Without that score, marital satisfaction for Asthma Fathers is not so discrepant from the mothers. Even without the low score, Mothers had higher marital satisfaction than fathers in the Asthma and Pain Groups but lower than fathers in the Leukemia Group. Leukemia Mothers may have lower marital satisfaction due to the demands and stresses imposed by the medical regimen of a child with leukemia. The literature suggests that mothers often take responsibility for the ill child and feel unsupported by the father. The incidence of divorce is high in families with a leukemic child (Binger, et al., 1969).

On adaptability, Mothers were more structured (tending towards rigid) than fathers across groups. Mothers in this study were possibly so structured due to the demands of caring for an ill child while also attending to the needs of the remaining family. Mothers in the three groups had very similar scores on adaptability so that any differences between groups would have been accounted for in the Father scores. Although there were no statistically significant differences, Pain Fathers scored more rigid than Asthma and Leukemia Fathers, as predicted. Likewise for cohesion, group differences were in the direction predicted although not significant. Lack of significant group differences may be due to small sample size.

Family Adaptability and Cohesion Evaluation Scales

The literature on the constructs of cohesion and adaptability and on the FACES instrument suggest that parents of children showing problem behaviors (Pain Children and Psychosomatic Asthmatics in this study) should show extreme scores on FACES. In the circumplex model underlying the FACES questionnaire (Olson et al., 1978), sixteen family types are defined (see Appendix K). Families with moderate scores on both scales are considered healthy while extreme scores on either or both scales are pathological. The table in Appendix L summarizes the family typologies by parent and illness group for families in this study. The table in Appendix M shows that there were no significant differences between illness groups in the distribution of extreme and moderate family typologies, even though the Pain Group had the greatest number of extreme families.

Scatter plots (Appendix N) of the adaptability and cohesion scores for Mothers, Fathers, and Mothers and Fathers combined, show that scores for this sample were above the normative mean on cohesion and below the mean on adaptability. The t-tests summarized in Appendix O confirmed that sample means were significantly higher than the normative means for cohesion and for social desirability and significantly below the normative mean on adaptability. The mean for Mothers in this sample falls at the rigid end of the structured-connected category. The mean for Fathers falls in the middle of the structured-connected category.

The lack of differences in family dynamics between groups along with the variations from the norms across groups suggest that the fact of having an ill child is reflected in the FACES scores. Olson et al. (1978) report that families change their cohesion and adaptability patterns to adjacent levels to deal with situational stress and changes in the family. Minuchin (1974) notes that some families increase the rigidity of their patterns and boundaries when stressed. A chronically ill child certainly qualifies as a family stress and might account for the tendency towards rigidity in all groups. Likewise, it is reasonable to expect that families may draw closer to care for a young ill child, accounting for the somewhat elevated scores on cohesion. Thus, the rigidity and enmeshment purportedly characteristic of psychosomatic families may in fact be typical responses of families coping with the stress of a chronically ill child.

Family systems change at critical stages of the family life cycle (Olson et al., 1978). Differences between the family life cycles of the present sample and the normative population may account for the variation of this sample from the norms. The children in this study ranged in age from six to thirteen; the mean age was 9.5. The FACES norms are based on families with adolescent children. Elevated levels of connectedness and structure in this sample may reflect the needs of young children in a family and would be more pathological if found in a sample of adolescents.

Despite the lack of difference in family dynamics between groups, psychosomatic and non-psychosomatic asthmatics could be

distinguished by differences in family functioning. Children in the Psychosomatic Group showed more behavior problems. That Psychosomatic Fathers were more rigid than Non-psychosomatic Fathers supports Minuchin's theory that psychosomatic symptoms are in part a response to a rigid family system. Non-psychosomatic Mothers were more enmeshed than Psychosomatic Mothers, contrary to Minuchin's theory of enmeshment in psychosomatic families. As mentioned above, lower marital satisfaction in psychosomatic asthmatics is consistent with theories of family discord and triangulation of the symptomatic child postulated to occur in asthmatic families.

Since the Asthma Group could be divided into psychosomatic and non-psychosomatic subgroups, perhaps the leukemics too represented a range of well-adjusted to more disturbed youngsters and families. Family adjustment may be a function not of the childhood illness, but rather of some pre-illness personality and adjustment factors. The lack of significant differences between groups may be due to the number of emotionally sensitive children in the Asthma Group and a perhaps similar number of pre-illness disturbed families in the Leukemia Group. In any case, Minuchin's theory that psychosomatic families show specific family dynamics related to the psychosomatic symptoms is suspect since psychosomatic families could not be distinguished from other families with an ill child in this study.

Intercorrelations of Variables

Intercorrelations of the variables were examined to determine if the results were influenced by the relationship of the dependent measures to each other. Correlations between dependent and demographic variables do not affect the findings reported earlier, since the groups did not differ in demographic characteristics. Significant correlations of variables are listed in Appendix P. Age of the child was correlated with cohesion. Younger children felt more attached to the family, as might be expected. Also, children from larger families perceived more structure in the family. How long the parents had been married was related to the child's social adjustment and to school adjustment. The longer the parents had been married, the better the child scored in both. Perhaps the presence of older siblings as models in the longer marriages affected child adjustment. Also, most very young marriages in the sample were second marriages, and the correlation may reflect problems related to divorce and recombined families. Educational level of parents as a reflection of socio-economic status was related to Mothers' adaptability and Children's activities. As might be predicted, higher socio-economic families provided more activities for children and more structure.

Among the dependent variables, several notable relationships were found. Mother and father scores were correlated for adaptability, cohesion, and marital satisfaction. These correlations support the validity of these instruments. Interestingly, Fathers' marital satisfaction was related to several measures of child

adjustment. The relationship of child dysfunction to marital discord is thus further supported. The same relationship did not hold for Mothers, perhaps since Mothers were found to under report marital problems.

Social desirability scores for Mothers and Fathers were correlated with some child adjustment variables. The correlations suggest that mothers were perhaps under reporting school problems, internalized and externalized behavior problems, and marital problems. Analysis of the correlations by illness group showed that social desirability was correlated with no other variables in the Leukemia Group, was correlated with internalized and externalized behavior problems for mothers in the Asthma Group, and was correlated with internalized, externalized and school problems for Mother and Fathers in the Pain Group. The finding that Pain Children had more emotional problems is thus emphasized since the Pain Group is most likely of the groups to be under reporting problems in order to appear socially acceptable. Note also that the social desirability scores for all groups in this sample are well above the norms. The lack of significant differences between groups may be due to the self-report of ideal rather than actual family functioning by families in this study. Consistent with this hypothesis is the observation that some families did not score as expected from descriptions by referring clinicians and physicians.

Conclusions and Recommendations for Further Research

The major hypothesis of this study, that psychosomatic symptoms in children would be reflected in the extreme and maladaptive patterns of family functioning characteristic of disturbed families, was not supported. On the basis of child adjustment measures, the Pain Group was found to be a more psychologically disturbed population of children than the other two groups. However, family functioning did not vary accordingly. Rather, Mothers were found to be more rigid than Fathers and than scale norms in all 3 groups. High levels of maternal structure in this study probably reflect the demands on mothers caring for an ill child. There appeared to be a trend, not statistically significant, towards more extreme scores in the Pain Group, as predicted. As a whole, the sample scored as more rigid and more enmeshed than the population from which the FACES norms were derived.

Further research is recommended to clarify the meaning of these results. A larger sample might determine if the trend towards more extreme scores on family dynamics in the Pain Group is significant. Scores for a same-age non-ill group or age-adjusted norms for the FACES instrument would help to determine if the sample evaluations towards enmeshment and rigidity reflect the fact of having an ill child or are related to the young age of the children in this study.

A psychosomaticism measure was used successfully to distinguish a psychosomatic from a non-psychosomatic group of asthmatics.

The asthmatic children in the psychosomatic sub-group showed more signs of emotional disturbance and their parents reported less marital satisfaction. This significant finding suggests that asthmatics as a group are not homogeneous. The variety of theories about asthma as a psychosomatic disorder may reflect the heterogeneous nature of the group. Minuchin's theory of psychosomatic families, based in part on asthmatics, was only partially supported. Marital discord was apparent in the psychosomatic group. However, only psychosomatic fathers were somewhat rigid (but not extremely so) while psychosomatic mothers were not enmeshed. Further research may clarify if there is a group of psychosomatic asthmatics and if they are characterized by specific family dynamics that reflect one or more theories in the literature on asthma.

The sample in this study scored significantly higher than the norms on social desirability. The self report measures of family functioning may be inadequate to tap the family dynamics under consideration. Future studies may wish to find or develop better instruments to measure family enmeshment and rigidity.

There is insufficient evidence from this study to support the hypothesis that psychosomatic symptoms in children are related to patterns of family functioning, specifically marital adjustment, rigidity, and enmeshment. Rather, it appears that families with an ill child show similar family dynamics and are more connected and more structured as a whole than normal families, but not pathologically rigid or enmeshed. Further research is recommended to clarify if the connectedness and structure observed is related to

illness or to the age of the children in the present sample. Studies with other illness groups may clarify if the trends towards pathological family functioning in the Pain Group are real effects which were masked by the presence of psychosomatic type families in the Asthma Group, the extreme stress on families of leukemics, or other intervening variables which impact family functioning.

APPENDICES

APPENDIX A

CONSENT TO BE CONTACTED

CONSENT TO BE CONTACTED

I, _____, consent to be contacted by Beth Klopper, M.A. concerning participation in a research study of families having an ill child. The study will entail filling out questionnaires about general family life and my child's behavior. I understand that this consent form only gives permission to contact me about the study and does not obligate me to participate in the study.

_____ _____

Signature of Parent Date

Beth Klopper may use this phone number to contact me:

_____

my address is:

_____

_____

APPENDIX B

LETTER TO FAMILIES

Dear Parents,

Thank you for expressing interest in participating in a study of the effects on families of having a child with a chronic medical problem. It is hoped that this study will help us to understand the stresses on children and families of having a problem needing continuous medical attention. The results of the study will hopefully help us to provide better service and support for you and other families caring for an ill child.

If you choose to participate in this study, each parent will be asked to fill out two questionnaires about family life and one checklist concerning your child's behavior. Your child will be given one short questionnaire of 10 items on family life. The items will be read to him or her if your child has difficulty reading. If your child has asthma, you will be interviewed about precipitants of your child's asthma and asked for your permission for me to consult with your child's specialist physician, also about precipitants of your child's asthma.

These questionnaires can be completed in your home, at the clinic when you are in for medical care, or in my office on the Michigan State University campus at a time which is convenient to you. Total time commitment should not exceed 1.5 hours.

All test results will remain strictly confidential and subjects will remain anonymous. General findings of the study will be communicated to you and your doctor, if you wish. Also, I will be available to meet with you after the study is completed to talk about your family's results and your reactions to filling out the questionnaires.

I greatly appreciate your help in this study. Please understand that you are free to discontinue your participation at any time. Also, your choice to participate or not is in no way related to your child's ongoing medical care.

Please feel free to call me with any questions:

Elizabeth Klopper
M.S.U. Clinical Center
353-3002

Sincerely,

Elizabeth Klopper

APPENDIX C

INFORMED CONSENT FORM

INFORMED CONSENT

I have freely consented to take part in a scientific study being conducted by Elizabeth Klopper, M.A., under the supervision of Dr. L. Ferguson, Professor of Psychology, Michigan State University.

The study has been explained to me and I understand the explanation that has been given and what my participation will involve.

I understand that I am free to discontinue my participation in the study at any time without penalty.

I understand that the results of the study will be treated in strict confidence and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.

I understand that my participation in the study does not guarantee any beneficial results to me.

I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

_____
Mother's signature

_____
Father's signature

_____
Child's signature

_____
Date

APPENDIX D

FAMILY ADAPTABILITY AND COHESION EVALUATION SCALES

FACES

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

1. Family members are concerned with each other's welfare.
2. Family members feel free to say what's on their mind.
3. We don't have spur of the moment guests at mealtime.
4. It is hard to know who the leader is in our family.
5. It's difficult for family members to take time away from the family.
6. Family members are afraid to tell the truth because of how harsh the punishment will be.
7. Most personal friends are not family friends.
8. Family members talk a lot but nothing ever gets done.
9. Family members feel guilty if they want to spend some time alone.
10. There are times when other family members do things that make me unhappy.
11. In our family we know where all family members are at all times.
12. Family members have some say in what is required of them.
13. The parents in our family stick together.
14. I have some needs that are not being met by family members.
15. Family members make the rules together.
16. It seems like there is never any place to be alone in our house.
17. It is difficult to keep track of what other family members are doing.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

18. Family members do not check with each other when making decisions.

19. My family completely understands and sympathizes with my every mood.

20. Family ties are more important to us than any friendship could possibly be.

21. When our family has an argument, family members just keep to themselves.

22. Family members often answer questions that were addressed to another person.

23. The parents check with the children before making important decisions in our family.

24. Family members like to spend some of their free time with each other.

25. Punishment is usually pretty fair in our family.

26. Family members are encouraged to have friends of their own as well as family friends.

27. Family members discuss problems and usually feel good about the solutions.

28. Family members share almost all interests and hobbies with each other.

29. Our family is not a perfect success.

30. Family members are extremely independent.

31. No one in our family seems to be able to keep track of what their duties are.

32. Family members feel it's "everyone for themselves".

33. Every new thing I've learned about my family has pleased me.

34. Our family has a rule for almost every possible situation.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

35. We respect each other's privacy.

36. Once our family has planned to do something, it's difficult to change it.

37. In our family we are on our own when there is a problem to solve.

38. I have never regretted being with my family, not even for a moment.

39. Family members do not turn to each other when they need help.

40. It is hard to know what other family members are thinking.

41. Family members make visitors feel at home.

42. Parents make all of the important decisions in our family.

43. Even when everyone is home, family members spend their time separately.

44. Parents and children in our family discuss together the method of punishment.

45. Family members have little need for friends because the family is so close.

46. We feel good about our ability to solve problems.

47. Although family members have individual interests, they still participate in family activities.

48. My family has all the qualities I've always wanted in a family.

49. Family members are totally on their own in developing their ideas.

50. Once a task is assigned to a family member, there is no chance of changing it.

51. Family members seldom take sides against other members.

52. There are times when I do not feel a great deal of love and affection for my family.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

53. When rules are broken, family members are treated fairly.

54. Family members don't enter each other's areas or activities.

55. Family members encourage each other's efforts to find new ways of doing things.

56. Family members discuss important decisions with each other, but usually make their own choices.

57. If I could be a part of any family in the world, I could not have a better match.

58. Home is one of the loneliest places to be.

59. In our family, it's important for everyone to express their opinion.

60. Family members find it easier to discuss things with persons outside the family.

61. There is no leadership in our family.

62. We try to plan some things during the week so we can all be together.

63. Family members are not punished or reprimanded when they do something wrong.

64. In our family we know each other's close friends.

65. Our family does not discuss its problems.

66. Our family doesn't do things together.

67. If my family has any faults, I am not aware of them.

68. Family members enjoy doing things alone as well as together.

69. In our family, everyone shares responsibilities.

70. Parents agree on how to handle the children.

71. I don't think anyone could possibly be happier than my family and I when we are together.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

72. It is unclear what will happen when rules are broken in our family.

73. When a bedroom door is shut, family members will knock before entering.

74. If one way doesn't work in our family, we try another.

75. Family members are expected to have the approval of others before making decisions.

76. Family members are totally involved in each other's lives.

77. Family members speak their mind without considering how it will affect others.

78. Family members feel comfortable inviting their friends along on family activities.

79. Each family member has at least some say in major family decisions.

80. Family members feel pressured to spend most free time together.

81. Members of our family can get away with almost anything.

82. Family members share the same friends.

83. When trying to solve problems, family members jump from one attempted solution to another without giving any of them time to work.

84. We have difficulty thinking of things to do as a family.

85. Family members understand each other completely.

86. It seems as if we agree on everything.

87. It seems as if males and females never do the same chores in our family.

88. Family members know who will agree and who will disagree with them on most family matters.

89. My family could be happier than it is.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

90. There is strict punishment for breaking rules in our family.

91. Family members seem to avoid contact with each other when at home.

92. For no apparent reason, family members seem to change their minds.

93. We decide together on family matters and separately on personal matters.

94. Our family has a balance of closeness and separateness.

95. Family members rarely say what they want.

96. It seems there are always people around home who are not members of the family.

97. Certain family members order everyone else around.

98. It seems as if family members can never find time to be together.

99. Family members are severely punished for anything they do wrong.

100. We know very little about the friends of other family members.

101. Family members feel they have no say in solving problems.

102. Members of our family share many interests.

103. Our family is as well adjusted as any family in this world can be.

104. Family members are encouraged to do their own thing.

105. Family mbmers never know how others are going to act.

106. Certain individuals seem to cause most of our family problems.

107. I don't think any family could live together with greater harmony than my family.

4 = true all the time 2 = true some of the time

3 = true most of the time 1 = true none of the time

---

108. It is hard to know what the rules are in our family because they always change.

109. Family members find it hard to get away from each other.

110. Family members feel that the family will never change.

111. Family members feel they have to go along with what the family decides to do.

APPENDIX E

FAMILY WELLNESS SCALE

APPENDIX E

FAMILY WELLNESS SCALE

Circle the number that you feel best describes your family

1. What kind of leadership is there in your family?

1	2	3	4
one person usually leads	leadership sometimes is shared	leadership often is shared	no clear leader

2. How often do family members do the same things (roles) around the house?

1	2	3	4
always do the same thing	often do the same thing	sometimes do the same things	seldom do the same things

3. What are the rules (written or unwritten) like in your family?

1	2	3	4
rules very clear and very stable	rules clear and stable	rules clear and flexible	rules seldom clear and change often

4. How is discipline of children handled?

1	2	3	4
very strict	democratic and predicatble	democratic but unpredicatble	very lenient

5. How effective is the family at solving problems?

1	2	3	4
extremely effective	usually effective	sometimes effective	seldom effective

A SCORE_____

Circle the number that you feel best describes your family

1. How close do you feel to other family members?

1	2	3	4
not very close	moderately close	very close	extremely close

2. How often does your family spend time playing together?

1	2	3	4
seldom	sometimes	often	very often

3. How often do individuals make their own decisions?

1	2	3	4
each family member usually makes his/her own decisions	each family member often makes his/her own decisions	each family member seldom makes his/her own decisions	each family member rarely makes his/her own decisions

4. How independent or dependent are family members?

1	2	3	4
independent	somewhat independent	usually dependent	very dependent

5. How close are your mother and father?

1	2	3	4
seldom close	moderately close	very close	extremely close

C SCORE_____

APPENDIX F

SPANIER DYADIC ADJUSTMENT SCALE

APPENDIX F

DYADIC ADJUSTMENT SCALE

Most persons have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

	Always Agree	Almost Always Agree	Occasionally Disagree	Frequently Disagree	Almost Always Disagree	Always Disagree
1. Handling family finances	____	____	____	____	____	____
2. Matters of recreation	____	____	____	____	____	____
3. Religious matters	____	____	____	____	____	____
4. Demonstrations of affection	____	____	____	____	____	____
5. Sex relations	____	____	____	____	____	____
6. Friends	____	____	____	____	____	____
7. Conventionality (correct or proper behavior)	____	____	____	____	____	____
8. Philosophy of life	____	____	____	____	____	____
9. Ways of dealing with parents or in-laws	____	____	____	____	____	____
10. Aims, goals, and things believed	____	____	____	____	____	____
11. Amount of time spent together	____	____	____	____	____	____
12. Making major decisions	____	____	____	____	____	____
13. Household tasks	____	____	____	____	____	____
14. Leisure time interests and activities	____	____	____	____	____	____
15. Career decisions	____	____	____	____	____	____
	All the time	Most of the time	More often than not	Occasionally	Rarely	Never
16. How often do you discuss or have you considered divorce, separation, or terminating your relationship?	____	____	____	____	____	____
17. How often do you or your mate leave the house after a fight?	____	____	____	____	____	____
18. In general, how often do you think that things between you and your partner are going well?	____	____	____	____	____	____
19. Do you confide in your mate?	____	____	____	____	____	____

	All the time	Most of the time	More often than not	Occasionally	Rarely	Never
20. Do you ever regret that you married?	_____	_____	_____	_____	_____	_____
21. How often do you and your mate quarrel?	_____	_____	_____	_____	_____	_____
22. How often do you and your mate "get on each other's nevers?"	_____	_____	_____	_____	_____	_____

	Every Day	Almost Every Day	Occasionally	Rarely	Never
23. Do you kiss your mate?	_____	_____	_____	_____	_____
24. Do you and your mate engage in outside interests together?	_____	_____	_____	_____	_____

How often would you say the following events occur between you and your mate?

	Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More Often
25. Have a stimulating exchange of ideas	_____	_____	_____	_____	_____	_____
26. Laugh together	_____	_____	_____	_____	_____	_____
27. Calmly discuss something	_____	_____	_____	_____	_____	_____
28. Work together on a project	_____	_____	_____	_____	_____	_____

These are some things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship in the past few weeks. (Check yes or no)

29. Being too tired for sex Yes _____ No_____

30. Not showing love Yes _____ No_____

31. The dots on the following line represent different degrees of happiness in your relationship. The middle point, "happy", represents the degree of happiness of most relationships. Please circle the dot which best describes the degree of happiness, all things considered, of your relationship.

_____.____.____.____.____.____.____

Extremely Unhappy	Fairly Unhappy	A little Unhappy	Happy	Very Happy	Extremely Happy	Perfect

32. Which of the following statement best describes how you feel about the future of your relationship?

_____ I want desperately for my relationship to succeed, and would go to almost any lengths to see that it does.
_____ I want very much for my relationship to succeed, and will do all I can to see that it does.
_____ I want very much for my relationship to succeed, and will do my fair share to see that it does.
_____ It would be nice if my relationship succeeded, but I can't do much more than I am doing now to help it succeed.
_____ It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going.
_____ My relationship can never succeed, and there is nothing more that I can do to keep the relationship going.

APPENDIX G

CHILD BEHAVIOR CHECKLIST

APPENDIX G

CHILD BEHAVIOR CHECKLIST

Child's Name _____ Sex: Boy _____ Girl _____ Age:_____

Race:_____

Today's Date: Mo. _____ Day _____ Yr. _____

Child's Birthdate: Mo._____ Day _____ Yr._____

1. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

   None _____

	Compared to other children of the same age, about how much time does he/she spend in each?				Compared to other children of the same age, how well does he/she do in each one?			
	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	_____	_____	_____	_____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____	_____	_____	_____	_____

2. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, singing, etc. (Do not include T.V.)

   None _____

	Compared to other children of the same age, about how much time does he/she spend in each?				Compared to other children of the same age, how well does he/she do in each one?			
	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	_____	_____	_____	_____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____	_____	_____	_____	_____

3. Please list any organizations, clubs, teams, or groups your child belongs to.

   None _____

	Compared to other children of the same age, how active is he/she in each?			
	Don't Know	Less Active	Average	More Active
a. _____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____

4. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, etc.

   None _____

	Compared to other children of the same age, how well does he/she carry them out?			
	Don't Know	Below Average	Average	Above Average
a. _____	_____	_____	_____	_____
b. _____	_____	_____	_____	_____
c. _____	_____	_____	_____	_____

5. 1. About how many close friends does your child have? None_____ 1_____ 2 or 3_____ 4 or more_____

2. About how many times a week does your child do things with them: less than 1_____ 1 or 2_____ 3 or more_____

---

6. Compared to other children of his/her age, how well does your child:

	Worse	About the same	Better
a. Get along with his/her brothers & sisters	_____	_____	_____
b. Get along with other children?	_____	_____	_____
c. Behave with his/her parents?	_____	_____	_____
d. Play and work by himself/herself?	_____	_____	_____

---

7. 1. Current school performance--for children aged 6 and older:

Does not go to school _____	Failing	Below Average	Average	Above Average
a. Reading or English	_____	_____	_____	_____
b. Writing	_____	_____	_____	_____
c. Arithmetic or Math	_____	_____	_____	_____
d. Spelling	_____	_____	_____	_____
Other academic subjects: for example: history, science, foreign language, geography.				
e. _____	_____	_____	_____	_____
f. _____	_____	_____	_____	_____
g. _____	_____	_____	_____	_____

---

2. Is your child in a special class?

No_____ Yes--what kind?_____

---

3. Has your child ever repeated a grade?

No_____ Yes--grade and reason_____

---

4. Has your child had any academic or other problems in school?

No_____ Yes--please describe_____

When did these problems start and end?

---

8. Below is a list of items that describe children. For each item that describes your child now or within the past 6 months, please circle the 2 if the item is very true or often true of your child. Circle the 1 if the itme is somewhat or sometimes true of your child. If the item is not true of your child, circle the 0.

0	1	2	1. Acts too young for his/her age
0	1	2	2. Allergy
0	1	2	3. Argues a lot
0	1	2	4. Asthma
0	1	2	5. Behaves like opposite sex
0	1	2	6. Bowel movements outside toilet
0	1	2	7. Bragging, boasting
0	1	2	8. Can't concentrate, can't pay attention for long
0	1	2	9. Can't get his/her mind off certain thoughts; obsessions
0	1	2	10. Can't sit still, restless, or hyperactive
0	1	2	11. Clings to adults or too dependent
0	1	2	12. Complains of loneliness
0	1	2	13. Confused or seems to be in a fog
0	1	2	14. Cries a lot
0	1	2	15. Cruel to animals
0	1	2	16. Cruelty, bullying, or meanness to others
0	1	2	17. Day-dreams or gets lost in his/her thoughts
0	1	2	18. Deliberately harms self or attempts suicide
0	1	2	19. Demands a lot of attention
0	1	2	20. Destroys his/her own things
0	1	2	21. Destroys things belonging to his/her family or other children
0	1	2	22. Disobedient at home
0	1	2	23. Disobedient at school
0	1	2	24. Doesn't eat well
0	1	2	25. Doesn't get along with other children
0	1	2	26. Dosn't seem to feel guilty after misbehaving
0	1	2	27. Easily jealous
0	1	2	28. Eats or drinks things that are not food
0	1	2	29. Fears certain animals, situations, or places, other than school
0	1	2	30. Fears going to school
0	1	2	31. Fears he/she might think or do something bad
0	1	2	32. Feels he/she has to be perfect
0	1	2	33. Feels or complains that no one loves him/her
0	1	2	34. Feels others are out to get him/her
0	1	2	35. Feels worthless or inferior
0	1	2	36. Gets hurt a lot, accident-prone
0	1	2	37. Gets in many fights
0	1	2	38. Gets teased a lot
0	1	2	39. Hangs around with children who get in trouble
0	1	2	40. Hears things that aren't there
0	1	2	41. Impulsive or acts without thinking
0	1	2	42. Likes to be alone
0	1	2	43. Lying or cheating
0	1	2	44. Bites fingernails
0	1	2	45. Nervous, highstrung, or tense
0	1	2	46. Nervous movements or twitching
0	1	2	47. Nightmares
0	1	2	48. Not liked by other children
0	1	2	49. Constipated, doesn't move bowels
0	1	2	50. Too fearful or anxious
0	1	2	51. Feels dizzy
0	1	2	52. Feels too guilty
0	1	2	53. Overeating
0	1	2	54. Overtired
0	1	2	55. Overweight
0	1	2	56. Physical problems without known medical cause:
0	1	2	a. Aches or pains
0	1	2	b. Headaches
0	1	2	c. Nausea, feels sick
0	1	2	d. Problems with eyes
0	1	2	e. Rashes or other skin problems

			56. (Continued)
0	1	2	f. Stomach aches or cramps
0	1	2	g. Vomiting, throwing up
0	1	2	h. Other (describe)_____
0	1	2	57. Physically attacks people
0	1	2	58. Picks nose, skin, or other parts of body
0	1	2	59. Plays with own sex parts in public
0	1	2	60. Plays with own sex parts too much
0	1	2	61. Poor school work
0	1	2	62. Poorly coordinated or clumsy
0	1	2	63. Prefers playing with older children
0	1	2	64. Prefers playing with younger children
0	1	2	65. Refuses to talk
0	1	2	66. Repeats certain acts over and over; compulsions
0	1	2	67. Runs away from home
0	1	2	68. Screams a lot
0	1	2	69. Secretive, keeps things to self
0	1	2	70. Sees things that aren't there
0	1	2	71. Self-conscious or easily embarrassed
0	1	2	72. Sets fires
0	1	2	73. Sexual problems
0	1	2	74. Showing off or clowning
0	1	2	75. Shy or timid
0	1	2	76. Sleeps less than most children
0	1	2	77. Sleeps more than most children during day and/or night
0	1	2	78. Smears or plays with bowel movements
0	1	2	79. Speech problem
0	1	2	80. Stares blankly
0	1	2	81. Steals at home
0	1	2	82. Steals outside the home
0	1	2	83. Stores up things he/she doesn't need
0	1	2	84. Strange behavior
0	1	2	85. Strange ideas
0	1	2	86. Stubborn, sullen, or irritable
0	1	2	87. Sudden changes in mood or feelings
0	1	2	88. Sulks a lot
0	1	2	89. Suspicious
0	1	2	90. Swearing or obscene language
0	1	2	91. Talks about killing self
0	1	2	92. Talks or walks in sleep
0	1	2	93. Talks too much
0	1	2	94. Teases a lot
0	1	2	95. Temper tantrums or hot temper
0	1	2	96. Thinks about sex too much
0	1	2	97. Threatens people
0	1	2	98. Thumb sucking
0	1	2	99. Too concerned with neatness or cleanliness
0	1	2	100. Trouble sleeping
0	1	2	101. Truancy, skips school
0	1	2	102. Underactive, slow moving, or lacks energy
0	1	2	103. Unhappy, sad, or depressed
0	1	2	104. Unusually loud
0	1	2	105. Uses alcohol or drugs
0	1	2	106. Vandalism
0	1	2	107. Wets self during the day
0	1	2	108. Wets the bed
0	1	2	109. Whining
0	1	2	110 Wishes to be of opposite sex
0	1	2	111. Withdrawn, doesn't get involved with others
0	1	2	112. Worrying
0	1	2	113 Please write in any problems your child has that were not listed above.

APPENDIX H

ASTHMA PRECIPITANT SURVEY

APPENDIX H

ASTHMA PRECIPITANT SURVEY

Affect	Precipitants	Aggravants	Statements of Verification
1. Excitement	_____	_____	
2. Anger			
a. Expressed openly	_____	_____	
b. Held in	_____	_____	
3. Anxiety	_____	_____	
4. Arguing and/or fighting	_____	_____	
5. Boredom	_____	_____	
6. Depression or low mood	_____	_____	
7. Dreaming	_____	_____	
8. Fear (in general)	_____	_____	
a. A specific fear (e.g., dark)	_____	_____	
b. Of getting asthma	_____	_____	
c. Of being without medication	_____	_____	
9. Frustration and/or disappointment	_____	_____	
10. Guilt	_____	_____	
11. Sadness	_____	_____	
12. Tense or uptight	_____	_____	
13. Upset or trauma	_____	_____	
14. Worry (in general)			
a. Over asthma or medication	_____	_____	
b. School	_____	_____	
c. Other	_____	_____	
15. Other (write in affect if not covered above)			
a. _____	_____	_____	
b. _____	_____	_____	

APPENDIX I

CONSENT TO CONTACT PHYSICIAN

I, _____, parent of_____

_____ give my permission for my child's physician,

_____, to provide information concerning the precipitants of my child's asthma to Elizabeth Klopper for purposes of a research study in which we are participating.

_____
Parent's Signature

_____
Date

APPENDIX J

PHYSICIAN RATING OF ASTHMATIC PATIENTS

PHYSICIAN RATING OF ASTHMATIC PATIENTS

Please rate on a scale of 1 to 5 your patient on the degree to which psychological factors exacerbate his/her asthma.

Psychological factors are meant to include: stress, emotions, anger, excitement, fear, anxiety, and sadness. Also include as psychological influences the impact of family and/or social factors on the child's asthma.

Case examples of children whose asthma is affected by psychological factors include:

1) A child whose asthma seems to act up when he is severely disciplined by his father.

2) A child who "uses" his/her asthma to elicit special attention and caring from mother.

3) A child whose asthma gets out of control and needs hospitalization to defuse and refocus tension in the family around holiday times.

Case examples of children whose asthma is exacerbated by external factors include:

1) A child who has asthma attacks when in contact with animals to which he is allergic.

2) A child who has asthma attacks after heavy exercise.

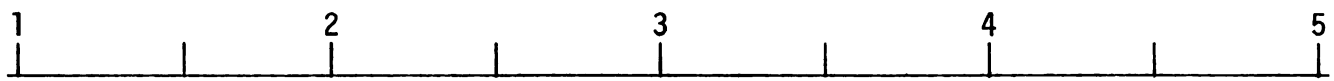
3) A child who takes his medicine and has his asthma under control.

A score of 5 represents a child whose asthma is exacerbated by psychosocial influences. A score of 1 represents the opposite extreme of a child whose asthma is exacerbated primarily by external

irritants, allergens or organic factor. A score of 3 represents a child equally influenced by both psychosocial and external factors. A score of 4 indicates a child influenced more by psychosocial factors than external factors and vice versa for a score of 2.

Physician Rating of Asthmatic Patients

Please rate your patient, _____ on the degree to which psychological factors influence his/her asthma.



Primarily influenced by external factors

Influenced equally by external and psychosocial factors

Primarily influenced by psychosocial factors

APPENDIX K

CIRCUMPLEX MODEL FOR THE FAMILY ADAPTABILITY AND COHESION EVALUATION SCALES

	COHESION			
Adaptability	Disengaged 162-230	Separated 231-250	Connected 251-270	Enmeshed 271-303
Choatic 199-236	Choatic Disengaged	Choatic Separated	Chaotic Connected	Choatic Enmeshed
Flexible 183-198	Flexible Disengaged	Flexible Separated	Flexible Connected	Flexible Enmeshed
Structured 167-182	Structured Disengated	Structured Separated	Structured Connected	Structured Enmeshed
Rigid 109-166	Rigid Disengaged	Rigid Separated	Rigid Connected	Rigid Enmeshed

Figure 1.--Sixteen Possible Types of Family Systems Derived From the Circumplex Model With Cutting Points.

APPENDIX L

FAMILY FUNCTIONING TYPOLOGIES FOR MOTHERS AND FATHERS BY ILLNESS GROUP

TABLE 11.--Mother and Father Placements on the Family Adaptability and Cohesion Evaluation Scales

	Leukemia		Asthma		Pain		Total	
	M*	F**	M	F	M	F	M	F
Extreme on Both Dimensions								
Rigid Disengaged	2	0	1	1	1	0	4	1
Chaotic Disengaged	0	0	0	0	0	0	0	0
Rigid Enmeshed	1	1	0	0	0	0	1	1
Chaotic Enmeshed	0	0	0	1	1	0	1	1
Extreme in One Dimension								
Structured Disengaged	0	2	0	1	0	0	0	3
Flexible Disengaged	0	0	0	0	1	0	1	0
Choatic Separated	0	0	0	0	0	0	0	0
Choatic Connected	0	0	0	0	0	0	0	0
Flexible Enmeshed	1	3	1	1	2	2	4	6
Structured Enmeshed	1	2	3	0	1	3	5	5
Rigid Connected	2	1	3	2	4	5	9	8
Rigid Separated	2	2	1	0	2	0	5	2
Moderate on Both Dimensions								
Flexible Separated	1	0	0	1	0	0	1	1
Flexible Connected	1	2	0	1	0	2	1	5
Structured Connected	3	3	5	5	3	1	11	9
Structured Separated	1	1	1	2	0	0	2	6

*Mother **Father

APPENDIX M

SUMMARY OF CHI-SQUARE OF MODERATE AND EXTREME FAMILY FUNCTIONING FOR MOTHERS AND FATHERS

TABLE 12.--Chi-Squares for Moderate and Extreme FACES Scores by Illness Group for Mothers and Fathers.

	Mothers		Fathers	
	Moderate	Extreme	Moderate	Extreme
Leukemia	6	9	6	9
Asthma	6	9	9	6
Pain	3	12	3	12
	$X^2 = 1.8$ non-significant		$X^2 = 5$ non-significant	

APPENDIX N

FACES SCATTERPLOTS

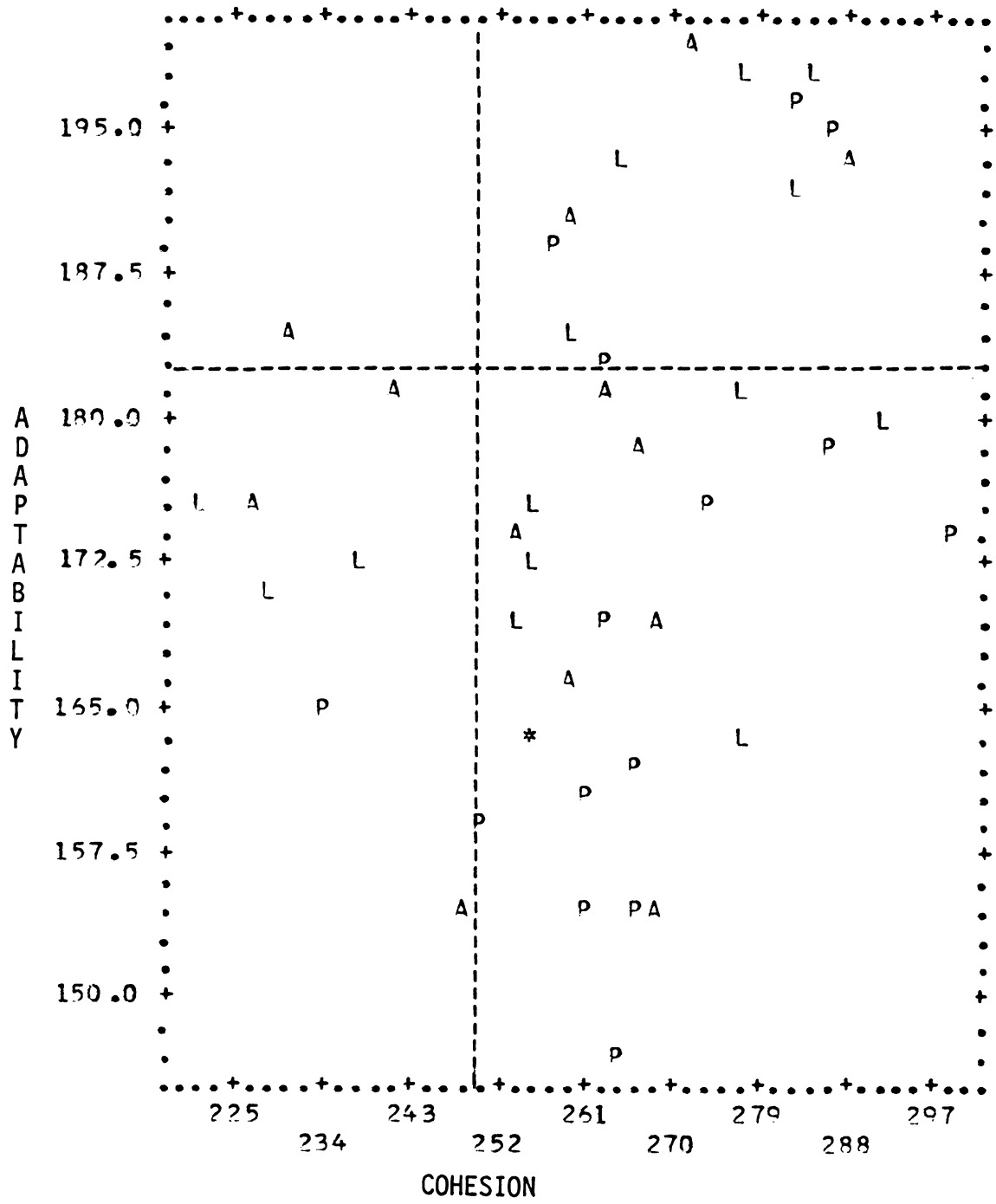


Figure 2.--FACES Plot on Fathers.

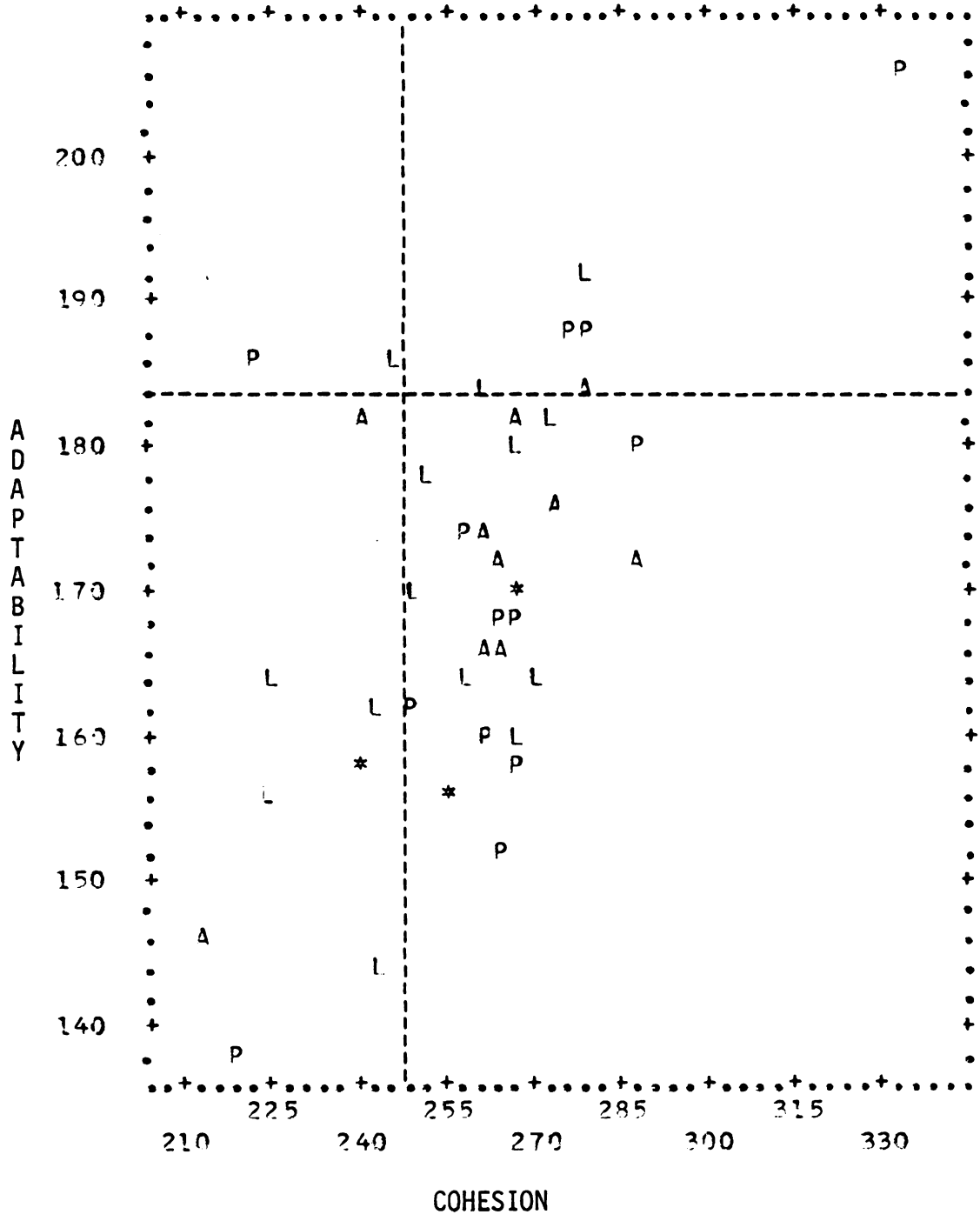


Figure 3.--FACES Plot on Mothers.

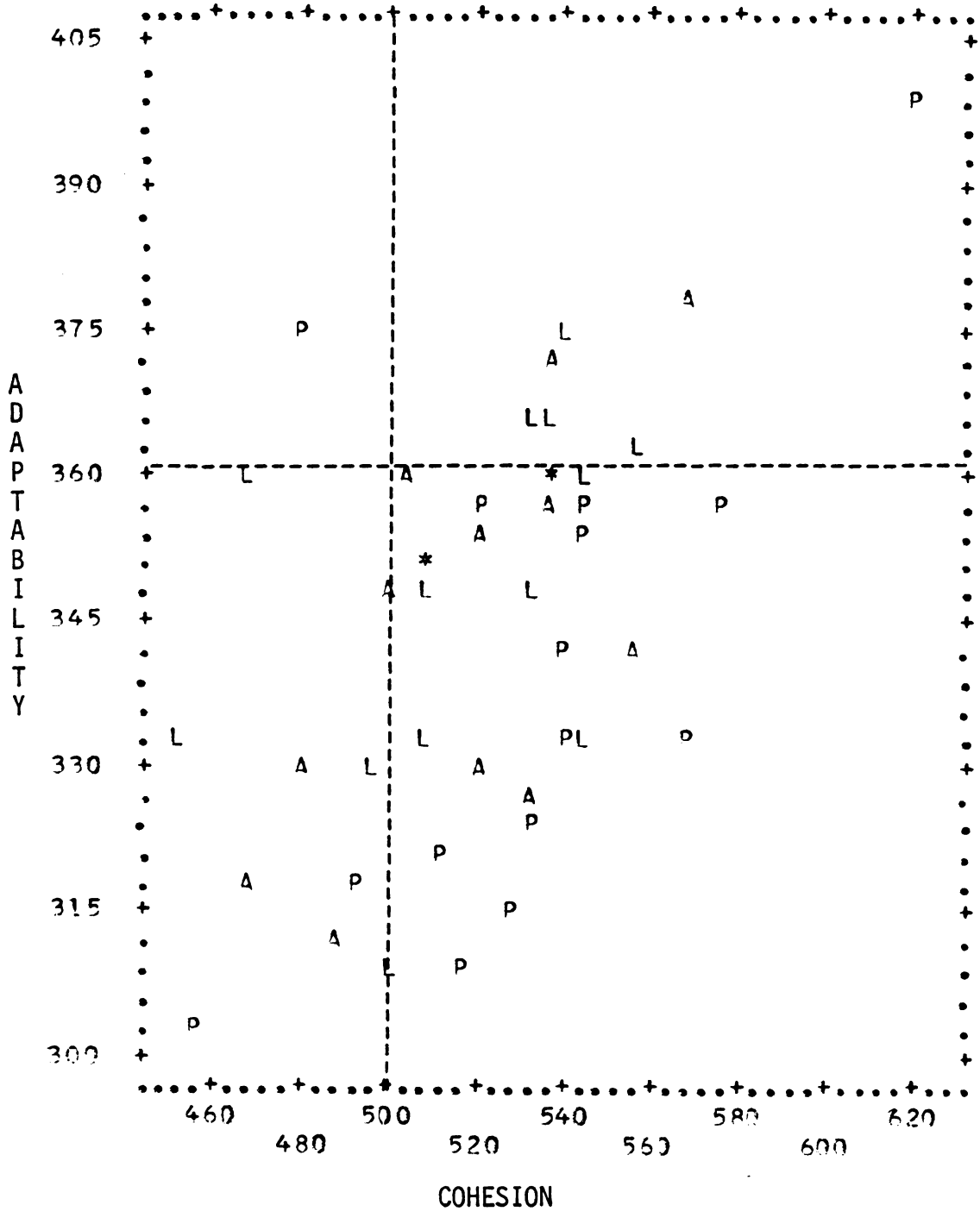


Figure 4.--FACES Plot on Mothers and Fathers Combined.

APPENDIX O

T-TESTS FOR DIFFERENCE BETWEEN SAMPLE MEANS AND NORMATIVE MEANS

TABLE 13.--T-tests of Differences Between Sample Means and Normative Population Means.

Variable	Sample Mean	Sample S.D.	Normative Mean	Normative S.D.	t	Significance Level (p)
Mother Adaptability	169.42	13.69	183.0	15.0	5.70	.005
Father Adaptability	175.60	13.54	183.0	15.0	3.48	.005
Mother Cohesion	259.67	21.04	251.0	19.0	2.83	.005
Father Cohesion	261.76	18.16	251.0	19.0	3.48	.005
Mother Social Desirability	42.13	5.00	35.0	5.0	8.93	.005
Father Social Desirability	43.11	5.20	35.0	5.0	10.13	.005
Mother Marital Adjustment	117.04	14.00	114.8	17.8	.79	N.S.*
Father Marital Adjustment	114.91	14.40	114.8	17.8		N.S.*

*Non-significant

APPENDIX P

SIGNIFICANT CORRELATIONS BETWEEN VARIABLES

TABLE 14.--Significant Correlations Between Dependent Variables.

Variable	Correlated With	r	p
Father Adaptability	Father Cohesion	.29	.05
Mother Adaptability	Father Adaptability	.62	.01
Mother Cohesion	Father Cohesion	.39	.01
	School Adjustment	.34	.05
Child Cohesion	Child Activities	-.30	.05
Father Marital Adjustment	Child Cohesion	.31	.05
	Social Adjustment	-.50	.01
	School Adjustment	-.30	.05
	Mother Marital Adjustment	.53	.01
Mother Social Desirability	Father Social Desirability	.41	.01
	School Adjustment	.35	.05
	Internal Behavior Problems	.47	.01
	External Behavior Problems	.53	.01
	Mother Marital Adjustment	.35	.05
Father Social Desirability	Father Cohesion	.32	.05
	Mother Social Desirability	.41	.01
	Internal Behavior Problems	.43	.01
	External Behavior Problems	.36	.05

TABLE 15.--Significant Intercorrelations Between Demographic Characteristics and Dependent Variables.

Demographic Variable	Dependent Variable	r	p
Age of Child	Child Cohesion	-.40	.01
Years of Marriage	Social Adjustment	.31	.05
Years of Marriage	School Adjustment	.33	.05
Educational Level	Mother Adaptability	-.36	.05
Educational Level	Activities of Child	.33	.05
Educational Level	Social Adjustment	.34	.05
Number of Children	Child Adaptability	-.29	.05

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