

COMPARATIVE PSYCHOLOGICAL ASSESSMENT OF PATIENTS  
WITH ANOREXIA NERVOSA AND THEIR SIBLINGS

by

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**APPROVAL SHEET**

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## ABSTRACT

Title of Dissertation: Comparative Psychological Assessment  
of Patients with Anorexia Nervosa and  
Their Siblings

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This study represented an exploration of possible protective factors in the lives of adolescents whose sisters suffer from anorexia nervosa. In examining the 16 patients, ages 12-21, and their 16 siblings free of eating disorders within three years of age of the patient, this research has attempted to understand the dynamics of anorexia nervosa as it related to the sisters who comprised the comparison group.

The purpose of this research was to investigate some mental health factors of female adolescent siblings of patients with anorexia nervosa who themselves have never exhibited eating disorders, to identify those psychosocial factors that are shared by anorectics with their sisters who are free of eating disorders, and to identify those psychosocial factors that separate the two groups.

Four aims and a series of nine hypotheses were formulated and the two groups compared on factors of affective psychopathology, perceived social networks, anxiety disorders, locus of control, parents' assessment of child's competence, child's assessment of the same, and perceived

family cohesiveness and adaptability. Relationship among these variables was studied within the different samples, and a parental assessment of both girls was provided by their mothers.

Findings revealed that the anorectic patients had a restricted social network, manifested a somewhat more external locus of control, and had a high prevalence of affective disorders, as compared to their siblings. The siblings perceived themselves as more competent in general and social functioning. There was no difference between these two groups on perceived cognitive and physical functioning or their perception of family cohesion and adaptability. The mothers perceived the anorectic daughters as less socially competent but rated both daughters equally competent on cognitive, physical, and general functioning.

The correlation between parental perception of competence and self-report of their daughter was slightly higher in the anorectic patients than in their siblings. Findings indicate that the psychosocial correlates of anorexia nervosa are multivaried and do not necessarily fit the prevailing stereotypes in the literature on this disorder.

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## TABLE OF CONTENTS

	<u>Page</u>
CHAPTER I	
INTRODUCTION.....	1
Origins and Purpose.....	1
Purpose of Study.....	4
Rationale for the Study.....	5
Genetic Factors.....	6
The Environmental Factors.....	7
Conceptual Framework.....	10
Psychological Factors in Anorexia Nervosa.....	11
Social Variables.....	12
The Family.....	12
Other Social Relationships.....	13
Stress and Coping.....	14
Families at Risk.....	17
Statement of Research Aims and Hypotheses.....	17
Definition of Terms.....	22
Anorexia Nervosa.....	22
Vulnerability.....	23
At Risk.....	23
Female Patients.....	23
Siblings.....	23
Social Network.....	24
Locus of Control.....	24
Anxiety Disorders.....	25

	<u>Page</u>
Affective Psychopathology.....	26
Parental Perceived Competence.....	26
The Children's Perceived Competence.....	27
The Perceived Family Cohesion and Adaptability.....	27
 CHAPTER II	
REVIEW OF RELATED LITERATURE.....	28
General Overview.....	28
Epidemiology and Prevalence.....	34
Increasing Incidence.....	37
Etiological Considerations.....	38
Separation-Individuation.....	40
Mother-Child Interaction.....	41
Object Love and Feeding Process.....	45
Object Constancy and the Anorectic.....	47
Disordered Family Intraction.....	52
Family Systems.....	53
Biological Factors.....	56
Relationship to Depressive Disorders and Alcoholism.....	59
The Sibling of the Chronically Ill and Handicapped Child.....	60
 CHAPTER III	
METHODOLOGY.....	64
Restatement of Aims and Hypotheses.....	65
Subjects.....	67
Criteria for Inclusion in the Study.....	68



Exclusion Criteria.....	68
Sampling Procedures.....	69
Setting.....	70
Instruments.....	71
The Harter Scale.....	71
Diagnostic Interview Schedule for Children.....	79
Locus of Control.....	84
Social Network Scale.....	89
Family Adaptability and Cohesion Evaluation Scale (FACES).....	92
Consent and Confidentiality.....	99
Statistical Analysis.....	99
Aim 1.....	99
Aim 2.....	100
Aim 3.....	100
Aim 4.....	100
CHAPTER IV	
RESULTS.....	102
Sample Characteristics.....	104
Age.....	104
Socioeconomic Status and Race.....	105
Sibling Relationship.....	105
Birth Order.....	105
Family Size.....	106
Introduction to Findings.....	106
Aim 1.....	107

	<u>Page</u>
Hypothesis 1.....	108
Hypothesis 2.....	110
Hypothesis 3.....	115
Hypothesis 4.....	116
Hypothesis 5.....	118
Hypothesis 6.....	118
Aim 2.....	120
Hypothesis 7.....	120
Aim 3.....	121
Hypothesis 8.....	121
Aim 4.....	131
Hypothesis 9.....	131
Nowicki-Strickland Significant Relationships With all Other Variables in the Patient Group..	132
Siblings.....	138
 Chapter V	
DISCUSSION AND IMPLICATIONS.....	142
Introduction.....	142
Demographic Characteristics of our Study Sample.....	142
Similarities.....	148
Differences.....	152
Conclusions.....	159
Limitations of the Study.....	161
Appendix A. Letters, Tests, and Consent Forms.....	163
Letters.....	164

	<u>Page</u>
Parent's Rating Scale of the Child's Actual Competence.....	166
Harter's Perceived Self-Competence Scale.....	171
Anxiety-Depression Items from the DISC.....	176
Nowicki-Strickland Locus of Control Scale.....	186
Social Network Scale.....	189
Family Adaptability and Cohesion Scales (FACES).....	202
Consent Forms.....	205
Bibliography.....	210

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Frequency of Ages of Subjects	104
2	Birth Order of Subjects by Age	105
3	Birth Order of Subjects by Diagnosis	106
4	Means and SD for Significant Social Resource Variables	109
5	Comparison of Anorectics and Siblings on Social Support Variables	110
6	Comparison of Anorectics and Siblings on the Nowicki-Strickland Items	112
7	Comparisons of Means (Adjusted for Age) of Anorectics and Siblings on the Harter Competence Factors	116
8	Comparison of Means (Adjusted for Age) of Anorectics and Siblings on Perceived Family Cohesion and Adaptability and on Idealized Family Cohesion and Adaptability	117
9	Incidence of Affective and Anxiety Disorders in Patients with Anorexia Nervosa and Their Siblings	119
10	Comparison of Means (Adjusted for Age) of the Mothers' Perception of the Competencies of Their Anorectic Daughters and Their Siblings	121
11	Correlation Coefficients Between Parental Perceptions and Self-Report of Competence	122
12	Significant Correlations for All Competence, Family Cohesiveness, and Family Adaptability Variables in the Patient Group (Subset of Entire Correlation Matrix)	134
13	Significant Correlations for All Competence, Family Cohesiveness, and Family Adaptability Variables in the Sibling Group	139

## LIST OF FIGURES

Figure		<u>Page</u>
1	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Cognitive Competence in the Patient Group	123
2	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of General Competence in the Patient Group	124
3	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Physical Competence in the Patient Group	125
4	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Social Competence in the Patient Group	126
5	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Cognitive Competence in the Sibling Group	127
6	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of General Competence in the Sibling Group	128
7	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Physical Competence in the Sibling Group	129
8	Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Social Competence in the Sibling Group	130

## CHAPTER I

### INTRODUCTION

#### Origins and Purpose

This study emerged from the author's long-standing interest in anorexia nervosa and clinical experience with patients with this disorder and their families. An added impetus was provided by studies indicating a recent increase in the prevalence of anorexia nervosa in industrialized western countries. Additional information indicated that in siblings of patients with anorexia nervosa, the risk of acquiring the same disorder is 6 to 12 times greater than in the general population. Surprisingly, however, little research had been done on these siblings, despite the recent interest in risk-research, deriving mostly from studies of offspring of parents with schizophrenia or affective disorders. The use of sisters of patients with anorexia nervosa as a comparison group in our study may allow us to discern those psychological risk factors which predispose one to the development of anorexia nervosa as well as those factors which may protect one from the development of this disorder.

Despite a significant multi-disciplinary research effort, anorexia nervosa is as puzzling to us as it was 300 years ago when it was first described. Because of the severity of this disorder, there is a great need for further research. Of vital concern is the considerable mortality as

well as chronic psychopathology and the often lifelong sexual dysfunction. The increased interest in anorexia nervosa has led to the establishment of eating disorder clinics as well as publication of a journal specifically devoted to this issue, notably the International Journal of Eating Disorders. Typically, eating disorder centers operate on a multidisciplinary basis, often involving adolescent medicine, psychiatry, endocrinology, nursing, and social work. Such cooperation reflects the growing awareness of the multidimensional problems presented by anorexia nervosa.

Seldom has an illness inspired so many descriptions and such a variety of etiological hypotheses as has anorexia nervosa. It is a disorder characterized by behavior directed toward losing weight, peculiar patterns of handling food, weight loss, intense fear of gaining weight, disturbance of body image, and in women, amenorrhea. It is one of the few psychiatric illnesses that may have a course that is unrelenting until death.

Anorexia nervosa has a rather sudden onset in seemingly healthy adolescent girls and young women who are described as having been perfect children, obedient, hardworking, excelling academically, admired by their teachers, and often the confidants of their parents. What supposedly precipitates this severe illness are trivial remarks or commonplace events. The question offers itself, why are the youngsters so unprepared to meet the challenge of

adolescence--namely, the need to grow beyond the immediate family and to engage in relationships with members of their own age group; and what are the antecedents in their thinking and behavior that make them withdraw to their own bodies and choose the road of starvation?

In order to study and better understand the phenomenon of anorexia nervosa, as well as serve the increasing number of referred patients with this disorder, the Eating Disorder Clinic of Children's Hospital National Center in Washington, DC, was established in the summer of 1983. It is an integral part of the Department of Adolescent Medicine in collaboration with psychiatrists, social workers, psychologists, nurses, and nutritionists. It contains a four-bed in-patient unit, as well as a regularly scheduled out-patient department. The patients with anorexia nervosa are thoroughly examined following a standardized list of procedures, which cover psychological factors, such as psychiatric status, intellectual endowment, family functioning, and physical aspects of the illness, in addition to information regarding the severity of the weight loss, amenorrhea, and endocrinological changes. The clinic has a positive attitude toward research, and its staff warmly welcomed the author when she presented her ideas to be studied.



### Purpose of Study

The purpose of this study was to investigate some psychological factors of current anorexia patients and of their female adolescent siblings who have never exhibited eating disorders, to identify those psychosocial factors that are shared by anorectics with these sisters, and those that separate the two groups. It was our hope that such use of the siblings as a comparison group would help to better illuminate the role played in anorexia nervosa by those psychosocial factors. This study was designed, both theoretically and methodologically, to have internal cohesion and to stand alone as a discrete piece of research meeting the requirement for the author's doctoral dissertation and potentially as an integral part of a larger study of eating disorders at Children's Hospital National Medical Center.

The two research groups were compared on the following psychological dimensions: anxiety disorders, affective psychopathology, perceived social networks, locus of control, parents' assessment of child's competence, child's assessment of the same, and perceived family cohesiveness and adaptability. The relationship among these variables was also studied within the different samples.

The experimental procedures used in this study consisted of standardized tests administered to the anorectic patients, their siblings, and their mothers, and were designed to

elicit information regarding individual and family functioning and perceptions.

The following section of this introduction presents a rationale and a conceptual framework for the study of children with anorexia nervosa and their female siblings who are free of eating disorders, and the theoretical basis for the research relevant to the choice of study variables. Following this, hypotheses formulated to research the general study questions and aims are presented.

#### Rationale for the Study

There is much in the literature to suggest and support the premise that female siblings of patients with anorexia nervosa are at considerable risk for psychopathology. Six to seven percent of them acquire anorexia nervosa, many times more often than the general population (Theander, 1970) and many more acquire a pseudo-anorexia nervosa, also labeled by one author as "anorexia nervosa a deux" (Mester, 1982). The latter disorder usually clears up as soon as the sisters are separated and probably represents a mimicking of the disorder.

The higher frequency of true anorexia nervosa, in siblings of patients as compared with the general population, indicates an important risk factor both for anorexia nervosa and for general psychopathology. This factor can consist of (a) genetic predisposition, (b) a similar environment, (c) and most likely a combination of the two.

### Genetic Factors

The factors which indicate a genetic basis for anorexia nervosa are: (a) the above-mentioned increased frequency in sisters of siblings of patients with this disorder (Theander, 1970), (b) a close to 50% congruence for anorexia nervosa in homozygous twins (Mester, 1982), and (c) the occasional occurrence of anorexia nervosa in first degree relatives (other than sisters) (Winokur, March, & Mendels, 1980). The nature of the genetic vulnerability is not yet clear but is speculated by some to be an abnormal response to stress, with a steep rise of cortisol (Barry & Klawans, 1976). This, in turn, triggers secondary or tertiary reactions which are responsible for the physical symptoms of anorexia nervosa. Since genetic markers for anorexia nervosa are at present unknown, the genetic factors cannot be directly identified, and only the probability of their occurrence can be estimated.

In regard to the link of anorexia nervosa to affective disorders and depressive spectrum disorders such as alcoholism and drug addiction, there are two parallel trends in the literature. There is a high incidence of affective disorders cited by some (Cantwell, 1977) in the diagnosed anorectic patient. Some investigators, Fleck, Lange, & Thoma (1965) went so far as to consider anorexia nervosa an offshoot of the manic-depressive disorder. Others (Mester, 1982) note the high incidence of affective disorder in first

degree relatives of patients with anorexia nervosa. These findings would reinforce the risk factor for siblings of the patient with anorexia nervosa as to their vulnerability to serious psychopathology.

#### The Environmental Factors

The environment, especially the family environment, has been clearly implicated and studied in detail by many. Minuchin, Rosman, & Baker (1978) stressed the psychopathology in families of patients with anorexia nervosa. He depicts them as being "enmeshed," and rigid. Bruch (1962) emphasized the abnormal and ambivalent mother-child relationship which prevents the child from maturing emotionally and to negotiate the most critical task of a budding adult, that is, separation and individuation.

Family studies indicate faulty communication patterns, enmeshment, parental resistance to autonomy and separation-individuation affecting every member of the family, which acts as an integrated circuit. Thus, although one particular child may develop the full-blown picture of anorexia nervosa, it seems implausible to assume that the other children will all remain unaffected. Rather, one would expect that at least some of them will have problems similar to their anorectic siblings in the areas of autonomy, separation-individuation, patterns of socialization, and perception of control of their lives.

In considering the family dynamics, the literature stresses the role of faulty mothering, resulting in either neglect of the developing child or overprotection, both of which behaviors prevent the growing child from developing an autonomy and a sense of self (Bruch, 1981). It is, of course, possible that a mother may have a disordered relationship with only one of her children. It is, however, more than likely that such maternal attitudes will affect more than one child.

Related studies (Humphrey, 1981) indicate that not only are the children of these families unable to develop a sense of self, but they are effectively prevented from doing so by the mother who meets their attempts at separation with open resistance and hostility. It can be speculated that such perverted parental attitudes and negative injunctions may well be the philosophy of child-rearing practices pervasive in these families extending not only to the patient but also to her siblings.

More important than the study of vulnerabilities in the sisters of patients with this eating disorder is the study of the psychosocial strengths of this group which may help to identify those factors associated with psychiatric health or resilience which protect an individual at risk for anorexia nervosa. A number of psychosocial variables command attention as likely mediators of psychological disorders in childhood. For example, a substantial body of literature

links locus of control (Lefcourt, 1981) and self-esteem (Wilcox & Fritz, 1971) to a wide variety of adjustment difficulties in childhood. Perceived availability of social support has been closely linked to affective risk in adulthood (Hirshfeld & Cross, 1982) and in children (Pellegrini, 1984).

The present study was undertaken with these issues in mind, and the findings of such may contribute not only to a better understanding of anorexia nervosa but also to more effective treatment and, above all, prevention of this serious illness.

As with most other illness, the vulnerability to anorexia nervosa, or the lack of it may be related to biological inherited factors. As of this time, however, the identification of such genetic markers associated with the disease has not been accomplished. For this reason, among others, the thrust of research at this point and time is in the psychosocial area, which is better understood and therefore can provide plausible and testable hypotheses. It is generally accepted that although anorexia nervosa is a syndrome with distinctive phenomenology, its symptoms result from an interplay between the constitutional, biological, and psychosocial factors, the latter of which are of vital importance in the understanding of the risks and challenges to the sibling of the patient with anorexia nervosa.

The siblings of patients with anorexia nervosa have provided us with an opportunity to study the similarities they share with their sisters as well as those features in which they differ. It is the latter which is of most importance in efforts at prevention of anorexia nervosa while it is the former which have given most insight into the family process of patients with this disorder.

This study constituted a comparative risk research in the domain of anorexia nervosa, an area of inquiry currently of great concern in the field of mental health. Its social value lies in the generalizability of findings to a large segment of the population and the implication of findings for preventive intervention and generating of therapeutic strategies.

#### Conceptual Framework

The conceptual framework for this study derives from several theories and paradigms, including constitutional factors, risk and invulnerability, stress and coping, family systems, separation-individuation, and object constancy.

An extensive literature on emotional disorders in childhood points to the causative interplay of genetic, temperamental, intellectual, interpersonal, and social factors.

### Psychological Factors in Anorexia Nervosa

Anorexia nervosa is a severe and intractable disorder, characterized by severe deficits in psychological development. Bruch (1973) highlighted these deeply rooted psychological difficulties and has postulated three criteria as the basis of her psychological diagnosis of true primary anorexia nervosa: (a) inability to perceive internal body cues, (b) delusional body image, and (c) a paralyzing sense of ineffectiveness. In some anorectics in whom sociocultural factors play a larger part than deviant or retarded psychological development, we may be dealing with a more superficial disorder, rather than with primary anorexia. This is a crucial diagnostic question which Bruch, herself, raises when she uses the term "psychosociological epidemic." Many suggest that there are various pathways to the eventual shape of this emotional disorder (Rakoff, 1982). When food regulation, for example, becomes caught up in the content of overly negligent or overly intrusive parenting in infancy, any number of anorectogenic preconditions may develop, such as failure to learn, experience, and perceive the normal cues of satiation and hunger, and the use of food control as an attempt to achieve autonomy and separation from parents.

At the same time, the course of the eventual disorder, its form and content, may not necessarily be set in the early life of the infant. Rather, an early life trauma may establish a general disposition towards emotional difficulty



in later life, the exact form of which may be shaped by factors and events unrelated to the early life of the child.

Our affluent Western society stresses the importance of weight control and thinness as a desirable state in contemporary women. Such cultural influences, especially when they interact with some latent psychopathology in a predisposed individual, may trigger the onset of the disorder. For example, the pursuit of thinness through rigid adherence to diet and weight control may fit the underlying needs of someone who is emotionally conflicted around the issues of self-esteem, autonomy, or separation from the family.

### Social Variables

#### The Family.

Even in homes marked by discord, the parents are a critical source of emotional security (Rutter, 1978). His findings indicated that if a child had a relationship with one parent marked by a high degree of warmth and the absence of severe criticism, it provided a strong degree of protection for the child. In such homes, only 25% of the offspring manifested a conduct disorder, compared with 75% of children from families that were demographically similar but differentially quarrelsome and in which both parents failed to provide a supportive relationship for the offspring. Rutter (1966) also found six family variables to be strongly associated with child psychiatric disorder: severe marital

discord, overcrowding, large family size, parental criminality, and maternal psychiatric disorder. More specifically, evidence is accumulating on the role of the mother-infant relationship in childhood disorders (Lidz, 1973) as well as the role of the disordered family (Minuchin et al., 1978).

#### Other Social Relationships.

Recently, researchers have increasingly focused on the importance of social networks and close personal relationships (Rutter, 1979). Most studies on the influence of social networks have been done with adults. Such studies include Paykel, Emms, Fletcher, and Rassaby's (1980) study of life events and social support in the puerperium; Nuckolls, Cassel, and Kaplan's (1972) study of psychosocial assets, life crises, and complications of pregnancy; Theorell's (1976) study of life crisis, discord, and illness; Eaton's (1978) analysis of life crisis, social supports, and psychiatric symptoms in the New Haven study. The general pattern of the studies is supportive of the notion that good personal relationships and social supports may mitigate the effects of stressful life events, and that a lack of such intimate relationships increases the adverse effects of stressors. Just as good relationships in the family seem to be protective, good relationships with peers or other adults outside the family may also serve to mitigate the effect of stress (Rutter, 1979).

Rutter (1979) further describes the socializing influences of the school, a critical societal institution. If the school that the child attended provided a distinct encouraging environment marked by the following: a meaningful academic emphasis, teacher-pupil participation, the use of incentives and rewards, the encouragement of a sense of responsibility in the student, firm positive discipline, high expectations of student competence, teacher concern for pupil progress, a sense of common purpose, and an emphasis and acceptance of the school's values, then the school, too, could serve as a "protective" factor for stressed children.

### Stress and Coping

In considering the issue of coping, individual differences in responsiveness are crucial; whereas, some people develop a disorder following life's adversities, others do not (Rutter, 1979). Indeed, not only may they show resilience in not succumbing to these stresses, but the stresses may exert a positive and beneficial effect. There is still insufficient knowledge to understand why and how these individual differences operate. Part of the explanation may lie in the personal qualities and characteristics which the individual brings to the adverse life situation (Rutter, 1978).

In the recent risk research in psychopathology, attention has shifted from the emphasis on maladaptation and

incompetence to protective factors, those attributes of persons, environments, situations, and events that appear to temper predictions of psychopathology based on status of an individual at risk. Protective factors provide resistance to risk and foster outcomes marked by patterns of adaptation and competence (Garmezy, 1974).

"Invulnerability" is a phenomenon that had been originally described in offspring studies of schizophrenic patients (Anthony, 1975; Bleuler, 1978; Garmezy, 1974a, 1974b). Bleuler interprets invulnerability as a hardening or "steeling" process which occurs in children who develop highly adaptive coping mechanisms in defiance of their devastating environments. Anthony defines invulnerability as emanating from the individual's own effort, initiative, strength, and endurance, and suggested that heightened creativity may emerge as a result. Garmezy has attempted to establish criteria of competence that would elucidate the qualities of stress-resistant children. The main purpose of the present study is to investigate the vulnerabilities and strengths of another at risk group, that is, the sisters of the anorectic patients which may help us to identify the noxious as well as protective factors in families of patients with eating disorders. The currently popular diathesis-stress model of the etiology of psychopathology requires an investigation of children at psychiatric risk, in order to define explicitly the parameters of such a target population,

and ultimately to determine effective methods of preventive intervention (Wynne, Cromwell, & Matthysse, 1978).

Variables explored in research on children at psychiatric risk have included parental diagnosis and symptomatology, parental interaction, and child school and social competence. In a study that included multiple diagnostic groups of parents with psychiatric disorders, Kokes, Harder, Fisher, and Strauss (1980) discovered that parental diagnosis had a less clear relationship to child school competence and social competence than did certain underlying affective dimensions of parental symptomatology and parental interactions. It thus appears that three classes of factors are implicated in these studies on coping with life's adversities. These are: (a) personality characteristics, (b) a supportive family milieu, and (c) a social network or societal agency that supports and reinforces a child's coping efforts by encouragement and the inculcation of positive values.

Other authors (Cox, 1978) turned attention from the influence of stress on individual children to its influence on the family system. In other words, some families are more vulnerable to adverse life events, while others may cope with adversities successfully. Such family processes will invariably affect every family member, albeit not to the same extent.

### Families at Risk

Prospective studies in which the psychiatrically ill parent is the starting point were originally designed to investigate the effect of schizophrenia and/or psychosis upon the offspring of the parental proband (Bleuler, 1978; Garmezy, 1974a, 1974b). The study of children at psychiatric risk may be attributed partly to an impetus from a proliferation of theories about environmental forces in the family which may play a role in the etiology of schizophrenia (Bateson, 1972; Lidz, 1973; Singer, Wynne, & Toohy, 1978).

These findings and theories stimulated an interest in gathering further evidence on children in disordered families with other psychiatric problems, including anorexia nervosa, an effort that has been initiated by Masterson (1977), Minuchin et al. (1978), Anthony (1975), Weissman, Paykel, & Lerman (1977).

Knowledge already gleaned from the study of children at risk for schizophrenia may serve as a model for generation of hypotheses regarding the families and especially the siblings of the anorectic patient.

### Statement of Research Aims and Hypotheses

In this section, each general research question will be presented followed by the hypotheses formulated to research the question. In total, there are four research aims (questions) and a series of nine hypotheses to guide the research.

Aim 1. How do female patients with anorexia nervosa and their sisters, who are free of eating disorders, compare on measures of social network, locus of control, perceived competence, perceived family cohesion and adaptability, anxiety disorder, and affective psychopathology?

- (1) There is a difference between patients with anorexia nervosa and their sisters who are free of eating disorders on the level of intimacy and social support in their perceived social network.

Rationale/Variables. Hypothesis 1 was supported by the research reviewed and the author's clinical experience. It was intended to study the theoretical relationship between an impoverished social support system and anorexia nervosa. For purposes of statistical analysis, the subjects' diagnostic category membership was the independent variable, and the difference in the perceived social network was the dependent variable.

- (2) There is a difference in the manifestation of more external locus of control in the patients who have anorexia nervosa than in their sisters who are free of eating disorders.

Rationale/Variables. Hypothesis 2 was supported by the research reviewed. It was proposed to test the theoretical relationship between the feeling of being manipulated and the prime symptom of anorexia nervosa, that is, refusal to eat. For purposes of statistical analysis, the subject's diagnosis

category membership was the independent variable, and the subject's locus of control was the dependent variable.

- (3) There is a difference between the patients with anorexia nervosa and their siblings who are free of eating disorders on self-perceived competence in that the patients perceive themselves as less competent.

Rationale/Variables. Hypothesis 3 was supported by the literature reviewed. It was intended to study the relationship between a low self-perceived competence and anorexia nervosa. For purposes of statistical analysis, the subject's diagnostic category membership was the independent variable, and the self-perceived competence was the dependent variable.

- (4) There is no difference between patients with anorexia nervosa and their sisters who are free of eating disorders on their perception of family cohesion and adaptability.

Hypothesis 4 was supported by the research reviewed and the author's clinical experience. It was intended to study the perception of enmeshment and rigidity of the nuclear family in all family members of the patients with anorexia nervosa. For purposes of statistical analysis, the subject's diagnostic category membership was the independent variable, and perceived family cohesion and adaptability were the dependent variables.



- (5) There is no difference in the incidence of anxiety disorder between the anorectics and their sisters who are free of eating disorders.

Rationale/Variables. Hypothesis 5 was supported by the research reviewed. It was intended to test the relationship between the psychopathology in families of anorectic patients, and psychopathology in each family member. For purposes of statistical analysis, the subject's diagnostic category membership was the independent variable, and the incidence of anxiety disorder was the dependent variable.

- (6) There is no difference in the incidence of affective disorders between the patients and their sisters who are free of eating disorders.

Rationale/Variables. Hypothesis 6 was supported by the research reviewed and the author's clinical experience. It was proposed to test the theoretical relationship between anorexia nervosa and affective disorders that are reported to be very prevalent in families of anorectic patients. For purposes of statistical analysis, the subject's diagnostic category was the independent variable, and the incidence of any affective disorders was the dependent variable.

Aim 2. What is the difference between the mothers' perception of the competence of their daughters with and without anorexia nervosa?

- (7) There is a difference between the mothers' assessment of the competence of their daughters' with anorexia nervosa and of those who are free of

this disorder, with the anorectics perceived as less competent.

Rationale/Variables. Hypothesis 7 was supported by the research reviewed and the author's clinical experience. It was intended to study the theoretical relationship between the parents' view of their children's adequacy and anorexia nervosa. For purposes of statistical analysis, the subject's diagnostic category membership was the independent variable, and the subject's competence (as perceived by the mothers) was the dependent variable.

Aim 3. What is the relationship between the mothers' perception of competence and the children's perception of their own competence?

- (8) There is no difference between the mothers' perception of both daughters' competence and the daughters' self-perception of competence.

Rationale/Variable. The four competence factors were used to assess the relationship between parental perceptions and self-reports.

Aim 4. What is the relationship among the variables in each group? Do these relationships differ between the groups?

- (9) There is a difference in the number of related correlations between the patient and sibling variables; the sibling variables are not as highly related as those of the patients with anorexia nervosa

### Definition of Terms

Following from the preceding discussion of theory, those terms are defined that represent parameters and variables of the proposed study. The definitions are an effort at conceptual clarification and beginning operationalization.

#### Anorexia Nervosa

Anorexia nervosa is a disorder of unknown etiology, more typically found in adolescent girls between the ages of 16 and 25 who show extreme weight loss with no demonstrable organic disease, amenorrhea, a slow pulse and lowered respiration rate, a tendency to irritability, and a remarkable energy and ceaseless activity which is maintained in spite of a massive weight loss.

The set of diagnostic criteria to be used for a diagnosis of anorexia nervosa are those described in the third edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders" of the American Psychiatric Association (DSM-III) (1982). The diagnosis requires the following symptoms:

1. Refusal to maintain body weight over a minimal normal weight for age and height.
2. Weight loss of at least 25% of original body weight, or if a patient is under 18 years of age, weight loss from original weight plus projected weight gain expected on pediatric growth charts may be combined to total the 25%.

3. Disturbance of body image with inability to perceive body size accurately.

4. Intense fear of becoming obese. This fear does not diminish as weight loss progresses.

5. No known medical illness that would account for weight loss.

6. Amenorrhea (in females).

### Vulnerability

Vulnerability is a concept related to stress coping and can be defined as loss of adaptiveness under stress. Factors that are related to vulnerability and predisposition to stress can be reflected in diathesis studies of temperament, somatotype, maturation level, fatigability, biogenetic fragility, and some psychopathological states.

### At Risk

A term associated with development of psychiatric disorder.

### Female Patients

Female patients, age 12 to 21, who fulfilled the criteria of anorexia nervosa of the DSM-III described as above.

### Siblings

Sisters of patients with anorexia nervosa who are themselves free from any eating disorder. Their ages should

range within three years of the patient, either older or younger. In the event that there are several sisters, the one closest in age to the patient was included in the study.

### Social Network

Blyth (1982) defines a social network as a "specific set of linkages among a defined set of persons with the additional property that the characteristics of these linkages as a whole may be used to interpret the social behavior of the persons involved" (p. 2). It is not necessary for the members of the network to be individual people; the units could, in fact, be larger social units such as families, or corporations. In this particular study, I am referring to the individuals with whom the adolescent has meaningful emotional ties. These may be children, adults, peers, family members, and people from outside the family. Of greatest significance are the individuals who are potential sources of support to the adolescent in time of crisis.

### Locus of Control

Locus of control, a construct of attribution theory that was first developed by Nowicki and Strickland (1973) relating to beliefs about internal versus external control of reinforcement. It is assumed that individuals develop a general expectancy regarding their ability to control their lives. People who believe that the events that occur in their lives are a result of their own behavior and/or personality

characteristics are said to have "expectancy of internal control," while people who believe events in their lives to be a function of luck, chance, fate, powerful others, or powers beyond their control or comprehension are said to have an "expectancy of external control."

Various questionnaires have been devised by Rotter (1966) to measure this belief system, such as the I-E Scale and the IPC Scale. Each of them has been criticized on psychometric grounds. The concept has been widely used and applied in cross-cultural studies, studies on health beliefs, and behavior investigations of mental illness and many other areas of research. In this study, locus of control was measured by the use of Nowicki-Strickland (1973) Control Scale, a 40-item measurement designed for 9 to 18 year olds. Total score was converted to the proportion of items endorsed in an internal versus an external direction.

### Anxiety Disorders

Of the wide range of anxiety disorders listed in the DSM-III, I chose the two which are most prevalent in childhood and adolescence, namely Separation Anxiety Disorder and Overanxious Disorder. Separation Anxiety Disorder is characterized by excessive anxiety concerning separation from those to whom the child is attached as manifested by symptoms numbering at least three from a list of a possible seven. Overanxious Disorder is characterized by a generalized and persistent anxiety or worry (not related to separation) as manifested by at least four from a list of seven symptoms.

### Affective Psychopathology

Affective psychopathology includes any mental disorder listed in DSM-III in which disturbance of mood is the primary characteristic, while disturbances in thinking and behavior are secondary. In DSM-III, the affective disorders include bipolar affective disorder, major depression, cyclothymic disorder, dysthymic disorder, and atypical affective disorders. The chief differentiating characteristic of major depressive from dysthymic disorder is the number and kinds of symptoms present. The diagnosis of dysthymic disorder requires the presence of two or more symptoms from a list of 16; major depressive disorder requires five or more symptoms from a list of eight. Both syndromes have had to have had episodes of at least one week's duration. Cyclothymic disorder is characterized by numerous short periods of depressive and hypomanic symptoms of moderate severity. In the study I tested categories of major depression, dysthymic disorder and cyclothymic disorder.

### Parental Perceived Competence

The way the parents perceive the competence of their children, both the anorectic and those without an eating disorder, as indicated by their responses on the Harter's Parent Rating Scale of the child's actual competence. There are four areas of competence in this scale: (a) cognitive (b) social, (c) physical, and (d) general competence.

### The Children's Perceived Competence

The way the patients and their sisters evaluate their own competence on the Harter Competence Scale (see above).

### The Perceived Family Cohesion and Adaptability

The way family members rate their families on cohesion and adaptability, using a test called FACES. On the dimension of cohesion, the ratings may range from extremely tight family structure to a total lack of family ties. On the dimension of adaptability, the ratings may range from unyielding rigidity to a lack of any structure in the family.

In Chapter II of this dissertation, an overview of research relevant to anorexia nervosa with specific emphasis on factors relating to the study variables is presented. In Chapter III the research design and methodology are discussed. Chapter IV is a presentation of the results of these findings, and Chapter V is a discussion of these findings.



## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### General Overview

Anorexia nervosa, a disorder of unknown etiology, has been investigated from the perspectives of biology, neuro-endocrinology, and psychology. It is characterized by behavior singularly directed toward losing weight, extreme weight loss, great fear of gaining weight, misperception of body image, and amenorrhea.

This disorder is often regarded by many as the quintessential psychosomatic disease, a favorite model of complex interdependent mind-body interactions (Kaufman & Heiman, 1964 and Minuchin et al., 1978). There are some (Sours, 1980) who disagree with this classification because in their opinion, anorexia nervosa lacks the well-delineated physical syndrome found in such entities as bronchial asthma and gastric ulcers.

Interest in its etiology and treatment has emerged as a strong focal area among medical and related disciplines, and although officially recognized in the last quarter of the nineteenth century, the syndrome has been fully appreciated only in the last three decades (Sours, 1980). It has been during this period that the condition has prompted an impressive list of scientific writings relating the role of psychological and social factors to this disorder.

Although matters of diagnostic criteria, nosology, and etiological mechanisms are still debated, there is a consensus among the various health disciplines that anorexia nervosa is a disease of multidimensional complexity and probably of multifactorial etiology. Some of the topics that have been studied and discussed regarding anorexia nervosa include: heterogeneity of response to social, psychological and physiological stresses; the influence of family and culture; psychodynamic factors; perceptual distortion; and neuroendocrinological disturbances. In addition, genetic factors and secondary effects of starvation, per se, have been cited as other related determinants of symptoms in this disorder.

Anorexia nervosa, a feeding disorder with primary and secondary clinical features, is primarily an illness in adolescent girls, although it has been cited as early as age 4 (Sylvester, 1945) and later in adulthood (Halmi, 1973). It occurs more often in girls than boys (in a ratio of 10:1) and is reported to have a mortality rate between 7 and 25% (Hsu, Crisp, & Harding, 1979). Although occurring typically during puberty, the disorder may evidence itself at any time among those who are having difficulty in negotiating the central tasks of adolescence as defined by Erikson (1963), namely, autonomy, self-definition, and free choice.

In the past, anorexia nervosa has been a condition of the middle class and relatively affluent population. This is

presumably changing presently as members of all social classes become equally vulnerable due to a democratization and concerns with fashion and external appearance influenced by public media with stress on desirability of thinness (Rakoff, 1982).

The recent international interest in anorexia nervosa most likely relates to its rising prevalence in the United States, Great Britain, Japan, and continental Europe (Theander, 1970). The reasons for the increased incidence of anorexia nervosa are not clear.

It has been suggested that children reared in our modern Western culture are pushed earlier into adulthood with little structure and control by their family and society. There is a body of opinion which holds that the developmental issues of autonomy and individuation have become more difficult to negotiate in our society (Blos, 1967).

Whatever the influences have been, it is clear that there is a psychosocial factor in Western culture that promotes this syndrome. This is especially evident in Japan where Westernization has increased the incidence of anorexia nervosa (Sours, 1980).

Adolescents, vulnerable as they are to internal and environmental pressures, are the most common population at risk for anorexia nervosa. Adolescence is the period of establishing identity and separating and detaching from family. When there are conflicts and confusions in the role

dictated by society and mediated through the family, the adolescent must choose which model to follow. If a vulnerable adolescent is unable to make that decision appropriately, anorexia nervosa may develop as a result of such uncertainty and ambiguity. As was previously mentioned, it has been long recognized that a multifactorial etiology is involved in this disorder. Some of the proposed risk factors include: an impairment in the maternal environment (Bruch, 1973), a particular pattern of family interactions (Minuchin et al. 1978), and possibly some predisposing endocrine factors (Vigersky, 1977). To this one must add sociocultural influences (Garner & Garfinkel, 1982). At present, we are not yet in a position to state which of these factors is of greater or lesser import. We may presume that in some cases of anorexia nervosa the early life traumas and familial factors have a proportionately greater share in producing the disorder, and in some other cases sociocultural pressures may have a greater share. Of course, a biological vulnerability may be of overriding importance. All we can say at present is that there are many possible paths to the development of anorexia nervosa.

In the past 20 years many careful and comprehensive descriptions of the clinical characteristics of anorexia nervosa (King, 1963; Bruch, 1966; Sours, 1968; Halmi, Brodland, & Loney, 1973; Silverman, 1978), a few large demographic surveys (Dally, 1969; Theander, 1970; Halmi,

1974), and several follow-up studies (Kay & Leigh, 1954; Crisp, 1965a; Halmi, Brodland, & Rigas, 1975; and Morgan & Russell, 1975) have furthered our understanding of this complex disorder.

Although there appears to be an increasing incidence of the disease at this time, the symptoms were described by Morton as early as 1689, and the terms themselves date from the mid 1800s. "Anorexia" is actually a misnomer, implying a disorder that somehow results in a lack of appetite when more accurately, the illness is characterized by a tremendous fear of gaining weight. The anorectic's appetite is quite normal, and against the healthy desire for food comes the overwhelming fear that they will lose control, become obese, and even eat themselves to death. They counter the fear by withdrawing from food altogether or by eating ravenously, after which they may induce vomiting in answer to their deep-seated fear of losing control. Halmi, Dekirmenjian, Davis, Casper, & Goldberg (1978) refer to the latter group as bulimic anorectics to distinguish them from the exclusive dieting anorectics, both of which groups are considered to be subgroups of the same disorder, namely, anorexia nervosa (Strober, 1982).

The syndrome of anorexia nervosa was described and named in 1874 by Sir William Gull, who depicted the disease as occurring typically in girls between the ages of 16 and 25 who showed extreme loss of weight with no demonstrable

organic disease, amenorrhea, a slow starvation pulse and lowered respiration rate, a tendency to irritability, and a remarkable energy and ceaseless activity which these patients maintain in spite of a massive weight loss.

Gull recognized the involvement of the family in this illness and recommended isolation of the patient from the family as a necessary factor in the treatment. A decade later, Huchard (Decourt, 1954) suggested the name, "anorexia mentale," which is the term for this disorder presently used in France. In 1904, Gauckler described the obsessional and hysterical forms of anorexia nervosa. A secondary anorexia mentale associated with depressive or psychotic states was distinguished from the primary anorexia mentale by Dejerine and Gauckler (1915). After Simmonds reported a destroyed pituitary gland in a woman who died of emaciation (Halmi, et al., 1978), anorexia nervosa was often erroneously diagnosed from 1914 until about 20 years ago as Simmonds' disease. Sheldon (1939) provided evidence that anorexia nervosa and Simmonds' disease are separate entities.

Thoma (1963) described primary anorexia as a discrete psychiatric syndrome clearly distinguishable from anorexia, a weight loss secondary to phobic anxiety, severe depression or schizophrenia. Bruch (1962) also distinguishes between two groups of psychogenic anorexia and cites as the core issue in primary or true anorexia the following symptoms: a distortion of body image and body concept, the relentless

pursuit of thinness in a struggle for control, denial of hunger or appetite, and an overpowering sense of ineffectiveness. In the secondary form, she states that the nature of the primary condition may be hysterical, phobic, borderline, depressive, psychotic, or due to some other personality aberration. In such instance, the failure to eat is merely a surface symptom. Bliss and Branch (1960) who do not discriminate between primary and secondary psychogenic anorexia suggested that a 25% weight loss on the part of the patient due to any kind of psychiatric condition be diagnosed as anorexia nervosa.

King's (1963) categorization of anorexia nervosa into primary or secondary forms attempts to establish anorexia nervosa as a specific nosological entity, "an obscure organic disease, a primary disorder of appetite regulation" (p.85). Loss of weight and fear of the development and physical changes that occur with puberty are suggested by Crisp (1967) as a primary form of anorexia nervosa. Still another researcher, Russell (1969) proposed that a hypothalamic dysfunction may be the causative factor in anorexia nervosa interfering with both neural and metabolic functions.

#### Epidemiology and Prevalence

Theander (1970) calculated the incidence of anorexia nervosa in a region in southern Sweden over a 30-year period from 1930 to 1960 to be 0.24 per 100,000 inhabitants per year. He calculated this overall incidence in women only.

He also noted that there was a sharp increase in incidence during the three decades and that in the last decade (1951-1960) the incidence was 0.45 per 100,000.

The apparent increase in incidence of anorexia nervosa was also reported by Halmi (1974), who reported that between 1920 and 1954, 43 patients (1.3 cases per year) of anorexia nervosa were diagnosed at the University of Iowa Hospitals and Clinics. From 1955 through 1971, 51 anorectic patients (three cases per year) were seen. Duddle (1973) reported that the number of cases of anorexia nervosa increased sharply from none in 1966 to 13 in 1971 at the Student Health Center at Manchester University. These incidence studies have all been taken from case register studies and within clinic populations. Such methods of data collections are undoubtedly revealing only a minority of cases.

Crisp, Palmer, & Kalucy (1976) surveyed nine populations of schoolgirls in London during the period of 1972 to 1974. The prevalence of one severe case in about 200 girls rose with age, and in those aged 16 and over, it amounted to one severe case in every 100 girls. The diagnostic criteria for anorexia nervosa in DSM-III fit all Crisp's more severe cases. The predominant incidence of this disorder in the upper and middle socioeconomic classes has been reported both by Crisp et al. (1976) and by Morgan and Russell (1975). Thus, recent prevalence studies confirmed the older data



about increased prevalence of anorexia nervosa in adolescents and young adults, mainly in the higher socioeconomic classes.

As previously mentioned anorexia nervosa occurs predominantly in females. In a survey of 94 patients with this illness, Halmi (1974) reported only 6 males (6-1/2%). This percentage of males is similar to the 5% figure reported by Decourt (1954) and Fleck et al. (1965) and the 4% found by Dally (1969).

However, Kendall (1973) reported an unusually high proportion of males (7 out of 24 cases) of anorexia in Monroe County, New York State, between 1960 and 1969, this being the only incidence study of anorexia nervosa conducted in this country. Eight of the 17 females reported were under 15 and 3 were over 34. Most studies have shown that anorexia nervosa occurs most frequently between the ages of 15 and 25.

Kendall's (1973) case register survey in Scotland, suburban London, and upper New York State revealed an increased incidence in all three locales. Though case records of mental health clinics and psychiatric hospitals are one of the most accurate methods of establishing actual incidence, epidemiological investigators agree that only a small percentage of primary anorectics are picked up through such case register studies. Thus, Kendall's figure of 16 cases annually per 1 million population may be conservatively low.

### Increasing Incidence

How real is the increasing incidence of anorexia? (1) There is at least some empirical evidence that anorexia is increasing. Theander's (1970) retrospective follow-up study, covering a period of 30 years, found that the annual incidence for the entire period was 2.4 cases per 1 million population. However, during the last ten years of the period studied, from 1951 to 1961, the annual incidence was 4.5 cases, or approximately double the rate for the entire life span. Theander was, himself, reluctant to infer that there was a real increase; rather, he attributed it to increased reporting and awareness. (2) The leading authorities in the field of anorexia seem to agree that there has been an increase. Bruch (1970) again writes that it has become a common problem in high schools and colleges. The growing concern resulted in the first international interdisciplinary conference being held in Maryland in 1976. There was a conference on anorexia in Montreal in 1979, and a second international conference in Toronto in 1981.

If we take a conservative figure from the anorexia outcome literature that one-third to one-half of anorectics never recover, and we extrapolate from these data, we are led to conclude--using Theander's figures or Crisp's, respectively--that 1 in 450 or 1 in 750 adult women is afflicted for life with chronic primary anorexia, or with some severe anorectic symptoms.

Furthermore, the tremendous growth of the recent literature on anorexia is important evidence which may reflect the growing concern for an increasing incidence of the disease, or alternatively reflect our increased awareness of this disorder.

Up until 1950 there were perhaps 250 cases--usually individual case reports--described in the literature. There are now perhaps 5,000 patients reported on in studies ranging in sample size from 20 to 350 anorectics.

Thus, there is some direct and indirect evidence supporting the assertion that anorexia nervosa is increasing in incidence. This evidence does not even begin to shed light on the relatively newly identified phenomena of anorexia-like behavior, attitudes, and lifestyle of otherwise normal weight women. The depth and extent of these problems has only come to the attention of clinicians and researchers in the past few years. There is little or no epidemiological data with respect to this problem in the present, much less a bank of historical documentation with which to make comparisons. There are only a few who are not struck, however, by the epidemic proportions of this behavior now that the surface has been scratched.

#### Etiological Considerations

Adequate studies have not been conducted to establish definite predisposing factors in anorexia nervosa. In the descriptive literature of this illness, several different

stressful life situations have been noted to occur shortly before the onset of anorexia nervosa. These situations have included the death or serious illness of a close relative, a medical illness of the patient herself, failure at school or at work, the necessity to change to a new school or a different job, and sexual conflicts.

Both the average maternal age and the average paternal age at the time of the patient's birth is higher than the average for the population as a whole. This finding was reported in England, Sweden, and the United States; however, a correction for socioeconomic class was not made in any of the surveys. Most descriptions of the premorbid personalities of these patients include model children, excessively clean, tidy, polite and well-behaved, above-average scholastic achievement, and an unrealistic fear of failure.

Among the innumerable psychodynamic formulations that have been made for anorexia nervosa, are those that resemble the dynamics of phobias. Crisp (1967) postulated that anorexia nervosa constitutes a phobic-avoidance response to food resulting from the sexual and social tensions generated by the physical changes associated with puberty. The resulting malnutrition leads to a reduction in sexual interest. Brady and Rieger (1972) also conceptualized anorexia as an eating phobia. They state: "Eating generates anxiety, and their failure to eat represents avoidance. In

other words, their cessation of eating after ingesting little food is reinforced by anxiety reduction" (p. 83).

An early psychodynamic theory was that anorectic patients reject through starvation a wish to be pregnant and have fantasies of oral impregnation. This theory is no longer accepted as valid (Sours, 1968).

#### Separation-Individuation

Erikson (1963) states that a crucial developmental task for all adolescents is the achievement of healthy separation-individuation leading to the establishment of a stable ego Identity. Identity formation is significantly affected not only by early identification but also by multiple social, vocational, and sexual factors along with basic ego endowments and ego adaptive capacity. The patient with anorexia nervosa is found wanting, unprepared to meet the challenge of adolescence, to grow beyond separation from the parent and the immediate family in order to find identity. Bruch (1970) stresses developmental deviation as making the adolescent ill-prepared for the responsibilities of adulthood, and the lack of a stable self-concept and secure self-regard predisposes the anorectic to use thinness in a misguided striving for individuation.

Other investigators have found indirect evidence for the importance of the separation-individuation process in anorexia nervosa through family interview data and case record reviews. Hsu et al. (1979) found that 37% of their

follow-up sample were unable to resolve their hostile and dependent feelings toward their parents. Similarly, Kalucy, Crisp, and Harding (1977) reported that 30% of their anorectic sample were judged to be excessively close to their mothers, and Morgan and Russell (1975) found 54% of their sample to have disturbed family relations.

Most of the results in the preceding discussion, however, were based on relatively unreliable methods, namely, retrospective self-reports. As such, they offered only qualified, and possibly biased support for the view that anorectics fail to differentiate from their constrictive parents. This exploratory research was undertaken as an attempt to apply a more rigorous methodology to this important question of family relationships and individual coping mechanisms in anorexia nervosa. As the main thrust of this study, the functioning of the patients and their siblings of these families will be examined so as to identify those psychosocial factors that are shared by the patients and their sisters and those psychosocial factors that separate the two groups.

#### Mother-Child Interaction

Essentially, these are three major theories of the etiology of anorexia nervosa. The first one using the terms and concepts of ego psychology argues that anorexia is a function of an impaired child-maternal environment in the early years of a child's life. Selvini-Palazzoli (1974)

suggests that due to arbitrary and unempathetic mothering, the child splits off the inner representation of the mother, which remains unintegrated throughout the characteristically compliant childhood of the anorectic. At puberty, however, the girl's body begins to grow more round, and is experienced concretely by the girl as a return--the potentially overwhelming return--of the archaic mother at the expense of the self. Palazzoli calls this "intra-personal paranoia." Bruch's theory (1962) suggests that due to arbitrary mothering which demands compliance from the child in the face of natural bodily impulses (primarily hunger), the child fails to develop the appropriate ego structures which allow her to accurately perceive internal cues of hunger and satiation. For both Bruch and Palazzoli, anorexia is an effort--a last desperate effort--to gain perfect control over the body as a way of regaining control of self and personhood.

Family and developmental studies demonstrate the pathological mothering and difficulties in mutual cueing in the early toddler stage (Bruch, 1962). The early histories suggest that anorectics project a primitive aggression on the mother with the result that they form an unduly cruel superego. The aggression leads to either expression of hostility or to its suppression. Perhaps the marked preponderance of female anorectics is due to difficulties which toddler girls have in the rapprochement subphase of

separation-individuation (Mahler, 1968) and to more ambivalent relationships with their mothers. Constitutional factors may well contribute to this gender preponderance. Fixation points, regression, the strength and vicissitudes of the drives, and the state of the object relations are all important in understanding the early development of these children.

Many psychodynamic theorists (Ainsworth & Belle, 1969; Mahler, 1968) propose that a deficit in mothering will skew the development of object constancy in the offspring, the basis for the separation-individuation. They add that object constancy must be achieved before separation-individuation can occur.

Studies of the self-image in anorexia nervosa (Crisp et al., 1976) suggest that the lack of a stable self-concept and secure self-regard predisposes adolescents to use thinness in a misguided strife for individuation. Since the self-concept originates in early childhood, this notion agrees well with one of Bruch's (1981) most recent propositions that serious developmental deviations make patients ill-prepared for the responsibilities of adulthood.

Underlying the theoretical hypothesis of deviant mothering is a fundamental assumption articulated by the English analyst, D. W. Winnicott (in Anthony & Benedict, 1970) that maturational processes cannot be understood without taking into account the environment that facilitates



them. For Winnicott, environment was synonymous with mother. Winnicott saw mother in a dual role, vis-a-vis the developing child (in Anthony & Benedict, 1970):

. . . there were two mothers for every infant: "the environment mother," whom the child experienced as a caring person and to whom he responded with affection and the "object mother," who was the target of his drives and to whom he responded with excitement. It was the "environment mother" that helped the child to make amends for the ruthless way in which he sometimes used the "object mother." (p. 284)

In Winnicott's view--and that held by object relations theorists--mothering is the external regulating force (constant, active, and positive) that helps the child to maintain homeostasis of drive level. Anthony and Benedict (1970) expand the definition of the maternal function to include: (a) mother as a behavioral model which the child attempts to imitate, (b) mother as a programmer to the child's everyday learning experiences, and (c) mother as a crucial differentiating agent in the child's growth and development.

The developmental histories of anorexia nervosa patients regularly include mention of strong parental emphasis on delay and control of pleasure. Oral gratifications are tolerated and at times overindulged until the toddler stage when the child is prematurely encouraged to conform to a

parental model of compliance and socially acceptable behavior (Sours, 1980). Separation and autonomy are not encouraged by the mother, especially at the time when the first separation-individuation process is taking place. The child must suppress and deny her own individuation to insure maternal supplies. The mothers often set a pleasureless and controlling tone to the family atmosphere and transactions (Sours, 1968) and the patient's individual needs are subordinated to the mother's strict moral codes and rigid, ambitious, and narcissistic ego-ideals.

Among the most influential models of the interaction between the anorectic patients and her mother is that of Bruch (1962) who describes this relationship as well as the intrapsychic battle of the anorectic. Bruch postulates that the anorectic's self-initiated actions particularly related to hunger and satiety are ignored by the mother. The child is fed, not when she is hungry, but when the mother deems it to be necessary. Over time, this leads to self-doubt, a loss of the sense of mastery of the self, and poor ego boundaries. The patient feels herself to be the property of others.

#### Object Love and Feeding Process

The psychoanalytic literature proposes a theoretical relation between the child's development in the feeding relationship and growing capacity for object love, where the child must develop to the point where she fully realizes her own separateness before she is capable of object love. It is

Anna Freud's (1970) assumption that if feeding is a pleasurable experience, then the infant first relates to the food which is the source of pleasure, and later transfers this love to the provider of food. Winnicott (1965) also assumes that the feeding relationship progresses from an initial stage of undifferentiation where the baby is feeding on her self since the baby and the breast are not yet perceived as separate. Bowlby (1980) and Ainsworth and Belle (1969) also place stress on the feeding of the infant as a developmental transition toward object love. They state that the way a mother feeds her baby is predictive of how the child's attachment behavior is going to develop. Winnicott (1965) stressed his belief that the mother needs to provide the baby with "total happenings," allowing the infant to gradually comprehend that when something is begun it will also finish. Analytic research suggests that the anorectic does not own this knowledge. As a consequence, anorectics starve themselves, fearful that if they eat at all they will overeat. Because of conflict resulting from dependence on mothers who do not encourage autonomy, the anorectic feels helpless. Taipale, Tuomi, & Aukee (1970) described the mothers of anorectics as frustrated women with intellectual controls and high standards of performance who cannot tolerate independence in their children.

Authors such as Selvini-Palazzoli, who have developed other models of anorectic family relationships, agree with

Bruch concerning the helplessness of the ego in the anorectic and the sense the patient has of giving up her own body to the mother. Ego pleasures in this disorder now lie in the control and mastery of the body, its movements, its sensations, and the perceptions of bodily and affective states. The anorectic turns against drive satisfactions and regresses to a magic-omnipotent thinking. These adolescents develop a defective representational schema, a cognitive organization built around a diffuse personal identity inculcated by the mother, and perpetuated by their own ego style of control and mastery.

Sours (1980) writes about the signs and symptoms of anorexia in dynamic terms. He states: "The conceptual and perceptual attainment of absolute power and control of body, self, parents, and other significant object relations is central to the syndrome . . . the pleasure of control disassociates body and affective feelings from perceptual impressions and mental representations" (p. 569).

#### Object Constancy and the Anorectic

The psychoanalytic construct or object constancy lends additional theoretical cohesion to the investigation of anorexia nervosa. After locating the origins of the theoretical hypothesis in the psychoanalytic literature, the construct of object constancy will be discussed from a normative and pathogenetic perspective.

Returning once more to Winnicott (1965), he proposed that: "When the environment mother was erratic or markedly inconsistent, it could result in a failure of the development of object constancy . . ." (p. 284).

Reconstructive work with the anorectic confirms the view that an unpredictable mother interferes with object constancy in her offspring. In a clinical study of anorectics, Bruch (1970) found that the probands, in recalling early childhood incidents, stated that self-initiated action on their part was often ignored or discounted by the mother. Likewise, in a clinical study of 12 depressive patients, Cohen et al. (1954) found that:

The critical period . . . seemed to be up to about the end of the first year, when the "hatching" of the separating-individuating individual is about to occur and the child is beginning to experience difficulties in integrating the earlier "good" with the later "bad" mother into a whole person who is sometimes "good" and sometimes "bad," a contradiction that lays the groundwork for the quintessential ambivalence in these individuals. (p. 105)

Cohen introduces the notion of emotional ambivalence. When ambivalence manifests itself behaviorally, it signals difficulty with integrating "good" and "bad," with the achievement of emotional object constancy. In her pathogenetic view of the developmental problems of childhood,

Margaret Mahler (1968) views inordinate behavioral expressions of ambivalence as an index of inadequate progress toward object constancy:

This deficit in mothering has tended to result in a diminution of the child's self-esteem and a consequent narcissistic vulnerability. Ambivalence in behavior . . . and especially aggressive negative coercion of the mother and sometimes the father as well, seem to be age-adequate phenomenological signs, along with the normal negativism of this phase of "separation," which characterizes the anal phase. But prolonged and increasing ambivalence is a sign of skewed emotional development, an indication of increase of unneutralized aggression and of disturbance of the child's progress toward object constancy. (p. 161)

Thus, ego-oriented psychoanalytic theorists have delineated object constancy as an ego function subserving differentiation of the self from the other which is subject to developmental distortion when children are reared by an inconsistent, deficient mother. Mahler (1968) defines object constancy as: ". . . the unifying of the 'good' and the 'bad' object into one whole (internal) representation. This fosters the fusion of the aggressive and libidinal drives and tempers the hatred for the object when aggression is intense" (p. 110).

Louise Kaplan (1978) views object constancy as the "uniting [of] our loving emotions with our emotions of anger and hatred . . ." (p. 82). Object constancy refers, then, to the child's psychological capacity to maintain a mental image of mother in her absence and to integrate precepts of the "good" and the "bad"--the gratifying and the nongratifying--mother. This capacity is an outgrowth of the child's experiences separating and differentiating self from mother during the first three years of life and of the parental role of tension regulator of the child.

There are two essential determinants for the establishment of object constancy. The first of these is the establishment of object permanence, a construct of the cognitive realm coined by Piaget. Object permanence is "the maintenance of a mental image of the absent object" (Mahler, 1968, p. 110). Normally, by 18 to 21 months, a child can retain a positive image of mother when away from her. "He does not turn separateness from mother into a fantasy that she is a bad, frustrating mother who has ceased to care about him or love him" (Kaplan, 1978, p. 29). On the other hand, heightened affective states can unfix cognitive attainments--object constancy and object permanence interact with each other. Regarding this, Mahler (1968) states: "It is typical that when there is a great deal of ambivalence in the relationship, mother's leaving stirs up considerable expressed

or unexpressed anger and longing; under such conditions the positive image of the mother cannot be sustained" (p. 114).

Mahler (1968) proposes a second determinant essential for the establishment of object constancy. "The establishment of trust and confidence through the regularly occurring relief of tension provided by the need-satisfying agency as early as in the symbiotic phase" (p. 110). This implies that in the feeding situation, for example, the infant learns to wait and develops a "confident expectation" that its hunger will be satiated. In normal development, such drive gratification is counterbalanced by drive frustration. Ordinarily, negative feelings are tempered by the positive feelings associated with feeding and the satiation of hunger. However, an excess of frustration within the mother-infant unit decreases tolerance and predisposes toward inadequate frustration tolerance, anger, aggression, and future developmental problems. Thus, the establishment of object constancy is predicated upon cognitive attainments in the sphere of retentive memory, the development of trust, and the internalization of the experience of balanced regulation of tension.

Normatively, the beginning of the development of object constancy is thought to occur during the rapprochement subphase (18 to 24 months) of separation-individuation (Mahler, 1968). Theoretically, it is considered an ego function to a greater or lesser degree by age five. In the case of a child who has received erratic and/or deficient



mothering, the expectation is that object constancy would not be established by age five. In the absence of its consolidation, certain interrelated mental mechanisms and behavioral patterns could be expected with confidence on .pa theoretical grounds. Several of these constituted the variables investigated with the adolescents of the study.

The second major etiological theory concerns the family.

#### Disordered Family Interactions

In an exploratory study of family patterns and processes, Humphrey (1981) found evidence consistent with the separation-individuation hypothesis suggesting that families of anorectics are struggling with conflicts over control and autonomy. Her other findings substantiate the observations of Minuchin, et al. (1978) that ambiguous communications regarding to or from or about whom the message is directed, may allow the families to seem to agree and thereby avoid conflict. Benjamin (1979) operationalized such communications as double-bind and contributing to the failure in differentiation of individual family members. The anorectic daughters responded to their parents' double-bind with ambivalence. On one hand, they attempted to assert themselves and become autonomous. On the other hand, they were controlled by hostile introjects.

The following four characteristics of family functioning: enmeshment, overprotectiveness, rigidity and lack of conflict resolution were found in several family

studies (Humphrey, 1981; Minuchin et al., 1978). Although none alone seemed sufficient, the cluster of these transactional patterns was felt to be characteristic of a family process that encourages severe psychopathology in the children. More specifically, from a transactional point of view, Minuchin et al. (1978) specified that the anorectic's symptoms acquired new significance as a regulator of the family system. The key factor supporting the symptom was the child's involvement in parental conflict in such a way as to detour, avoid, or suppress it.

#### Family Systems

With this theoretical framework, Minuchin et al. (1978) considered the family systems model as most relevant to the anorectic and her family. They proposed a structured unit of two (dyads): parent-child, spouse-spouse, sibling-sibling, and so forth, within the family which are so interconnected that changes in one part of the system both influence and are influenced by the network of relationships. Furthermore, the anorectic symptoms maintain the pattern of relationships within the family in some tolerable balance, and conversely, the pattern of relationships operates in such a way as to maintain the symptoms.

The idea that the anorectic syndrome developed from a whole pattern of family events over at least three generations was first put forward by Selvini-Palazzoli (1974). She hypothesized that families are characterized by

an integrated and pervasive organization that affected all family members. Specifically, she postulated the development of processes involving the whole family to balance the necessary conflicts experienced by differing family members as they pass individually through the life cycle. Thus, according to Selvini, the symptomatic family member is offering herself as a central role player in balancing and modulating the family conflicts.

Like Minuchin et al., Selvini-Palazzoli (1974) and her associates, the "Milan group," also describe the image of the anorectic family as one with extreme closeness. The individuals are "enmeshed" in their nuclear families, and the nuclear families are in turn meshed in their families of origin. There is little concern for individual privacy in such families, and there is excessive togetherness. The values of group cohesion and protection within the family take precedence over autonomy and individual self-realization. The mutual concern becomes overprotectiveness, and as the parents guard the children, the children in turn develop into "parent watchers." As a result, the child has difficulty in asserting herself because frank disagreement with the family is perceived as an act of betrayal (Rakoff, 1982).

The family members typically reject messages sent by others and although contradiction is common, it is not recognized, for there is little conflict resolution. The

significance of the Minuchin and "Milan group" formulations describing the closeness, the intrusiveness, the patterns of triangular alliance (child with each parent), the self-sacrifice of parents, the incapacity to tolerate growth toward autonomy, are also echoed by Crisp (1965a) and Andersen (1983). However, it must always be remembered that although many of these families share much in common, they frequently are different from each other. Although the issues are similar, that is, the wish for control, the passive-aggressive rebellion against the parents, the submission to fashion, and the consistent food aversion for quest of thinness, each is related to highly individualized family configuration and personal needs (Rakoff, 1982). It is hoped that my study of the anorectic patients and their siblings who are free of eating disorders will further elucidate individual family differences and commonality.

Despite the availability of such compelling, complementary, and widely accepted conceptualizations of the family's contribution to anorexia, relatively little rigorous research has tested these assumptions. Minuchin et al. (1978) found some preliminary support for their views of disturbed interaction patterns among anorectic families. Unfortunately, their report was not specific enough about the methodology or analysis of the data to permit definite conclusions.

### Biological Factors

The third major etiological theory is organic and proposes that there is some primary endocrinological defect or trigger which precipitates the illness. Because of the greater than expected association of anorexia nervosa with XO gonadal dysgenesis (Turner's syndrome), Dickens (1970) postulated a genetic predisposition for anorexia nervosa. He thought that gonadal dysgenesis and anorexia nervosa may be expressions of some common genetic aberration. The causative hypothesis of hypothalamic dysfunction was proposed by Russell (1969) when he observed that amenorrhea and disturbance of hypothalamic thermoregulatory control are independent of emaciation in this disorder.

A genetic basis of anorexia nervosa has long been suspected but the evidence available does not provide conclusive evidence as to the role of heredity in the development of this disorder. However, many researchers indicate a disproportionate amount of psychopathology in families with anorexia nervosa. Jensen (1968) cites the frequency of schizophrenia and suicide in these families.

The traditional methods for investigating genetic factors include family and twin studies. Family studies are often difficult to execute because of the strong tendency in this group to deny any serious psychopathology (Minuchin, et al. 1978). The information available, therefore, is by no means definitive, but important trends can be discerned.

Theander (1970) found in families of patients with anorexia nervosa a frequent occurrence of endogenous depression, peptic ulcer, and alcoholism. He also found six probands with seven sisters who had anorexia nervosa. He calculated that the morbidity rate for a sister of an anorectic patient is about 6.6%, which greatly exceeds normal expectation. Crisp (1965a) noted two sisters and two brothers with anorexia nervosa. Ziolkow (1966) cited two cases of a simultaneous eating disorder in mothers and their daughters. Masterson (1977) reported a mother-daughter pair with anorexia nervosa. Ushakov (1970) in a study of 65 patients, reported three cases with a history of parental anorexia. He stated that this is a family syndrome with an intergenerational transmission. Mester (1982) found that among those who had anorexia, 3% had sisters who developed symptoms of anorexia nervosa shortly after the patient's illness. He called this syndrome "anorexia nervosa a deux" in which the patient's sister mimicked the behavior and symptoms of the patient. Such cases were sometimes difficult to distinguish from a primary disorder but were usually easier to treat when the sisters were separated.

Kalucy et al. (1977), in a study of 56 families with anorexia nervosa, found that 16% of the mothers and 23% of the fathers had an explicit history of significantly low adolescent weight or weight phobia. Mester (1982) reported four cases of the disorder in a grandmother and three cases

in aunts of patients. Like others, he emphasized that the ascertainment of this illness is most uncertain when the assessment is retrospective.

Conflicting information is available on the occurrence of this illness in monozygotic twins. Mester (1982) listed most of the homozygotic twins described in literature, and found a concordance rate for anorexia nervosa of 50%. This would indicate a fairly strong hereditary factor with an important environmental input.

On the other hand (Vandereycken, 1981) concerning monozygotic twins does not support the assumption that genetic factors may play a determining role in the etiology of this syndrome. On the contrary, Vandereycken (1981) states that he is inclined to believe that it is not possible to draw any conclusions at this time about the role of inheritance in anorexia from the existing twin studies.

Thus the nature of the genetic predisposition to anorexia nervosa is unclear, and only speculations are suggested by some authors. Cited are such temperamental factors as being submissive, difficult to raise (Bruch, 1969-1974), being dependent and having a lower birth weight, and being second of twins (Gifford, Murawski, & Pilot, 1970). Others (Dawson, 1977) blame the mother's overprotective attitude toward the weaker dependent twin as a predisposing factor in the illness.

Relationship to Depressive Disorders and Alcoholism

This relationship was first cited by Benedek (1936). Halmiet al. (1973) reported incidence of alcoholism in 13% of fathers and 2% of the mothers. Researchers feel strongly that this prevalence is underreported because of the nature of alcoholism. There are many psychodynamic similarities between the depressive disorder and anorexia nervosa. Symptomatically, feelings of sadness, hopelessness, low self-esteem, exaggerated feelings of guilt leading to self-punishment, and separation anxiety are shared by the two. Many others have been increasingly stressing an association between anorexia nervosa and major depressive disorder. Studies of this association have arisen from three major approaches: (a) reports of patients with anorexia nervosa showing signs of depression (Rutter, 1966; Theander, 1970); (b) follow-up studies of patients with anorexia nervosa identifying the incidence of major depressive disorder after the onset of the anorexia nervosa (Cantwell, Sturzenberger, Burroughs, Salkin, & Green, 1977; Hsu et al., 1979; Morgan & Russell, 1975) and (c) family history studies which identify a high incidence of depressive disorders in relatives of anorexia nervosa patients (Winokur, 1980). Others (Ziolko, 1966) consider the disease an offshoot of the manic depressive syndrome.



The Sibling of the Chronically Ill and Handicapped Child

Clinicians working with chronically ill or handicapped children and their families have long suspected that the siblings of these children are at risk for the development of emotional problems (Poznanski, 1969). However, attempts to systematically explore the emotional well-being of the siblings of chronically ill and handicapped children has occurred only within the last two decades (Cain & Cain, 1964).

An understanding of this issue has been greatly impeded by gaps in developmental theories pertaining to sibling effects as well. Recently, however, there has been a flurry of valuable books and literature reviews reassessing sibling relationships (Dunn & Kendrick, 1982; Lamb & Sutton-Smith, 1982; Bank & Kahn, 1982; Solnit, 1983; Kris & Ritvo, 1983; Neubauer, 1983; Provence & Solnit, 1983; Colonna & Newman, 1983). These works have begun to shed light on many aspects of the sibling relationship which had previously been obscured by an over-reliance on general status indicators, such as birth order and ordinal position (Lamb & Sutton-Smith, 1982). The old preoccupation with ordinal position, in which generalizations were sought regarding "the first child," "the middle child," "the youngest child," did not provide clinicians with a sufficiently specific methodology for clinically evaluating the effect of chronically ill or handicapped children on their healthy siblings or for

comparing the differences between the two. Recent studies that employ more sophisticated research methodology do suggest that siblings of handicapped children may be more psychologically vulnerable, with many studies citing higher levels of anxiety, negative self-esteem, behavioral problems, and somatic complaints among the siblings of handicapped children when compared to control groups (Bank & Kahn, 1975; Brownmiller & Cantwell, 1976; Lavigne & Ryan, 1979; Tew & Laurence, 1972). Although many hypotheses have been generated to explain this phenomenon, the most frequently cited explanation is that the increased demands on the parents detract from the attention they can provide their able-bodied offspring (Berggreen, 1971; Falkman, 1977; Spinetta & Deasy-Spinetta, 1981).

Neither one of these preceding theories can explain the increasing incidence of the disorder. For example, if indeed, anorexia is primarily or only a result of arbitrary mothering, then one must infer that for some reason there has been an increased incidence of warping, unempathetic mothering in the Western world. The same is true of family systems theories. Do we really have an epidemic of enmeshed, overprotective families in this country? Organic theories similarly fail us in explaining a social phenomenon.

In the sociocultural context, anorexia nervosa appears to be a pathological exaggeration of society's message to women (Garner & Garfinkel, 1982a; Stunkard, 1976). A

generation of young girls and women have been indoctrinated by the thin ethic. One only has to view magazine fashion advertisements and television commercials over the past 15 years to observe the relentless thinning of models. Epidemiological studies show a parallel between this development and the disorder of emaciation (Schwartz & Thompson, 1981).

The anthropologist, Clyde Kluckhohn (1954), wrote: "Every culture has its pet mental disturbances" (p. 101). There is a growing concern that eating disorders are becoming the pet mental disturbance of affluent cultures in general and America in particular. Especially at risk are certain vulnerable groups of adolescent girls and young adult women. Bruch (1970) wrote that anorexia nervosa has increased markedly in the last 15 to 20 years and that "... one might speak of an epidemic illness, only there is no contagious agent; the spread must be attributed to psycho-sociological factors . . . . I am inclined to relate it to the enormous emphasis that fashion places on slimness . . ." (p. 94).

Thus the relevant literature generates and validates several of the parameters chosen for the proposed study. Underlying anorexia nervosa are serious developmental defects and inappropriate family functioning. Also suspect are genetic factors which relate to depression and other psychopathological problems.

Some evidence indicates that one is more at risk if one is female, white, middle and upper-class, and comes from high-achieving families. It is further suggested that living in a culture where the roles of women are complex, conflicting and in process of change, and in a milieu which places a high positive value on slimness and a negative value on obesity, increases the risk for anorexia. However, investigators are not yet in a position to say which of these factors is of greater or lesser import. It may be presumed that in some cases of anorexia, the early life traumas and familial factors have proportionately a greater share in producing the disorder, and in other cases sociocultural pressures may have a greater share. To date, it does not appear possible to identify the role or weight the influence of different risk factors. Nevertheless, the potential risk to a member of an anorectic family supports the need for this study. Despite the many available theories and conceptualizations on the family, little research has been done on the focal point of our study, the sisters of the anorectic.

### CHAPTER III

#### METHODOLOGY

The major focus of the present study was the comparison of some mental health factors in female patients with anorexia nervosa and in their female siblings without any eating disorders. The goal of this exploration was to identify those psychosocial factors that are shared by both patients and siblings and those which separate the two groups. To accomplish this goal and to answer the questions and test the hypotheses as outlined in Chapter I, the author selected patients with anorexia nervosa and the families who were treated in the Eating Disorders Unit of Children's Hospital. The patient and her female sibling were rated on the following psychosocial factors, perceived social support and social network, locus of control, self-perceived competence, actual and idealized family cohesion and adaptability, general and affective psychopathology. The mothers rated their perception of the competence of both the patient and her sister. Finally the relationship between the girls' self-reports and the maternal perception of their competence was examined. Demographic data including sex, socioeconomic status, race, and birth order were gathered.

Data gathered from the patients, siblings, and their mothers was correlated, subjected to one-way analysis of covariance with age being used as the covariate.

The following sections restate the aims and hypotheses and describe in more detail the subjects, instruments, procedures, and methods of analysis which were used in this study. The research model employed to test the hypotheses was a cross-sectional comparison group design (Kerlinger, 1973).

#### Restatement of Aims and Hypotheses

Aim 1. How do female patients with anorexia nervosa and their sisters, who are free of eating disorders, compare on measures of social network, locus of control, perceived competence, perceived family cohesion and adaptability, anxiety disorder, and affective psychopathology?

- (1) There is a difference between patients with anorexia nervosa and their sisters who are free of eating disorders on the level of intimacy and social support in their perceived social network.
- (2) There is a difference in the manifestation of more external locus of control in the patients who have anorexia nervosa than in their sisters who are free of eating disorders.
- (3) There is a difference between the patients with anorexia nervosa and their siblings who are free of eating disorders on self-perceived competence in that the patients perceive themselves as less competent.

- (4) There is no difference between patients with anorexia nervosa and their sisters who are free of eating disorders on their perception of family cohesion and adaptability.
- (5) There is no difference in the incidence of anxiety disorder between the patients and their sisters who are free of eating disorders.
- (6) There is no difference in the incidence of affective disorders between the patients and their sisters who are free of eating disorders.

Aim 2. What is the difference between the mothers' perception of the competence of their daughters with and without anorexia nervosa?

- (7) There is a difference between the mothers' assessment of the competence of their daughters with anorexia nervosa and of those who are free of this disorder, with the anorectics perceived as less competent.

Aim 3. What is the relationship between the mothers' perception of competence and the childrens' perception of their own competence?

- (8) There is no difference between the mothers' perception of both daughters' competence and the daughters' self-perception of competence.

Aim 4. What is the relationship among the variables in each group? Do these relationships differ between the groups?

- (9) There is a difference in the number of related correlations between the patient and sibling variables; the sibling variables are not as highly related as those of the patients with anorexia nervosa.

#### Subjects

The subjects of the study focused on the patient, her sister, and her mother who were solicited from the Adolescent Unit of the Eating Disorders Clinic of Childrens Hospital, Washington, DC. The study sample consisted of one target and one comparison group. The target group was composed of female patients (age 12 to 21) diagnosed as having anorexia nervosa (the definitional criteria for those diagnoses set forth in the DSM-III as described in Chapter II) and who were treated in or on an out-patient basis of the Eating Disorders Clinic of the hospital. The comparison group consisted of sisters of the patients who were free of any eating disorders and whose age was within a three-year range from the patient's age (older or younger) and who grew up in the same family and environment. The average age of the patient sample was 16 years and 2 months with a standard deviation of 2 years and 8 months. The average age for the sibling sample



was 16 years with a standard deviation of 3 years and 5 months.

#### Criteria for Inclusion in the Study

Inclusion in the study required the probands to meet the DSM-III criteria for anorexia nervosa. The comparison group had to consist of biological siblings of former and current anorectic patients who were free of eating disorders and who were within three years of age of the proband. Also required was that the two sisters be reared in the same home with the same parents for most of their growing years.

#### Exclusion Criteria

Exclusion criteria included the following: (a) siblings who were not full biological sisters (having both the same mother and the same father), (b) siblings who were not reared in the same home, (c) siblings where there was no mother present in the home, (d) adopted siblings who were not biological sisters, (e) mothers who had not reared the siblings, and (e) siblings who had symptoms of the anorexia but had not been diagnosed as such.

Data was collected from August 1984 through March 1985. The investigator attended weekly intake meetings of the Eating Disorders Clinic, Children's Hospital, where patients were screened and case histories reviewed.

### Sampling Procedures

Twenty patients who were admitted consecutively to the Eating Disorders Unit of Children's Hospital over the period of seven months from September 1984 through March 1985, and who had a sister with a three-year age range were selected for the study. The majority, 16 out of the 20, agreed to participate in the study. Of the four who did not participate, two refused to be included, one moved out of the area, and the fourth dropped out when the father of the patient was hospitalized with a sudden illness.

Each of the patients in the current study was seen by a hospital social worker for intake procedures. During this time, these patients underwent normal admitting and diagnosis for their disorder. A letter signed by the Director of the Adolescent Unit, Dr. Thomas Silber, was also sent to all patients and their families soliciting their cooperation in this study. This was sent to each family after they were admitted to the Eating Disorders Unit of the hospital (see Appendix A).

Within one to seven days after admission to the hospital, mothers were contacted by the investigator via phone to solicit their approval of participation for their daughters and themselves in this study. Once the mothers agreed to join the research, the patients were visited in their rooms in order to inform them of their mothers' approval and likewise to request their cooperation and

participation. An appointment for testing was arranged between the patient and the researcher on that day or scheduled within the next two to three days. The self-report tests, the Harter's Competence Scale, the Locus of Control, the Social Network Scale, and FACES were handed to the girls in that order in packet form with specific directions for test taking. The girls were allowed one hour to complete the tests, after which time the investigator returned to administer questions from the DISC which took approximately an additional one-half hour. Total testing time involved was one and one-half to two hours for the five tests.

### Setting

The patients or target group, and the siblings were administered each of the tests in the hospital, the outpatient department, or their homes depending on their health status. In the event that some member of the family under study could not come to the hospital for testing and lived within a radius of 50 miles of the hospital, a home visit was arranged. Interviews for family members were arranged via phone. Flexibility in scheduling and conducting interviews was necessary at all times because of the many personalities and needs involved. Five interviews were conducted in the homes of the subjects, and two subjects preferred to meet in the home office of the researcher.

All clinical interviews and tests were administered by the researcher, and they were scored by the investigator and

another trained mental health worker, Dr. Jeannette Johnson, to establish inter-rater reliability. Correlation coefficient between the two raters' scores reached  $r = .90$ , well above reliability requirements.

### Instruments

#### The Harter Scale

Harter (1982) devised a Perceived Competence Scale for Children in which she views the child's perceived competence as an important correlate and mediator of the child's intrinsic motivation to be effective, to engage in independent mastery attempts in the anticipation of a competent outcome. Harter postulates that the more a child is intrinsically motivated, the greater will be his or her sense of competence. In contrast, children with an extrinsic motivational orientation, who are highly dependent on external approval and feedback, will perceive themselves as less competent. The scale has three separate subscales to tap perceived competence in the cognitive, social, and physical realms.

In addition to these competence subscales, there is a fourth subscale which assesses the child's general feeling of worth or self-esteem, independent of any particular skill domain.

Harter began her work with three separate competence subscales: (a) cognitive competence, with an emphasis on academic performance (doing well at schoolwork, being smart,

feeling good about one's classroom performance); (b) social competence, vis-a-vis one's peers (having a lot of friends, being easy to like, and being an important member of one's class); and (c) physical competence, with a focus on sports and outdoor games (doing well at sports, learning new outdoor games readily, and preferring to play sports rather than merely watch others play).

Harter also hypothesized that children not only make discrete judgments about their competence in different domains, but that by this age they have also constructed a view of their general self-worth as a person, over and above these specific competence judgements. This assumption highlights the hierarchical nature of the self-evaluative process whereby self-esteem or self-worth is viewed as a superordinate construct and competence judgments represent one type of lower-order evaluative dimension.

Earlier versions of the scale were individually administered to approximately 300 third- through sixth-grade school children in Colorado. The factorial validity of the scale was then demonstrated with a sample of 133 9-to-12-year-old children from California, to whom the scale was group administered. Replications were then conducted on the following samples: (a) a combined Connecticut-California sample of 341 third through sixth graders, (b) a New York sample of 714 third through sixth graders, (c) three separate Colorado samples in this same age range totaling 470

subjects, and (d) a California sample of 746 subjects from third through ninth grade. These samples have been drawn from primarily middle- and upper-middle-class populations. For every sample, there was approximately the same number of boys and girls at each grade level.

The child is presented with the following type of question:

Really true for me	Sort of true for me	Some kids often forget what they learn	but	Other kids can remember things easily	Sort of true for me	Really true for me
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The child is first asked to decide which kind of kid he or she is most like--the kids described on the right or the left. Once having made this decision, the child decides whether the description on that side is sort of true or really true for him or her. Each item is scored from 1 to 4, where a score of 1 indicates low perceived competence and a score of 4 reflects high perceived competence. Scores are summed and then averaged for each subscale, resulting in four separate subscale means.

The effectiveness of this question format lies in the implication that half of the children in the world (or in one's reference group) view themselves in one way, whereas the other half view themselves in the opposite manner. That is, this type of question legitimizes either choice. The option of checking either "sort of true for me" or "really

true for me" also broadens the range of choices over the typical two-choice format. In addition, none of the choices involves the response "false." Rather, the child must decide which option is most true for him or her. There is some evidence of the effectiveness of this format. The correlation between perceived competence ratings and scores on the Children's Social Desirability Scale (Harter, 1978) is .09.

From the outset, four domains--cognitive, social, physical, and general--were designated. Face validity and meaningfulness to children, as determined from individual interviews, served as initial guidelines. Some items were adapted from existing scales. After initial item revisions, based on feedback from individual children, a 40-item version, 10 items per subscale, was group administered to a sample of 215 third through sixth graders. Factor analysis indicated that a four-factor solution was the most appropriate, in terms of both statistical criteria (Cattell's screen test) and interpretability. However, only six to seven items on each subscale met all of the criteria; (a) moderate to high loadings on the designated factor, (b) no crossloadings of the same magnitude, (c) mean value near the midpoint, (d) sufficient variability (SD at or near 1), and (e) contribution to the internal consistency of the subscale.

Next Harter decided to define cognitive as school competence, social as peer related, and physical as skill at

sports and outdoor games. Several new items were written, and an eight-item per subscale revision was then administered to a new sample of 133 children. Analyses revealed that seven items on each subscale met the criteria outlined above, resulting in the final 28-item scale.

Harter also designed a 28-item teacher-rating form, the child scale. Items were reworded to obtain the teacher's best judgment of the child's actual competence. Thus a teacher item would read, "This kid often forgets what he or she learns, but this kid remembers things easily." The same four-choice question format and scoring procedure was employed.

Harter conducted large field trials on school children in New York (810 pupils) and Colorado (208 pupils). Another sample consisted of 293 young adolescents.

Reliability. Subscale reliability was assessed by employing coefficient which provides an index of internal consistency. For the various samples these values were .76, .78, .83, and .73, for the cognitive, social, physical, and general subscales.

Test-retest reliability data have been collected from a sample of 208 Colorado pupils retested after 3 months, and the New York sample of 810 pupils retested after 9 months. These correlations, corrected for attenuation, were .78, .80, .87, and .70 for the Colorado sample, and



and .78, .75, .80, and .69 for the New York sample, for the four subscales.

Teacher Ratings. Teacher ratings were obtained from 28 teachers for the California sample and 16 teachers for the Colorado sample which represented four teachers per grade. A factor pattern virtually identical to the pupils', resulted with the following average loadings on the designated factor: .84, .74, .83, and .66. One general item (this child is fine the way he [she] is) cross-loaded substantially on cognitive, and one social item (most kids like him [her]) also had a moderate loading on the general subscale. Internal consistency reliabilities for the teachers' ratings were .96, .93, .94, and .93 for the cognitive, social, physical, and general subscales.

Factorial Validity. Both orthogonal and oblique solutions were obtained, each revealing the same stable factor structure. Although it was assumed that individuals would show differences across the four subscales, it was also anticipated that there would be some correlation among subscale scores. Thus an oblique solution, which allows the factors to intercorrelate, was considered to be the most appropriate. Cattell's screen test, which employed criteria based on the magnitude of the eigen-values, indicated that four factors should be extracted.

Convergent Validity - Cognitive Domain. Teachers have consistently said that they felt most confident about their

judgments of cognitive competence. For the California sample, extending into ninth grade, these correlations document a definite age trend. For third, fourth, fifth, and sixth grades, they were .28, .32, .50, and .55, in that order, showing a steady increase in magnitude. In the seventh grade the correlation drops to .31 and then rises to .66 in the eighth grade and to .73 in the ninth grade.

Construct Validity. One purpose for devising this instrument was to test certain hypotheses in a model of competence motivation. One such hypothesis is that perceived competence should be positively related to one's intrinsic motivational orientation to prefer challenge, to be curious, and to engage in independent mastery attempts (Harter, 1978). Clear support for this prediction came from the correlations between perceived cognitive competence and the three motivational subscales on the measure of intrinsic versus extrinsic orientation in the classroom (Harter, 1982). Correlations indicated that perceived cognitive competence is strongly related to preference for challenge ( $r = .57$ ) and to independent mastery ( $r = .54$ ), and it is moderately related to curiosity ( $r = .33$ ). Higher-order factoring reveals that perceived cognitive competence, challenge, independent mastery, and curiosity form a distinct factor with very high loadings of .76, .87, .80, and .79, respectively.

Discriminant Validity - Cognitive Domain. In one study Harter predicted that while learning disabled children would

rate their competence lower than do normal children of the same age and grade, this difference will be most pronounced in the cognitive area. Results indicated a significant difference  $t(38) = 2.9, p < .005$ , for the perceived cognitive competence ratings ( $\bar{X} = 1.9$  for the 20 learning-disabled children compared with 2.8 for the 20 normal children). While social, physical, and general self-worth ratings were also lower for the learning disabled, these differences did not reach acceptable levels of significance.

Social and Physical Domain. For one sixth-grade sample in which athletic achievement was a prominent school value, the hypothesis was tested that those pupils selected for the sports teams ( $N = 23$ ) would score higher on perceived physical and social competence than would their classmates ( $N = 57$ ). Physical and social scores for the sports group were 3.4 and 3.2, compared with the means of their classmates, 2.5 and 2.7, respectively,  $t(78) = 3.4$  and  $2.5, p < .001$  and  $p < .01$ , respectively (Harter, 1982).

The findings indicate that the goal of constructing a self-report measure which provides a profile of the child's perceived competence and general self-worth has been adequately achieved.

Johnson (1978) adapted the Teacher's Rating scale for use as a Parent's Rating Scale of the Child's Actual Competence. The latter was used in our study and provided

information on the parent's perception of the competence of their daughters who are free of eating disorders.

In summary, the cognitive competence subscale includes school as well as nonschool performance. The social subscale taps interpersonal competence with regard to one's peers. The general self-esteem subscale taps contains items referring to being sure of one's self, being happy with the way one is, feeling good about the way one acts, and so forth. Each of the four subscales contains seven items, constituting a total of 28 items. The items are scored using a detailed scoring key. For each item, a score of 4 designates the highest perceived competence and a score of 1 designates the lowest perceived competence.

#### Diagnostic Interview Schedule for Children

Several years ago the Center for Epidemiological Studies (CES) of the National Institute of Mental Health, began to develop a national program of epidemiological research on mental health and behavior problems of children and adolescents. The most essential component of such a program was to be a diagnostic instrument leading to an appropriate classification of mental disorders. There were already several interviews which were relatively structured to improve the reliability of clinical diagnosis. The Diagnostic and Statistical Manual III (DSM-III) was available to provide reasonably clear definitions and diagnostic criteria for specific emotional disorders. Thus an attempt

was launched to develop a structured diagnostic interview for children and adolescents, based on DSM-III. Drs. Keith Conners, Barbara Herjanic, and Joachim Puig-Antich wrote a first draft of the Diagnostic Interview Schedule for Children (DIS-C). This was circulated for comment to a variety of child clinicians and psychometricians. Based on the comments, the authors, working closely with NIMH staff made revisions. The revised draft (DIS-C I, Working Draft) was circulated more widely for comment, and was discussed in depth at a meeting of expert consultants. Considerable attention has been paid to wording of questions and sensitive ethical issues as well as to coverage of DSM-III criteria and the adequacy of DSM-III. The consensus of the experts was that the draft represented considerable progress toward the goals of (a) covering DSM-III criteria and (b) being fully structured for use by trained lay interviewers. It was also the consensus that it needed some further work to make it a clinically feasible interview.

Revisions have been completed, based on many recommendations, pretests, and further consultation. The resultant interview (DIS-C II Working Draft) was developed under contract to NIMH by Anthony Costello, MD, Creig Edelbrock, PhD, Robert Kalas, MSW, Mino Kesler, MD, and Sheree A. Klaric. The DIS-C II is a structured interview designed to enable trained clinicians and trained lay interviewers to make consistent and accurate psychiatric diagnoses in

patients according to DSM-III criteria. Each question of the interview had been carefully worded to correspond to relevant DSM-III criteria. This draft is being tested in clinical settings. The information from the DISC and DISC-P used by trained lay interviewers is compared with information from the same interviews used by experienced child clinicians, from additional "free-style" interviewing by the clinicians, from other measures used in clinical intake (e.g., behavior problem checklists, school records, psychological testing), and from the clinical case conference combining all information. The reliability of the DISC and its ability to assess DSM-III diagnoses is being tested and further evaluated. The best source of information (e.g. parent or child) by age and type of information (e.g. behavior or emotional problems) will be evaluated. Interviewers' comments as well as statistical data are used to recommend revisions in the interviews and the best methodology to use in epidemiologic research.

Further methodologic studies may be necessary before full scale epidemiologic research can begin. These may include, for example, other more intensive clinical tests of specific sections (disorders) of the DISC; comparison of the DISC with the adult DIS in older adolescents; studies to evaluate the clinical utility and construct validity of DSM-III; studies comparing the diagnostic interviews with other approaches; studies of ethical issues, such as whether

structured interviewing of a child does any harm to the child; small scale validity studies in general population samples, with clinical follow-up; studies to select and test other measures to be used in surveys, including both other measures of dependent (mental health) variables and other variables such as hypothesized risk factors; at least one field test of the full set of measures proposed for epidemiologic surveys. Some of these studies will be initiated by NIMH and done by contract; some will be investigator initiated grants or independent studies; and some may be cooperative agreements. Throughout the process, peer review and consultation with appropriate experts will be extensively utilized.

The author's experience with the process of the development of the DISC into a valid and reliable diagnostic instrument provided a rare insight into the painstaking process of developing such an instrument, the endless revisions, corrections, field trials, and reliability and validity studies. It should also be stressed that we are one of many clinicians who use the DISC-C II at the present time. It was very reassuring to have the support of Ms. Lenore Radloff, the project director at NIMH, and Dr. Anthony Costello, project director in charge of the field trials, who periodically provided the author with revision and updated information. With these caveats, we will now proceed to the more detailed description of the instrument. Because of the

relatively small study sample, the author decided to investigate only several major forms of psychopathology, rather than the whole wide spectrum of the DSM-III. These categories are as follows: major depression, dysthymic disorder, overanxious disorder, separation anxiety, and cyclothymic disorder.

The child interview was designed to be completed in a single session lasting less than one hour. The parent interview lasted for one-half hour. The clinician saved any additional questions that she felt were necessary to achieve a valid diagnosis until the end of the DIS-C interview.

The DIS-C called for answers based on the last year ("since school started last year," "since last summer"). On occasion other time-prompts were needed (6 months - "since Christmas," "since your birthday"). Having a good "time-bearing" helped the respondent in answering the time-related questions.

The DIS-C employs a NO/SOMETIMES/YES answer pattern that corresponds to a 0 1 2 coding pattern (NO = 0, SOMETIMES = 1, YES = 2). All answers were coded clearly and legibly. The IF YES skip structure was employed if the respondent answered either "YES" or "SOMETIMES." The IF NO structure was employed only for a "NO."

If a respondent refused to answer a question, Refusal was written in the lefthand margin next to the question



number. Similarly, OK was written for a valid "don't know" response.

If a respondent did not understand a particular question, the following steps were taken: (a) the question was stated again, emphasizing by the inflection of voice the important words of the question, (b) key words were given in parentheses and subjects were instructed to use their own wording.

If a child demonstrated that she could not respond to the questions due to severe mental or psychiatric impairment, the interview was terminated. However, even though some patients were difficult to interview, it was necessary to persist in spite of their reluctance.

#### Locus of Control

Encouraged by the extensive body of research in adults, several investigators attempted to construct an instrument measuring the locus of control in children since there is ample reason to believe that this variable is of significant influence on children's behavior. For instance, Nowicki (1974) reported in a study of almost half a million youngsters across the United States, that a belief in destiny was a major determinant in school achievement. They concluded that this pupil attitude factor had a stronger relationship to achievement than all other school factors together.

However, Nowicki and Strickland (1973) reported several early attempts that fell short because of problems with reliability, format and difficulty of administration. Nowicki and Strickland (1973) started with large numbers of items ( $N = 101$ ), constructed on the basis of Rotter's definition of the internal-external control of reinforcement dimension. The items describe reinforcement situations across interpersonal and motivational areas such as affiliation, achievement, and dependency. School teachers were consulted in the construction of items. The goal was to make the items readable at the fifth-grade level, yet appropriate for older students. These items along with Rotter's description of the locus of control dimension were then given to a group of clinical psychology staff members ( $N = 9$ ), who were asked to answer the items in an external direction. Items on which there was not complete agreement among the judges were dropped. This left 59 items, which made up the preliminary form of the test. The 59-item form of the test was then given to a sample of children ( $N = 152$ ) ranging from the third through ninth grades. Means for this testing ranged from 19.1 ( $SD = 3.86$ ) at the third grade to 11.65 ( $SD = 4.26$ ) at ninth grade, with higher scores associated with an external orientation. Controlling for IQ, internals performed significantly better than externals on achievement test scores ( $t = 3.78$ ,  $df = 48$ ). Test-retest reliabilities

for a 6-week period are .67 for the 8-11-year-old group ( $N = 98$ ) and .75 for those in the 12-15-year-old group ( $N = 54$ ).

Item analysis was computed to make a somewhat more homogeneous scale and to examine the discriminative performance of the items. The results of this analysis, as well as comments from teachers and pupils in the sample led to the present form of the scale consisting of 40 items.

The 40-item scale was then administered to a large number of children ranging from the third through the twelfth grade to obtain reliability estimates, demographic measures, and construct validity information. The sample consisted of mostly Caucasian elementary and high school students in four different communities. All schools were in a county bordering a large metropolitan school system (Nowicki & Strickland, 1973).

On the basis of the item-total correlations and item variance estimates for each item of the Nowicki-Strickland scale, those items working the best were identified. The analyses computed for each grade were then combined into primary and secondary groups. The primary group consisted of students from the seventh through the twelfth grades. The results of these analyses were used to construct shorter yet reliable versions of the 40-item scale. The two revised scales consist of 20 and 21 items, respectively, using the items that discriminate the best for the two age groups.

In addition, the Nowicki-Strickland scale has been revised and adopted for use with college and adult subjects by changing the word "kids" to "people" and deleting items about parents. This was done to allow for direct comparison between the responses of adults and children. The low level of reading skill required and the lack of politically tinged items make it appropriate for use in a wide number of populations.

Last, to investigate the construct validation of the Nowicki-Strickland scale, its relation to other measures of locus of control were examined. It was expected that there would be significant but not high correlations between the measures. The relation to the Intellectual Achievement Responsibility scale was examined first. In a sample of black third ( $N = 182$ ) and seventh graders ( $N = 171$ ), there were significant correlations with the I+ but not with the I- scores (for the third grade,  $r = .31$ ,  $p < .01$ ; for the seventh grade,  $r = .51$ ,  $p < .01$ ). Next, the correlation with the Bialer-Cromwell score (See Bialer, 1961) was also significant ( $r = .41$ ,  $p < .05$ ) in a sample of white children ( $N = 29$ ) aged 9-11. Finally, the relation between the Rotter and the Nowicki-Strickland adult scales was also significant in two studies with college students ( $N = 76$ ,  $r = .61$ ,  $p < .01$ ;  $N = 46$ ,  $r = .38$ ,  $p < .01$ ). These relations suggest added support for the construct validation of the Nowicki-Strickland scale.

Since the construction of the scale, a number of studies across a diverse range of subject populations have been completed. Generally, the results are clearly supportive of the utility and validity of the instrument, which appears to be related to a variety of behaviors (Nowicki & Duke, 1974 and Nowicki & Strickland, 1973).

Thus the Nowicki-Strickland is a 40-item scale which measures locus of control and has been shown to demonstrate internal reliability and construct validity (Nowicki & Strickland, 1973).

The Nowicki-Strickland Children's Test of Locus of Control assesses the degree to which the child feels mastery over life events and circumstances (internality) versus the degree to which the child perceives that factors outside his or her own sphere of influence determine life events and circumstances (externality). Simply stated, the internal-external dimension "refers to the degree to which an individual perceives the events that happen to him as dependent on his own behavior or as a result of luck, chance, fate, or powers beyond one's personal control and understanding" (Strickland, 1979). Thus, the internal-external dimension is an expectancy variable within a social learning model. In the model, the likelihood that a behavior will occur is a function of the expectancy that the behavior will lead to a particular reinforcement and the value of that reinforcement. Furthermore, since expectancies reflect past

and current experiences, a person's standing on the internal-external dimension changes under varying circumstances.

This revised 40-item paper and pencil test consists of yes/no items such as: "Are some kinds just born lucky?" "Do you feel that most of the time it doesn't pay to try hard because things never turn our right anyway?" and "Most of the time, do you feel that you can change what might happen tomorrow by what you do today?" A high score on the test indicates externality; a low score indicates internality. The test is a widely used instrument for children, and it represents a conceptual framework originating out of work with adults and defined by Rotter (1966). Further review of research involving the internal-external dimensions (locus of control) may be found in Lefcourt (1981) and Strickland (1979).

#### Social Network Scale

A structured clinical interview devised by Pellegrini (1984) was administered to elucidate the social networks of children, as well as their perceptions regarding the availability of social support. Children were first asked about the composition of their social network, defined as those individuals with whom they were living, as well as those they enjoyed seeing and to whom they felt close. Systematic inquiries were made regarding extended kin figures (e.g., aunts, uncles, grandparents), non-kin adults (e.g., teachers, neighbors), and friends.

Group memberships (e.g., scouts, athletic teams) were also ascertained. A variety of structural variables were derived, including total network size and the proportion of kin to non-kin in the network.

Subsequently, four commonplace problem situations were presented; mother and father's illness, getting into trouble with a neighbor, and difficulty getting along with a friend. Children were asked whom they could confide in if they were facing such a situation, and whom they could count on for advice and practical help. The "most favored" support figure in each context was assigned three points, the next "most favored" was assigned two points, while all other network members who functioned as support-givers were assigned one point. These points were summed to yield a series of weighted support scores for primary network members (e.g., mother, father, best friend). A variety of other functional support variables were also derived, including the total number of supporters, and the proportion of network members who provided any support.

These included:

1. Number of individuals with whom they live
2. Number they enjoy seeing.
3. Feel close to, that is, best friend, and others.
4. Seek advice from
5. Problem solve with

6. Relationship with extended kin figures, for example, aunts, uncles, cousins, grandparents, and so forth.
7. Relationship with non-kin figures, for example, adult friends, teachers, neighbors, counselors, and so forth.
8. Relationship with peers of same sex
9. Relationship with peers of opposite sex.
10. Group membership, for example, scouts, athletic teams.

A network member was designated as a supporter if the child indicated that that member could be counted on as a helpful provider of emotional or instrumental support in any one of the four problem contexts. A network member was further designated as a reciprocal supporter if that member was perceived as someone who both provided and received support.

On the basis of interview responses, five scores reflecting the structural diversity of a child's social network were derived: (a) the number of peers, (b) the number of kin residing in the home, (c) the number of non-residing kin, (d) the number of nonkin adults, and (e) the number of social peer groups (i.e., clubs or organizations) to which the child belonged. A corresponding set of five additional scores reflected the perceived availability of social support: the number of (a) peer supporters, (b) residing kin supporters, (c) nonresiding kin supporters, (d) nonkin adult supporters, and (e) reciprocal supporters.



Family Adaptability and Cohesion Evaluation Scale  
(FACES)

This self-report was developed by Olson, Bell, and Portner (1982), as an attempt to study family adaptability and cohesion. However, the diagnostic assessment of a family can be done by the tester and scored by hand or by a computer.

The need for this clinical and research scale was sparked by the development of the Circumplex Model which uses these two dimensions. The Circumplex Model was developed by David Olson, Douglas Sprenkle, and Candyce Russell (1978) as a guide for diagnosing marital and family systems and for setting treatment goals for a couple or family. A diagnostic assessment enables a clinician to classify a couple or family into one of 16 possible types within the Circumplex Model. Each of the two dimensions is broken down into four levels, and this results in four levels of family cohesion and four levels of family adaptability.

Family cohesion is defined as: "the emotional bonding which members have toward one another and the individual autonomy that a person has in the family system" (Olson, Bell, & Portner, 1982). At the extreme of high family cohesion, there is an overidentification with the family which results in extreme bonding and limited individual autonomy. The low extreme is characterized by low bonding and high autonomy from the family. It is hypothesized that a

balanced degree of family cohesion is the most conducive to effective family functioning and to facilitating individual development. The model posits nine concepts related to cohesion: emotional bonding, independence, family boundaries, coalitions, time, space, friends, decision-making, interests, and recreation.

Family adaptability is defined as: "the ability of a marital/family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress" (Olson, Bell, & Portner, 1982). The assumption is that an adaptive system requires a balance between change and stability. The Circumplex Model posits seven concepts related to adaptability: assertiveness, control, discipline, negotiation, roles, rules, and system feedback.

Development of FACES. Using the descriptions of these above listed 16 variables, short statements were formulated that described high balanced, and low levels of family cohesion and adaptability. In developing items, the goal was to cover the range of the concepts with single stimulus statements which were easy to understand. Initially, 204 statements were developed--103 that tapped levels of family cohesion and 100 that tapped levels of family adaptability. This large number of items was developed in order that, through testing, the best items would compose the final instrument. The items were piloted using two populations.

In order to assess the clinical validity of the items, 35 marriage and family counselors were given the above definitions and were asked to rate each item on the following scale:

1	2	3	4	5	6	7	8	9
Low Cohesion or Low Adaptability					High Cohesion or High Adaptability			

A second population was used to assess the empirical validity of the items, and this group consisted of 410 young adults. They were students in family relationship courses, about half at the University of Minnesota and the other half at Iowa State University, Ames. These young adults answered each item on the basis of its applicability to their family of origin using a four-point scale:

- 4 = true all the time
- 3 = true most of the time
- 2 = true some of the time
- 1 = true some of the time

Data Analysis. Analysis of the two data sets began with the computation of the items, means, modes, standard deviations, and percent scores. The student data percent figures showed the distribution of the response choices for each item. These data were used to select items that had a good distribution of responses. With the counselor data, the percent figures showed what portion of the counselors ranked each item low (1-3 ranking), moderate (4-6 ranking), and high

(7-9 ranking). These data were used to select items that had good agreement among counselors.

The next step was to factor analyze the data from 410 students. The varimax orthogonal rotation option was chosen to keep the factors as unique as possible.

Analysis of the items within each factor revealed that the factors corresponded very closely with the response strength of the items: chaotic, moderate, rigid, for the adaptability dimension, and disengaged, moderate, enmeshed for family cohesion. The first adaptability factor consisted of both chaotic and rigid items while the second factor was almost exclusively moderate items. The remaining factors with eigen values over 1 showed no such clear cut patterns.

The cohesion items factored in a similar way. Factor 1 consisted primarily of disengaged items. Factor 2 was almost exclusively enmeshed items. Most of the moderate items clustered in Factors 3 and 4. The remaining cohesion factors were much harder to define and accounted for only a small percent of the variance (Olson, Bell, & Portner, 1982).

Item Selection of FACES. Items selected for the final FACES instrument were chosen on the basis of the following criteria:

1. A mean and mode score that fell within the appropriate range using the counselor rankings.

- a. High cohesion (enmeshment) and high adaptability (chaos) items should fall within the high (7-9) range.
  - b. Moderate items on both dimensions should have means that fall within the moderate (4-6) range.
  - c. Low cohesion (disengaged) and low adaptability (rigid) items should fall within the low (1-3) range.
2. The lowest possible standard deviation, indicating high consensus among counselors on the item ranking.
  3. The highest factor score on the data from the student data.
    - a. Adaptability factors 1 and 2, accounting for 78.6% of the variance, were the two major factors. Items for the two extremes of adaptability (chaotic and rigid) were selected from factor 1, and moderate items were selected from factor 2.
    - b. Cohesion factors 1-4, accounting for 63.50 of the variance, were the major factors in this dimension. Disengaged items were chosen from factor 1, enmeshed items were chosen from factor 2, and moderate items were chosen from factors 3 and 4.

Following these criteria, 96 items were selected with six items for each subscale of FACES. Each subscale has two

items for the high, moderate, and low levels of that concept. There are nine subscales for family cohesion, making a total of 54 cohesion items. Since there were seven subscales for family adaptability, there were 42 adaptability items.

In addition to the 54 cohesion items and the 42 adaptability items, a modified version of the Edmonds Social Desirability Scale with 15 items was included. This made the total number of items in FACES become 111. The final 111 items for FACES were then systematically arranged on the questionnaire to minimize response sets and maximize the ease of hand scoring.

In conclusion, FACES consists of 111 items that appear to have a high degree of clinical and empirical validity. The clinical validity was demonstrated by the fact that counselors had a high level of agreement in that the item fell at either a high, moderate, or low level for each subscale. The empirical or construct validity was demonstrated by the fact that the items had high factor loadings on different factors which were related to the three levels of the dimensions--high, moderate, and low.

Interpretation of FACES Scores refers to the family member's perceptions of the balance in their family between emotional closeness and individual autonomy. The possible range of scores for the total family cohesion scales is 16 to 80.

A high score indicates that the family member perceives extreme closeness and limited autonomy in the family. A low score indicates a perception of low emotional bonding and high individual autonomy. A middle range score indicates a balance between bonding and autonomy.

Family Adaptability refers to the ability of a family to change its power structure, role relationship, and relationship rules in response to situations and developmental stress. This Family Dimension is made up of seven subscales: assertiveness, control discipline, negotiation, roles, rules, and system feedback.

The range of possible scores on each subscale is 15-70. For each subscale, a high score is indicative of a perception of high level of family chaos or disorganization. For each subscale, a low score indicates a perception of family rigidity. A moderate score is an indication of a balance between stability and change on that particular aspect.

In addition, the FACES II idealized measures of family cohesion and adaptability were administered. Each child answered the same questions with reference to how they would like their family to be (idealized notions) as well as their current perceptions as stated above. Thus four measures were obtained: (a) current perception of family cohesion, (b) current perception of family adaptability, (c) idealized notion of family cohesion, and (d) idealized notion of family adaptability.

### Consent and Confidentiality

In conformity with standard policy regarding research involving human subjects, both parents and children were informed of the purpose of all procedures. Written consent forms were obtained from the mothers and the subjects at the outset of participation in the testing procedures (Appendix H and I). All data on individual subjects were confidential and were locked in files at the Eating Disorders Clinic of the Hospital.

In those cases where the testing procedures revealed a previously undetected psychiatric disturbance in any child, the parents of the child were asked to participate in an interpretive interview conducted by a staff member of the Childrens Disorders Clinic (CHNMC). Referrals to an appropriate mental health facility in the community were available to these subjects. All participants were entitled to feedback on the findings.

### Statistical Analysis

Aim 1. Comparisons Between Patients and Siblings, Hypotheses 1 through 6.

To test these hypotheses, a one-way analysis of covariance was used to compare the anorectic girls with their female siblings on each of the dependent variables (self-perceived competence, perception of social support, locus of control, anxiety disorders, and affective disorders). The covariate was the age of each of the subjects. This was done



in order to eliminate any effects on the groups due to developmental differences attributable to age.

Prior to the analysis of covariance for each of the dependent variables, means and standard deviations were examined to insure that the variance of the measure stayed within the normal distribution. In each case this proved to be true.

#### Aim 2. Parental Perceptions of Competence

As above, a one-way analysis of covariance (with age as the covariate was performed on the parents' perception of their daughters' competence. The compared groups were the anorectics versus their female siblings. The same restrictions apply as in Aim 1.

#### Aim 3. Relationship Between Self-Reports and Parental Perceptions of Competence

The parents' rating of the child's competence on each of the four Harter competence factors was compared to the self-ratings of each of the subjects (separated by group) with a Pearson-product moment correlation.

#### Aim 4. Relationship Among the Dependent Variables

In order to test the relationship between each of the dependent measures, correlations were done to examine the relationship between the dependent variables in both the target and comparison groups in order to explore the differences in the two groups.

Relationships between the variables were correlated in order to examine the degree and the direction of these relationships. For each group a Pearson product moment correlation was computed between each of the variables.

## CHAPTER IV

### RESULTS

This chapter will present the results of data collected for each hypothesis. Sample characteristics will be presented first. These include age, socioeconomic status, birth order, and family size.

Tests of the hypotheses will be discussed next. These include four aims and nine hypotheses:

Aim 1. How do female patients with anorexia nervosa and their sisters, who are free of eating disorders, compare on measures of social network, locus of control, perceived competence, perceived family cohesion and adaptability, anxiety disorder, and affective psychopathology?

Hypothesis 1. There is a significant difference between patients with anorexia nervosa and their sisters who are free of eating disorders on the level of intimacy and social support in their perceived social network.

Hypothesis 2. There is a difference in the manifestation of more external locus of control in the patients who have anorexia nervosa than in their sisters who are free of eating disorders.

Hypothesis 3. There is a difference between the patients with anorexia nervosa and their siblings who are free of eating disorders on self-perceived competence in that the patients perceive themselves as less competent.

Hypothesis 4. There is no difference between patients with anorexia nervosa and their sisters who are free of eating disorders on their perception of family cohesion and adaptability.

Hypothesis 5. There is no difference in the incidence of anxiety disorder between the patients and their sisters who are free of eating disorders.

Hypothesis 6. There is no difference in the incidence of affective disorders between the patients and their sisters who are free of eating disorders.

Aim 2. What is the difference between the mothers' perception of the competence of their daughters with and without anorexia nervosa?

Hypothesis 7. There is a difference between the mothers' assessment of the competence of their daughters with anorexia nervosa and of those who are free of this disorder with the anorectics perceived as less competent.

Aim 3. What is the relationship between the mothers' perception of competence and the children's perception of their own competence?

Hypothesis 8. There is no difference between the mothers' perception of both daughters' competence and the daughters' self-perception of competence.

Aim 4. What is the relationship among the variables in each group? Do these relationships differ between the groups?

Hypothesis 9. There is a difference in the number of related correlations between the patient and sibling variables; the sibling variables are not as highly related as those of the patients with anorexia nervosa.

### Sample Characteristics

#### Age

The average age of the patient sample was 16 years and 2 months, with a standard deviation of 2 years and 8 months. The average age for the sibling sample was 16 years, with a standard deviation of 3 years and 5 months. The frequencies of these different ages can be divided into four groups for descriptive purposes only. (See Table 1.)

Table 1

#### Frequency of Ages of Subjects

Age	Patients	Sibling
Under 11	0	2
12 - 14	5	2
15-18	9	9
Over 19	2	3
TOTALS	16	16

There were no patients under the age of 11; five were between 12 - 14; nine were between 15 - 18; and two were over 19. In the sibling samples, two were under 11; two were

between 12 - 14; nine were between 15 - 18; and three were over 19.

#### Socioeconomic Status and Race

Fourteen families came from middle class backgrounds while only two came from upper class backgrounds. All families were of the Caucasian race.

#### Sibling Relationship

Two sets of fraternal twins were included in the study.

#### Birth Order

Thirteen of all the subjects were first born; 11 were second children; 3 of them were third born; 4 of them were fourth; and two of them were fifth born. (See Table 2.)

Table 2

#### Birth Order of Subjects by Age

	1	2	3	4	5	Total
Under 11	0	1	0	0	1	2
12 - 14	2	3	0	1	1	7
15 - 18	9	5	2	2	0	18
Over 19	2	2	1	0	0	5
	—	—	—	—	—	—
	13	11	3	3	2	32

In breaking down the frequencies of patients and siblings by birth order we noted that six of the patients were first born; six were second born; two were third born; and two were fourth born. In the sibling sample, seven were first born; five were second born; one was third born; one was fourth born; and two were fifth born. (See Table 3.)

Table 3

<u>Birth Order of Subjects by Diagnosis</u>		
<u>Birth Order</u>	<u>Patients</u>	<u>Siblings</u>
1	6	7
2	6	5
3	2	1
4	2	1
5	0	2
TOTAL	16	16

### Family Size

The average family contained two to six children.

### Introduction to Findings

Results of hypotheses testing are presented below in the following order. First, we will present the findings with regard to Aim 1 and its subsequent hypotheses. This aim

deals with the comparisons between the patients and their siblings on six psychosocial factors. Second, we will present the findings with regard to Aim 2 and its hypothesis. This Aim deals with a comparison of maternal perception of competencies in the patients and their siblings. Third, we will present the findings in regard to Aim 3 and its hypothesis. This aim deals with the correlation between mothers' perceived competencies of their daughters' and the daughters' self-perception of their own competencies. Aim 4 looks at the interrelationship between all dependent variables and examines the correlations to determine the degrees and differences in the multivariate relatedness between the two groups.

Lastly, the main findings were summarized. In each one-way analysis of covariance, age was used as the covariate. Prior to the analysis of covariance for each of the dependent variables, means and standard deviations were examined to insure that the variance of the measure stayed within the normal distribution. In each case this proved to be true.

#### Aim 1

How do female patients with anorexia nervosa and their sisters, who are free of eating disorders, compare on measures of social network, locus of control, perceived competence, perceived family cohesion and adaptability, anxiety disorders, and affective psychopathology?



Aim 1 had six hypotheses which were tested with 60 dependent variables.

#### Hypothesis 1

There is a difference between patients with anorexia nervosa and their sisters who are free of eating disorders on the level of intimacy and social support in their perceived social networks.

This analysis considered the differences between the anorectics and their sisters on the five social resource variables related to network structures. An analysis of covariance (with age as the covariate) was done on each of the five variables to test the differences between these two groups. These analyses revealed the following. First, the groups differed significantly with regard to peers ( $F = 8.32$ ,  $df = 1,30$ ,  $p = .01$ ) and group affiliations ( $F = 15.31$ ,  $df = 1,30$ ,  $p = .001$ ). (Refer to Table 4.) They did not differ significantly with regard to residing kin ( $F = 0.06$ ,  $df = 1,30$ ,  $p = .97$ ), nonresiding kin ( $F = 0.05$ ,  $df = 1,30$ ,  $p = .98$ ), or nonkin adults ( $F = 0.32$ ,  $df = 1,30$ ,  $p = .76$ ).

The sisters had more friends and belonged to more groups. Obviously, they would not differ with regard to residing and nonresiding kin. Interestingly, neither group differs with regard to the number of outside adult affiliations.

Table 4

Means and SD for Significant Social Resource Variables

	Network Structure	
	Peers	Group affiliations
Anorectics	1.3 (0.87)	0.05 (0.002)
Sisters	4.5 (1.2)	1.98 (0.67)

The next analysis considered the five social resource variables related to social support. An analysis of covariance (with age as the covariate) was done in order to test the differences between the anorectics and their sisters. The following results were revealed. See Table 5.

Table 5

Comparison of Anorectics and Siblings on Social Support Variables

	Anorectics		Siblings		DF	F	P
	Mean	SD	Mean	SD			
1. Peer supporters	.68	(.55)	3.2	(1.3)	1,30	15.36	.001
2. Residing kin supporters	.19	(.36)	1.3	(0.42)	1,30	7.86	.01
3. Nonresiding kin supporters	.25	(.19)	1.42	(0.36)	1,30	5.32	.05
4. Nonkin adult supporters	.98	(.73)	1.5	(0.98)	1,30	2.16	NS
5. Reciprocal supporters	.53	(.42)	1.8	(0.24)	1,30	8.88	.01

Hypothesis 2

There is a difference in the manifestation of external locus of control in the patients who have anorexia nervosa than in their sisters who are free of eating disorders.

A total score of all items on the Nowicki-Strickland locus of control test was derived by summing all the yes answers as number 1 and all the no answers as number 2. The mean response for patients was 57.86 (SD = 4.32) while for siblings the mean response was 60.92 (SD = 5.62). A one-way analysis of covariance was done to test the differences between the two groups which resulted in nonsignificance ( $F =$

2.75,  $df = 1,26$ ,  $p = .10$ ). Although probability did not reach significance at the .05 level, it is reasonable to suggest that a trend towards a significant difference exists. For this reason, subsequent analyses were done on each individual item. Table 6 summarizes the statistical differences between the two groups. These results indicate that there were three separate items that showed significance (items 11, 15, and 18).

Table 6

Comparison of Anorectics and Siblings on the Nowicki-Strickland Items

Item	Anorectics		Siblings		DF	F
	Mean	SD	Mean	SD		
1. Problem solving themselves	1.73	(0.45)	1.85	(0.36)	1,26	<1
2. Can stop catching cold	1.67	(0.48)	1.57	(0.51)	1,26	<1
3. Kids are born lucky	1.53	(0.52)	1.64	(0.49)	1,26	<1
4. Good grades mean a great deal	1.00	(0.00)	1.07	(0.26)	1,26	<1
5. Blamed for things	1.40	(0.51)	1.57	(0.51)	1,26	<1
6. Studies can pass any subject	1.53	(0.52)	1.21	(0.42)	1,26	3.06*
7. Doesn't pay to try	1.67	(0.49)	1.78	(0.42)	1,26	<1
8. Start well, it's a good day	1.73	(0.46)	1.86	(0.36)	1,26	<1
9. Do parents listen to children?	1.53	(0.52)	1.28	(0.47)	1,26	1.84
10. Does wishing make things happen?	1.67	(0.49)	1.71	(0.47)	1,26	<1
11. Punished no good reason	1.40	(0.51)	1.78	(0.42)	1,26	4.59**

Table 6 (cont.)

Item	Anorectics		Siblings		DF	F
	Mean	SD	Mean	SD		
12. Is it hard to change friends opinion	1.53	(0.52)	1.50	(0.52)	1,26	<1
13. Cheering more than luck wins	1.27	(0.46)	1.36	(0.50)	1,26	<1
14. Impossible to change parents' mind	1.53	(0.52)	1.71	(0.47)	1,26	1.03
15. Parents allow own decisions	1.36	(0.50)	1.00	(0.00)	1,26	7.32***
16. Little one can do if wrong	1.53	(0.52)	1.64	(0.50)	1,26	<1
17. Are kids born good at sports?	1.33	(0.49)	1.64	(0.50)	1,26	2.63
18. Other kids stronger	1.47	(0.52)	1.93	(0.27)	1,26	8.56***
19. Don't think about problems	1.67	(0.49)	1.78	(0.42)	1,26	<1
20. Can you choose your friends	1.13	(0.35)	1.21	(0.42)	1,26	<1
21. Four leaf clover brings luck	1.47	(0.52)	1.71	(0.47)	1,26	2.58
22. Homework relates to grades	1.07	(0.26)	1.07	(0.27)	1,26	<1
23. Can you stop kid from hitting?	1.60	(0.51)	1.64	(0.50)	1,26	<1
24. Have good luck charm?	1.60	(0.51)	1.64	(0.50)	1,26	<1

Table 6 (cont.)

Item	Anorectics		Siblings		DF	F
	Mean	<u>SD</u>	Mean	<u>SD</u>		
25. Liking you depends on your act	1.00	(0.00)	1.14	(0.36)	1,26	2.16
26. Do parents help?	1.00	(0.00)	1.14	(0.36)	1,26	2.13
27. People mean for no reason	1.60	(0.51)	1.64	(0.50)	1,26	<1
28. Changes what happens	1.33	(0.49)	1.43	(0.51)	1,26	<1
29. Bad things happen no matter	1.60	(0.51)	1.64	(0.50)	1,26	<12
30. Kids get their way by trying?	1.35	(0.52)	1.28	(0.47)	1,26	1.85
31. Useless to try at home	1.53	(0.52)	1.57	(0.51)	1,26	<1
32. Good things happen with work?	1.07	(0.26)	1.21	(0.42)	1,26	1.24
33. If have enemy, can't change	1.53	(0.52)	1.71	(0.47)	1,26	<1
34. Easy to get friends to do?	1.47	(0.52)	1.50	(0.52)	1,26	<1
35. Little to say about food at home	1.73	(0.46)	1.57	(0.51)	1,26	<1
36. Little can do if not liked	1.47	(0.52)	1.50	(0.52)	1,26	<1
37. Useless to try in school	1.93	(0.26)	1.86	(0.36)	1,26	<1

Table 6 (cont.)

Item	Anorectics		Siblings		DF	F
	Mean	SD	Mean	SD		
38. Planning makes things better	1.13	(0.35)	1.36	(0.50)	1,26	1.95
39. Little to say about family	1.60	(0.51)	1.64	(0.50)	1,26	<1
40. It's better to be smart than lucky?	1.27	(0.46)	1.43	(0.36)	1,26	<1

\*p &lt;.10

\*\*p &lt;.05

\*\*\*p &lt;.01

Thus, the patients believe they are punished by their parents for no good reason (item 11), that their parents should allow them to make their own decisions (item 15), and that other kids are physically stronger than they are (item 18).

### Hypothesis 3

There is a difference between the patients with anorexia nervosa and their siblings who are free of eating disorders on self-perceived competence in that the patients perceive themselves as less competent.

A one-way analysis of covariance using age as the covariate was done in order to test their self-report of differences between the patients and their siblings on the



following four competence factors: social, general, cognitive, and physical. The significant findings were on the social and general competence factors. No significant differences were found between self-reports on the cognitive factors and the physical factors. With regard to the significant findings, Table 7 shows that the siblings rated themselves as more competent than their anorectic sisters in the social and general domains.

Table 7

Comparisons of Means (Adjusted for Age) of Anorectics and Siblings on the Harter Competence Factors

Competence factors	Anorectics	Siblings	DF	F	p
	Adjusted Means	Adjusted Means			
Cognition	2.61	2.93	1,28	1.11	NS
Social	2.02	3.29	1,28	29.4	.0001
Physical	2.00	2.06	1,28	1.46	NS
General	1.98	3.16	1,28	19.9	.0002

Hypothesis 4

There is no difference between patients with anorexia nervosa and their sisters who are free of eating disorders on their perception of family cohesion and adaptability.

A one-way analysis of covariance using age as a covariate was done to test these differences on four

dependent measures: perceived family adaptability, perceived family cohesion, idealized family adaptability, and idealized family cohesion. No significant differences between these two groups on these four measures were found (refer to Table 8).

Table 8

Comparison of Means (Adjusted for Age) of Anorectics and Siblings on Perceived Family Cohesion and Adaptability and on Idealized Family Cohesion and Adaptability

Family dimension	Anorectics	Siblings	DF	F	p
	Adjusted means	Adjusted means			
Perceived cohesion	49.36	49.34	1,28	<1	NS
Perceived adaptability	38.81	40.98	1,28	<1	NS
Idealized cohesion	58.88	60.04	1,28	<1	NS
Idealized adaptability	55.90	57.11	1,28	<1	NS

Two additional two x two analyses of covariance (with repeated measure on the last factor) were done to test the differences between the patients' and their siblings' ratings of the actual family cohesion and adaptability versus their ratings on idealized family cohesion and adaptability. A significant difference was found between their actual

perception of family cohesion and adaptability versus their idealized ratings of the same family characteristics ( $F = 26.29$ ,  $df = 1,30$ ,  $p = .0001$ ) and adaptability ( $F = 50.62$ ,  $df = 1,30$ ,  $p = .0001$ ).

Results indicate that both sisters and anorectics desired that the family have a greater cohesiveness and adaptability than existed. Clearly, the ratings are similar and neither group saw the family as cohesive or as adaptable as they each desired.

#### Hypothesis 5

There is no difference in the incidence of anxiety disorder between the patients and their sisters who are free of eating disorders.

A chi-square contingency test confirmed this hypothesis as no significant differences were revealed between the two groups on Anxiety Disorders. Neither group had Separation Anxiety and three patients versus one sibling had Overanxious Disorder. (Refer to Table 9.)

#### Hypothesis 6

There is no difference in the incidence of affective disorders between the patients and their sisters who are free of eating disorders.

This hypothesis was not confirmed. A series of chi-square contingency tests indicated that there is a higher incidence of affective disorders in patients with anorexia

nervosa as compared to their siblings. Twelve of the patients versus two of the siblings had a Major Depressive Disorder, nine of the patients versus one of the siblings had a Dysthymic Disorder, and neither group had a member with a Cyclothymic Disorder. Since most patients had more than one diagnosis, the two groups (patients vs siblings) were also compared on total number of subjects with any affective disorder. (Refer to Table 9.)

Table 9

Incidence of Affective and Anxiety Disorders in Patients with Anorexia Nervosa and Their Siblings

(DSM-III) psychiatric diagnosis	Anorectics N = 16	Siblings N = 16	$\chi^2$	DF	p
Major depressive disorder	12	2	10.3	31	.0001
Dysthymic disorder	9	1	7.1	31	.01
Cyclothymic disorder	0	0			
Separation anxiety	0	0			
Overanxious disorder	3	1	0.3	31	NS
Total subjects with Affective Disorders	13	3	11.3	31	.001

### Aim 2

What is the difference between the parent's perception of the competence of their daughters with and without anorexia nervosa?

Aim 2 had one hypothesis which was tested with four dependent variables which measure the competence dimension, comprising cognitive, social, physical, and general factors.

### Hypothesis 7

There is a difference between the mothers' assessment of competence of their daughters with anorexia nervosa and of those who are free of this disorder with the anorectics perceived as less competent.

A one-way analysis of covariance using age as the covariate was done in order to test the mothers' perception of differences between the patients and their siblings with regard to the four competence factors. The results indicate that the mothers perceived only the social competence of the siblings as significantly higher than that of the patients. The other three competence factors, cognitive, physical, and general, did not show significant differences. (Refer to Table 10.)

Table 10

Comparison of Means (Adjusted for Age) of the Mothers' Perception of the Competencies of Their Anorectic Daughters and Their Siblings

Competence dimension	Anorectic	Siblings	DF	F	p
	Adjusted means	Adjusted means			
Cognitive	3.15	3.22	1,28	<1	NS
Social	2.51	3.18	1,28	5.01	0.03
Physical	2.59	2.99	1,28	1.81	NS
General	2.72	3.16	1,28	<1	NS

Aim 3

What is the relationship between the mothers' perception of competence and the children's perception of their own competence?

Hypothesis 8

There is no difference between the mothers' perception of both daughters' competence and the daughters' self-perception of competence.

Correlation coefficients were calculated between mothers' perceptions and their children's self-perception of competence. (Refer to Table 11.)

Table 11

Correlation Coefficients Between Parental Perceptions and Self-Report of Competence

Factors	Patients	Siblings
Cognitive	.63*	.47
Social	.31	.34
Physical	.82*	.58*
General	.34	.14

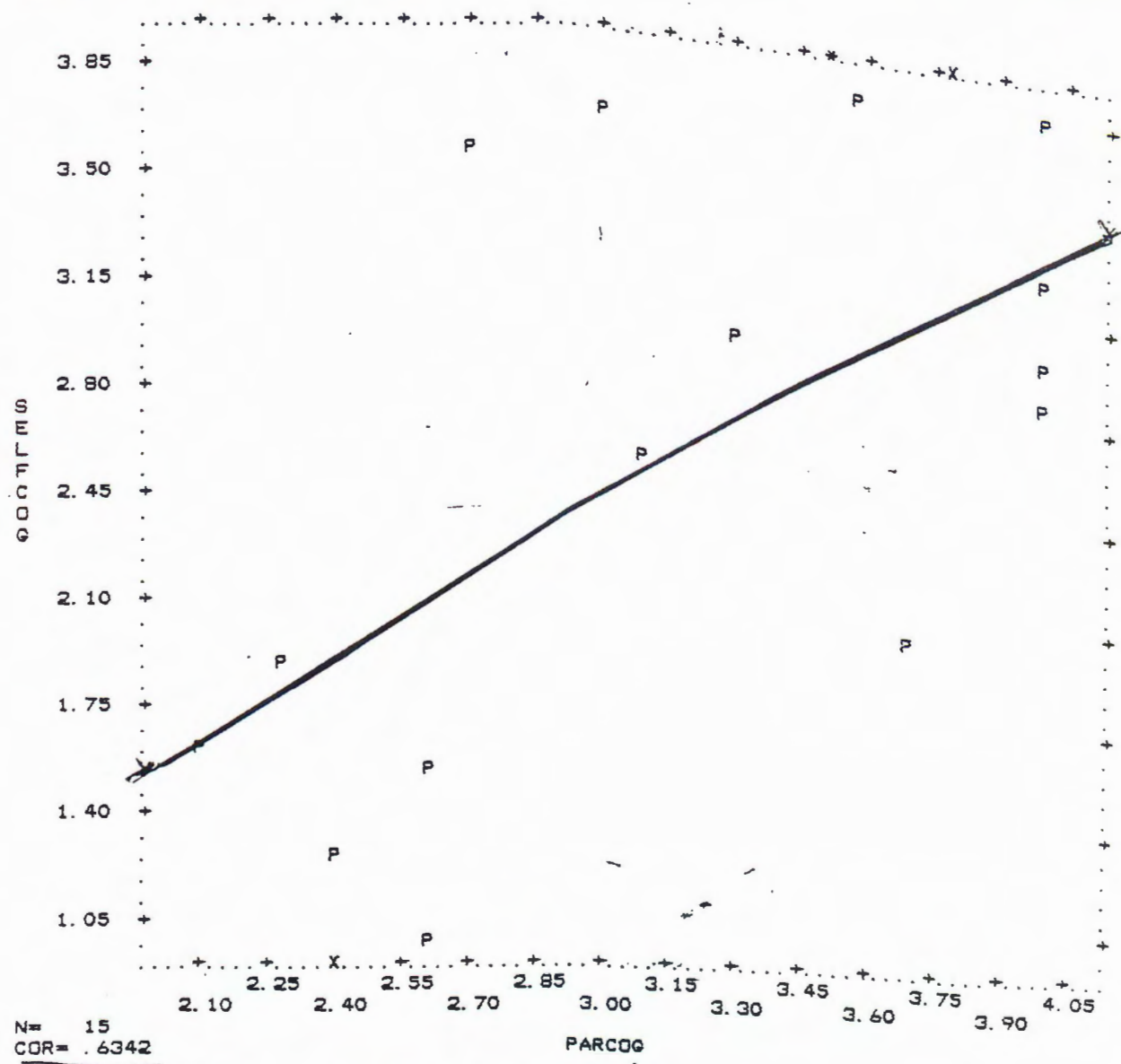
\*df = 13, P.01 = .64; P.05 = .51.

+df = 14, P.01 = .49

Correlations were higher in patient groups; thus mothers and patients were assessing similar attributes. However, correlations were lower, and less significant in the sibling group, revealing that this group did not perceive similar attributes as did their mother. In essence the correlation indicates that the mothers know the patients as well as they know themselves, but they do not know the siblings as measured in the four competence areas.

Figure 1. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Cognitive Competence in the Patient Group

PAGE 7 BMDP6D DATA TESTING



N= 15  
COR= .6342

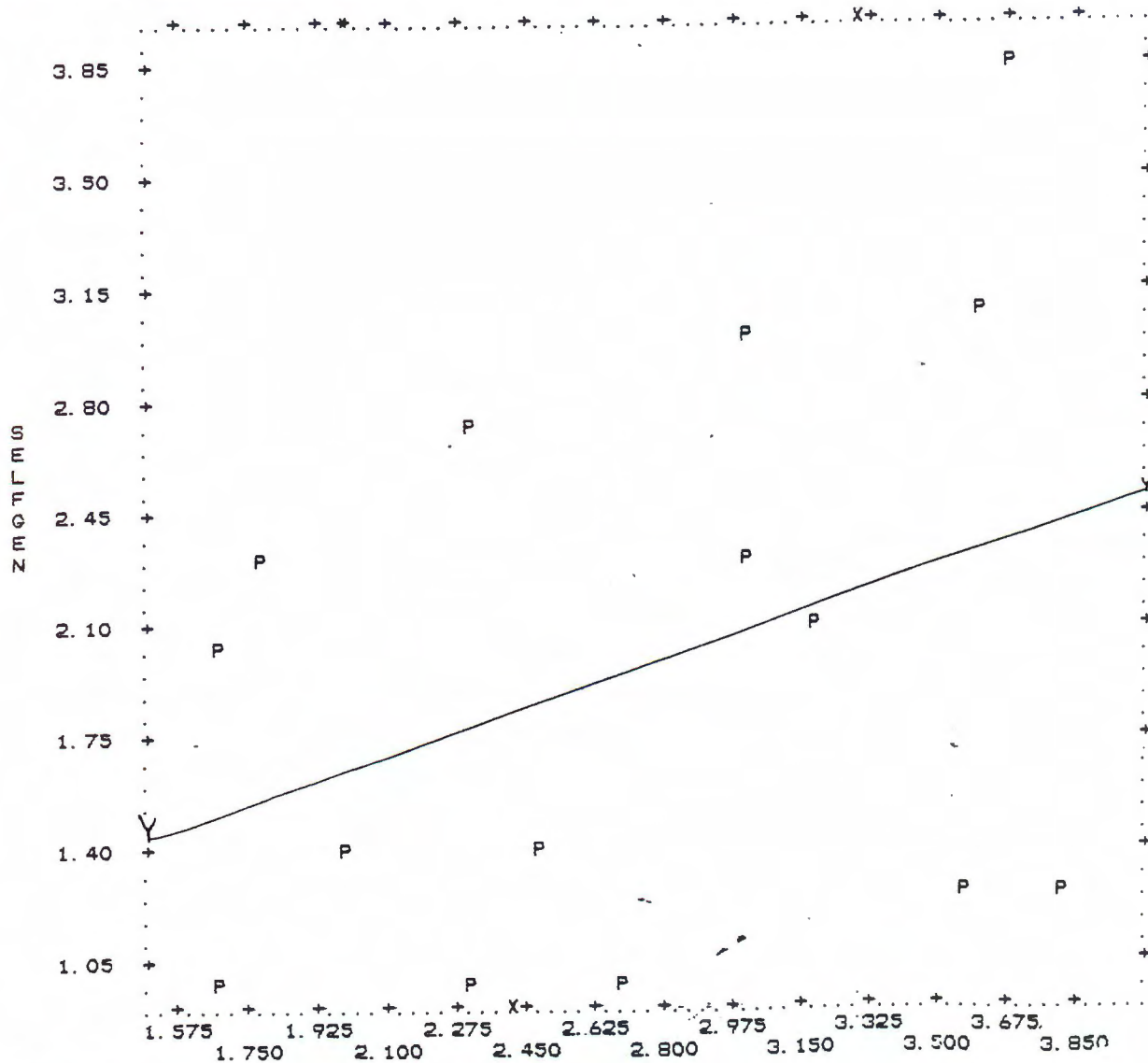
	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	3.1567	.68790	$X = .44437 * Y + 1.9972$	.30463
Y	2.6093	.98179	$Y = .90517 * X - .24798$	.62052

VARIABLE 57 PARCOG VS. VARIABLE 61 SELFCOG. GROUP=PATIENT, SYMBOL=P



Figure 2. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of General Competence in the Patient Group

PAGE 22 BMDP6D DATA TESTING



N= 15  
COR= .3430

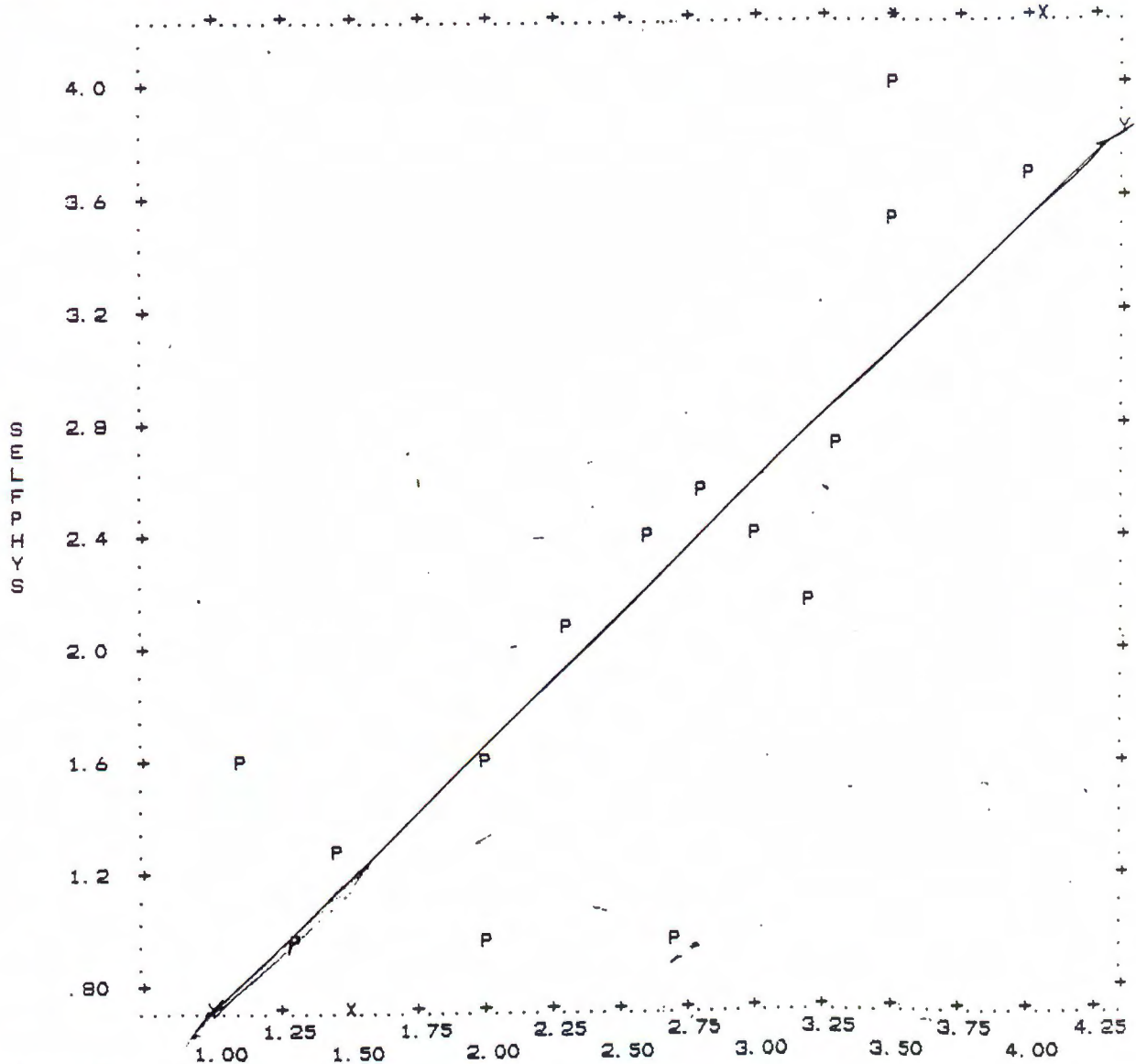
PARGEN

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	2.7180	.75331	X= .29149*Y+ 2.1391	.53924
Y	1.9860	.88636	Y= .40354*X+ .88918	.74654

VARIABLE 60 PARGEN VS. VARIABLE 64 SELFGEN GROUP=PATIENT, SYMBOL=P

Figure 3. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Physical Competence in the Patient Group

PAGE 17 BMDP4D DATA TESTING



N= 15  
COR= .8231

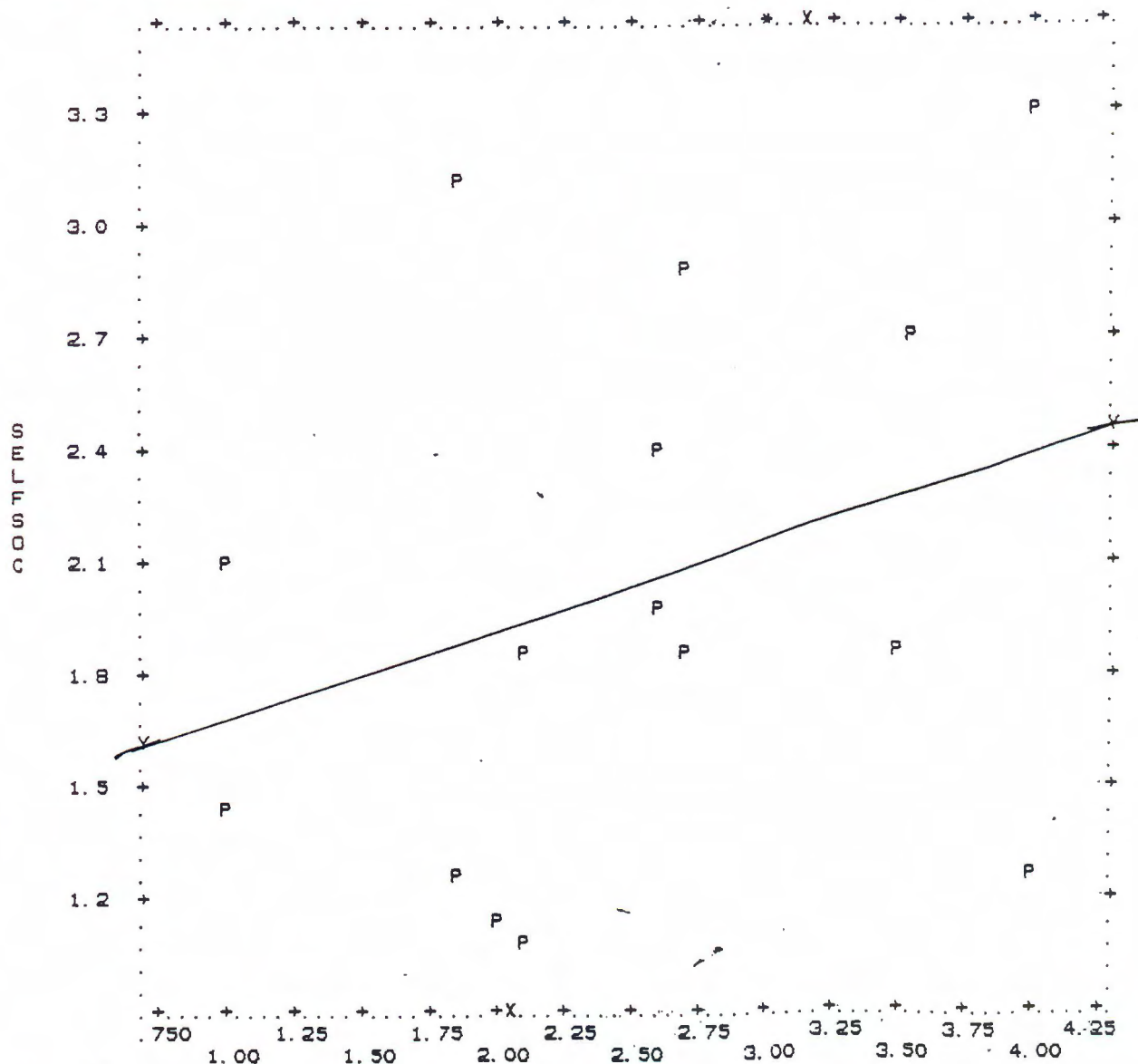
PARPHYS

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	2.5800	.87714	$X = .73112 * Y + .97105$	.26717
Y	2.2007	.98753	$Y = .92672 * X - .19027$	.33865

VARIABLE 59 PARPHYS VS. VARIABLE 63 SELFPHYS GROUP=PATIENT, SYMBOL=P

Figure 4. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Social Competence in the Patient Group

PAGE 12 BMDP6D DATA TESTING



N= 15  
COR= .3116

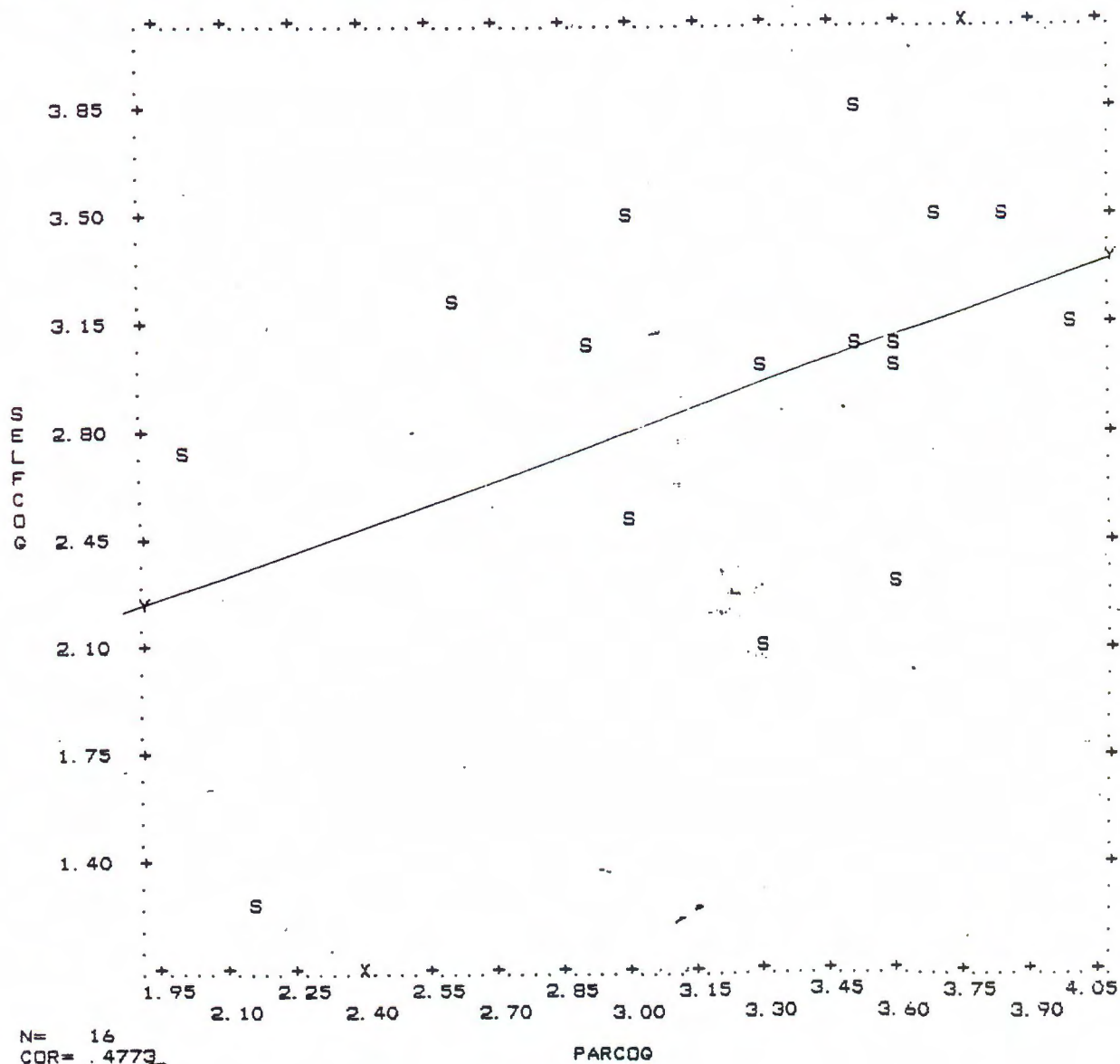
PARSOC

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	2.5067	.95010	X= .40993*Y+ 1.6778	.87770
Y	2.0220	.72231	Y= .23693*X+ 1.4281	.50729

VARIABLE 58 PARSOC VS. VARIABLE 62 SELFSCC GROUP=PATIENT, SYMBOL=P

Figure 5. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Cognitive Competence in the Sibling Group

PAGE 23 BMDP6D DATA TESTING



N= 16

CDR= .4773

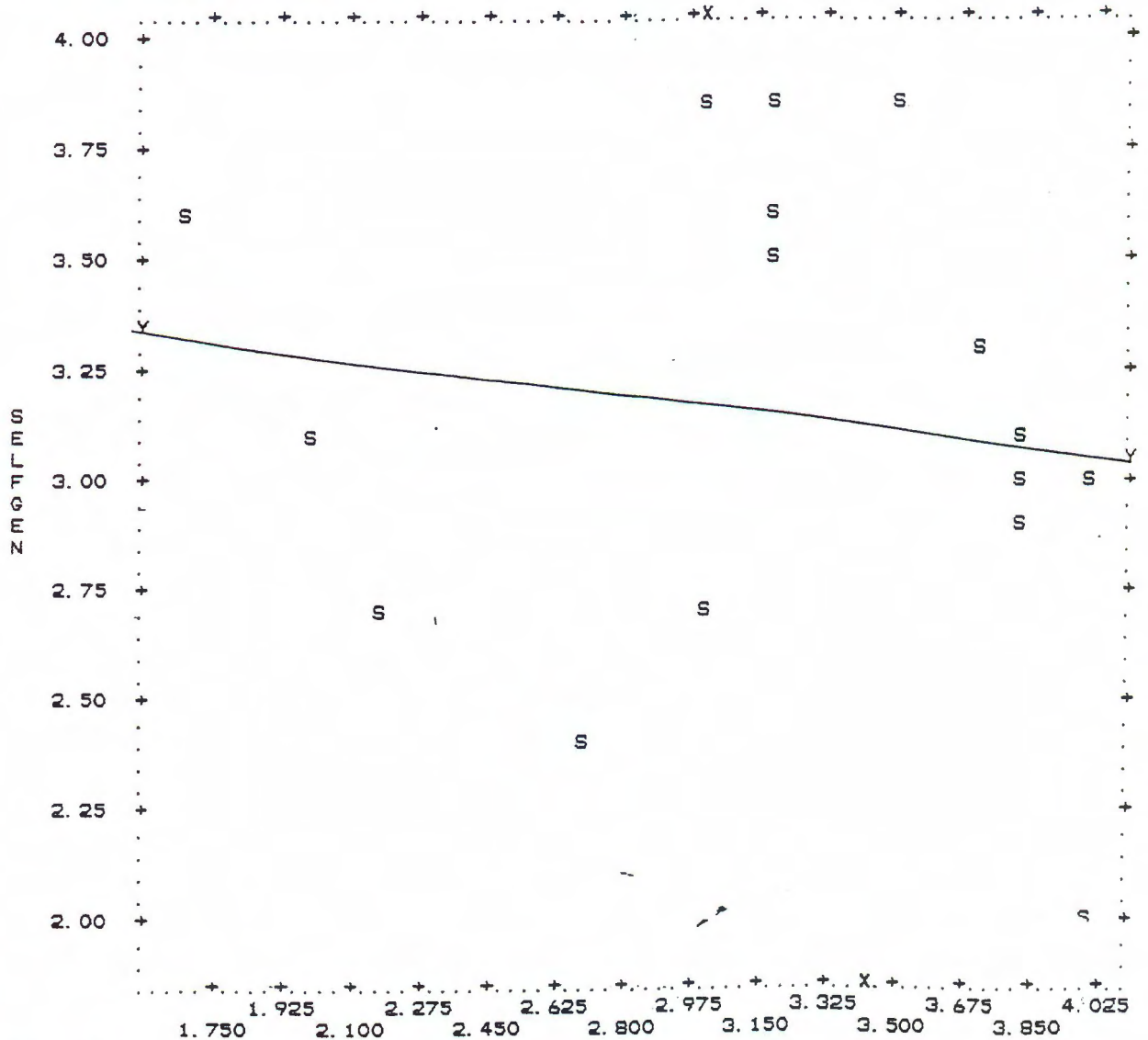
PARCOG

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	3.2263	.57806	$X = .43358 * Y + 1.9561$	.27645
Y	2.9294	.63639	$Y = .52549 * X + 1.2340$	.33505

VARIABLE 57 PARCOG VS. VARIABLE 61 SELFCOG GROUP=SIBLING, SYMBOL=S

Figure 6. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of General Competence in the Sibling Group

PAGE 38 BMDP6D DATA TESTING



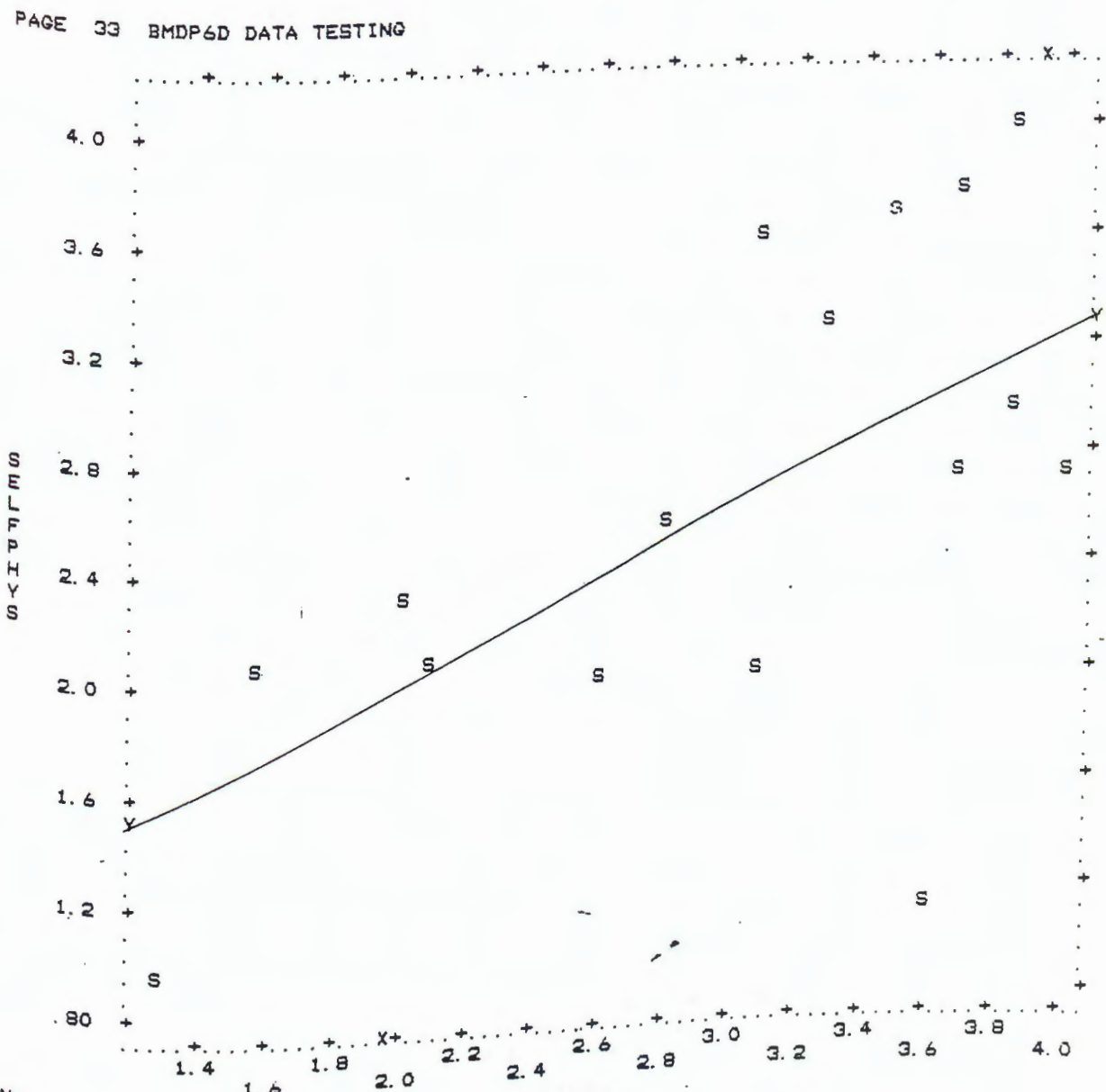
N= 16  
COR=-.1454

PARGEN

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	3.1731	.72559	$X = -.19339*Y + 3.7833$	.55216
Y	3.1550	.54355	$Y = -.10932*X + 3.5019$	.31214

VARIABLE 60 PARGEN VS. VARIABLE 64 SELFGEN GROUP=SIBLING, SYMBOL=S

Figure 7. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Physical Competence in the Sibling Group



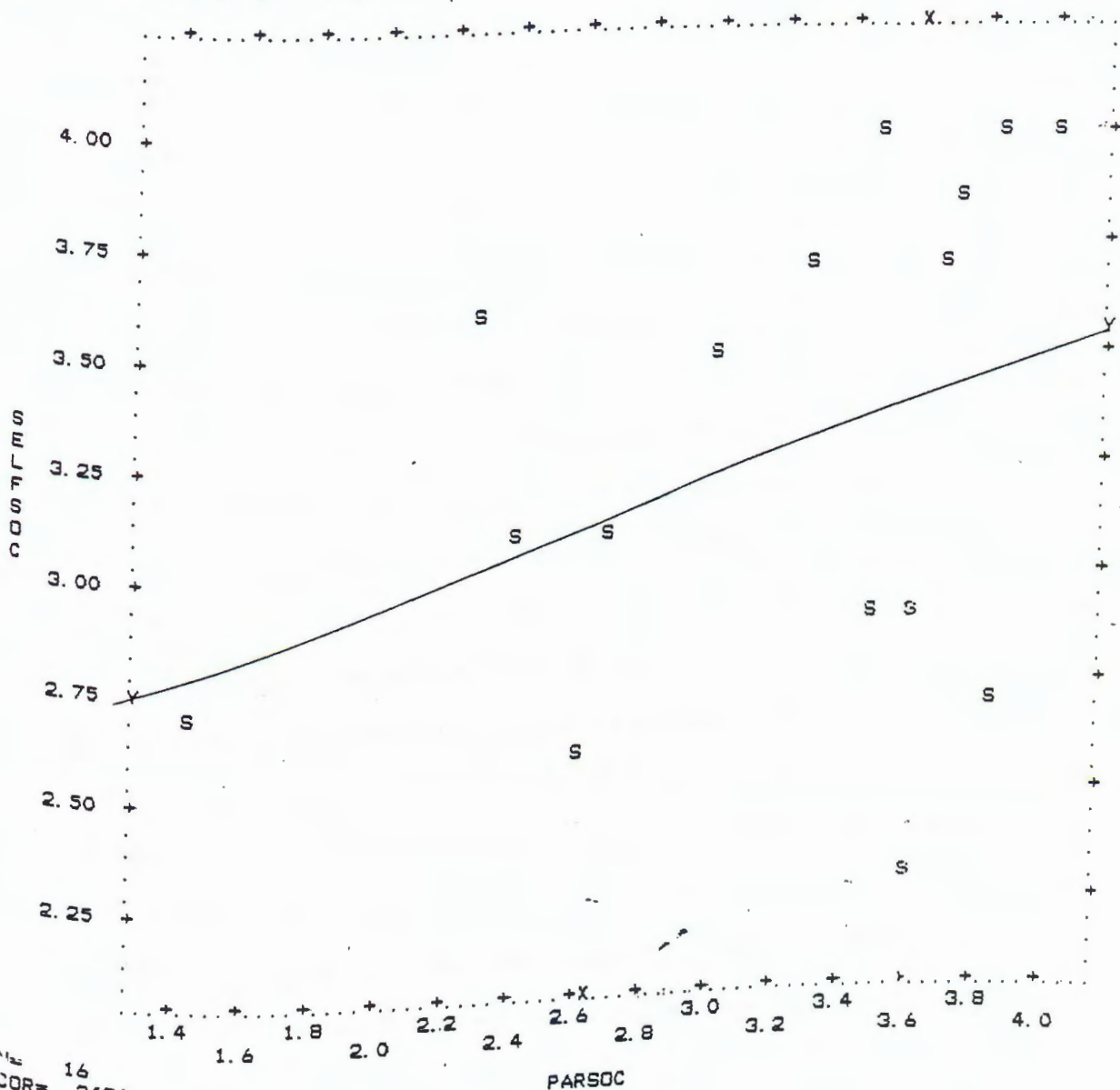
N= 16  
COR= .5873

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	3.0050	.86247	X= .55717*Y+ 1.5428	.52210
Y	2.6244	.90909	Y= .61903*X+ .76418	.58006

VARIABLE 59 PARPHYS VS. VARIABLE 63 SELFPHYS GROUP=SIBLING, SYMBOL=S

Figure 8. Scatter Plot of the Relationship Between the Parental Perception and Self-Ratings of Social Competence in the Sibling Group

PAGE 28 BMDP6D DATA TESTING



N = 16  
COR = .3426

	MEAN	ST. DEV.	REGRESSION LINE	RES. MS.
X	3.1888	.71754	$X = .43233 * Y + 1.7659$	.48688
Y	3.2913	.56866	$Y = .27153 * X + 2.4254$	.30580

VARIABLE 58 PARSOC VS. VARIABLE 62 SELF SOC GROUP=SIBLING, SYMBOL=S

Aim 4

What is the relationship among the variables in each group? Do these relationships differ between the groups?

Hypothesis 9

There is a difference in the number of related correlations between the patient and sibling variables; the sibling variables are not as highly related as those of the anorectics.

Relationships among the dependent measures were assessed with a Pearson Product Moment correlation.

The relationships between the variables were tested in order to examine the degree and differences in this multi-variate relatedness between the two groups.

For the patient group, 75 correlations were significantly related while for the sibling group 35 significant correlations were revealed. Since 5 out of 100 correlations would be expected by chance alone, this number of significant correlations clearly exceeds the number you would expect by chance.

With regard to the Nowicki-Strickland Test, more of these items were correlated in the patient group than in the sibling group.



Nowicki-Strickland Significant Relationships With All Other Variables in the Patient Group

In examining the data these relationships appear most noteworthy:

Hospitalization is consistently correlated negatively with externalizing factors on the Nowicki-Strickland items, such as, NS #7, "It doesn't pay to try"; NS #19, "I Don't think about problems"; NS #5, "I'm blamed for things"; NS #29, "Bad things happen no matter what"; and NS #31, "It's useless to try at home."

In light of these findings, hospitalized patients feel more helpless and less in control. This may be a result of being in a hospital which by its nature restricts one's control of self. On the other hand, it may indicate that the low self-esteem as reflected in the Nowicki-Strickland items is an indication of the serious psychological maladjustment of the anorectic, the severe symptoms having determined the present hospitalization.

Age. There are several items of Nowicki-Strickland which correlate with age, such as NS #17, "Are kids born good at sports?" indicating that the younger the patient is the more in control and less helpless she may feel.

On items relating to the family variables, there is a negative correlation between certain items of the Nowicki-Strickland Scale and Present Adaptability, Present Cohesion, and Idealized Cohesion. These items are NS #28, "You can

change what happens"; NS #30 "Kids get their way by trying"; NS #40, "It's better to be smart than lucky." Therefore, the more in control the patient feels she is, the more positive is her evaluation of the family present adaptability and family cohesion, as well as her wishes for future family cohesion.

Mothers' Perception of Child's Competence. Most Nowicki-Strickland items correlate positively with maternal perception of the child's competence. This finding gives more support to the possibility that the parents do not know their children well. This would agree with the children's perception of low family cohesion.

Mothers' Perception. In the patient group the mothers' perception is more closely related to more of the dependent variables than the sibling group, especially those regarding the other competence factors.

Twin Status. This correlates negatively with the total score of Nowicki-Strickland, indicating that the twin patients in our study had a more external locus of control, that is, they felt less in charge of their destiny.

Table 12

Significant Correlations for All Competence, Family Cohesiveness, and Family Adaptability Variables in the Patient Group (Subset of Entire Correlation Matrix)

Variable	Correlated with	Correlation
1. Parental Perceptions:		
A. Cognitive competence	1. Parental perception of social competence	.70**
	2. Parental perception of physical competence	.60*
	3. Present cohesion	.51*
B. Social competence	1. Parental perception of physical competence	.67**
	2. Education	-.50*
C. Physical competence	1. Present cohesion	.64**
	2. Present adaptability	.57*
D. General competence	1. Nowicki-Strickland total	.64**
2. Cohesion		
A. Present	1. Present adaptation	.87**
	2. Future cohesion	.57*
B. Future	1. Future adaptation	.65**
3. Adaptation		
A. Present	1. Nowicki-Strickland total	.65**
	2. Hospitalization	-.54*
B. Future	1. Hospitalization	.63**
C. Age in months	1. Education	.82**
D. Twin status	1. Nowicki-Strickland	-.52*

Table 12 (cont.)

Nowicki-Strickland Significant Relationships With All Other Variables in the Patient Group

Variable	Correlated with	Correlation
1. Kids are born lucky NS #3	1. Adaptation Now	.59*
	2. Parental perceptions of:	
	Cognitive competence	.57*
	Social competence	.59*
	Physical competence	.49*
	General competence	.83**
2. Doesn't pay to try NS #7	1. Hospitalization	-.52*
	2. Ideal cohesion	.57*
	3. Parental perceptions of:	
	Cognitive competence	.55*
	Social competence	.53*
	Physical competence	.59*
	4. Self-perceived:	
Cognitive competence	.56*	
3. Kids born good at sports NS #17	1. Age in months	-.49*
	2. Prior hospitalization	.68**
	3. Adaptation - ideal	.58*
	4. Parents perception of social competence	.54*
4. Don't think about problems NS #19	1. Self-perception of physical competence	-.50*
5. Problem solving themselves NS#1	1. Hospitalization	-.57*
	2. Present cohesion	.57*
	3. Present adaptability	.64**

Table 12 (cont.)

Variable	Correlated with	Correlation
6. Problem solving themselves NS #1	1. Parental perceptions of:	
	Cognitive competence	.60*
	Social competence	.53*
	Physical competence	.54*
7. Blamed for things NS #5	1. Hospitalization	-.77**
8. Little one can do if wrong NS #16	1. Hospitalization	-.50*
	2. Adaptation now	.60*
	3. Parental perceptions of:	
	Cognitive competence	.58*
	Social competence	.58*
	Physical competence	.58*
	4. Nowicki-Strickland total	.64**
5. Self-perception of Social competence	.50*	
9. Bad things happen no matter NS #29	1. Hospitalization	-.62*
	2. Self-perception of General competence	.49*
10. Useless to try at home NS #31	1. Hospitalization	-.50*
	2. Present adaptability	.57*
	3. Cohesion - ideal	.59*
11. Easy to get friends to do NS #34	1. Prior hospitalization	.52*
12. Do parents listen to children NS #9	1. Adaptability now	-.53*
	2. Nowicki-Strickland total	-.66**
	3. Self-perception of Social competence	-.62**

Table 12 (cont.)

Variable	Correlated with	Correlation
13. Have good luck charm NS #24	1. Cohesion - ideal	.50*
14. People mean for no reason NS #27	1. Adaptability now	.56*
15. Changes what happens NS #28	1. Adaptability now	-.65**
	2. Cohesion - ideal	-.53*
	3. Adaptability - ideal	-.61**
	4. Parental perception of physical competence	-.50*
16. Kids get their way by trying NS #30	1. Adaptability now	.61*
	2. Cohesion - ideal	.54*
	3. Self-perception of general functioning	.61*
17. It's better to be smart than lucky NS #40	1. Adaptability now	-.56*
	2. Cohesion - ideal	-.50*
18. Cheering more than luck wins NS #13	1. Self-perception of social competence	.60*
19. Other kids are stronger NS #18	1. Self perception of physical competence	.60*

DF = 14

\*p < 0.05 = .497

\*\*p < 0.01 = .623

### Siblings

Birth order correlates positively with the children's perception of family present cohesion. Age was correlated in the same direction. This may be interpreted that the younger the siblings the more positively they evaluate the family as similar to the one seen in the patient group.

Self-perception of cognitive competence in the siblings was negatively correlated with the total of Nowicki-Strickland items, as well as with NS #32, "Good things happen with work"; NS #17, "Are kids born good at sports"; and NS #24, "Have good luck charms." This may indicate that the siblings who feel more in control see themselves as functioning better in the cognitive domain.

The most striking finding in this data is that in the sibling group very few variables correlated with each other, as compared with the many correlations in the patient group.

Table 13

Significant Correlations for All Competence, Family Cohesiveness, and Family Adaptability Variables in the Sibling Group

Variable	Correlated with	Correlation
1. Parental perceptions:		
A. Cognitive competence	1. Nowicki-Strickland total	-.52*
B. Physical competence	1. Birth order	.52*
	2. Present adaptation	.68**
	3. Present cohesion	.65**
2. Cohesion - present	1. Age in months	-.52*
	2. Birth order	.52*
	3. Present adaptation	.76**
3. Adaptation - future	1. Twin status	-.52*
4. Age in months	1. Education	.94**

DF = 14

\*  $p < 0.05 = .497$

\*\*  $p < 0.01 = .623$



Table 13 (cont.)

Nowicki-Strickland Significant Relationships With All Other Variables in the Sibling Group

Variable	Correlated with	Correlation
1. Doesn't pay to try NS #7	1. Age in months	.61*
	2. Birth order	-.54*
	3. Education	.52*
	4. Hospitalization	.53*
2. Cheering more than luck wins NS #13	1. Age in months	-.58*
	2. Education	-.53*
3. Don't think about problems NS #19	1. Age in months	.67**
	2. Education	.52**
4. Useless to try at home NS #31	1. Birth order	-.49*
	2. Cohesion now	-.57*
	3. Self-perception of physical competence	-.59*
5. Planning makes things better NS #38	1. SES	.56*
6. Start well, its a good day NS #8	1. Hospitalization	.53*
7. It's better to be smart than lucky NS #40	1. Hospitalization	-.68**
8. Parents allow own decisions NS #15	1. Adaptation now	.59*
9. Four leaf clover brings NS #21	1. Parents perception of Cognitive competence	-.53*

Table 13 (cont.)

Variable	Correlated with	Correlation
10. Liking you depends on your act NS #25	1. Parents perception of Cognitive competence	-.59*
	2. Self-perception of physical competence	.56*
11. Easy to get friends to do NS #34	1. Cohesion now	.64**
	2. Self-perception of social competence	-.55*
12. Bad things happen no matter NS #29	1. Adaptation ideal	.73**
13. Good things happen with work NS #32	1. Parental perception of Cognitive competence	-.59*
14. Are kids born good at sports NS #17	1. Self-perception of Cognitive competence	-.62*
15. Have good luck charm NS #24	1. Self-perception of Cognitive competence	-.56*

DF = 13

\*  $p < 0.05 = .497$

\*\*  $p < 0.01 = .623$

## CHAPTER V

### DISCUSSION AND IMPLICATIONS

#### Introduction

Discussion of the findings in this study will begin by focusing on the demographic properties of the study sample, which will help illuminate the sociocultural aspects of anorexia nervosa. Following this, each aim and its hypothesis will be restated in light of the findings. Next, in keeping with the goals of my research, both the similarities and differences between the patients and the siblings will be discussed. Finally, this comparison will be used as a basis for my main objectives, that is, a better understanding of protective and risk factors in anorexia nervosa and their potential value in prevention and treatment of this serious disorder.

#### Demographic Characteristics of the Study Sample

Practically all of the subjects came from middle and upper socioeconomic classes. Although this finding agrees with the prevailing views in the literature, the virtual absence of representatives of lower socioeconomic classes came somewhat as a surprise. Children's Hospital in Washington, DC, is a community hospital where patients are a) either referred and treated by private physicians, or b) admitted and treated by staff physicians. The patients in the "private" group tend to come from middle- and upper-class families. The "staff" group is by far the more numerous, and

patients in this group come predominantly from lower-class and inner city families.

The Eating Disorders Clinic, which supplied all of the subjects, is one of several specialty clinics in which the patients are mainly seen by members of the house staff. The social composition of the patients in such specialty clinics reflects rather faithfully the social class patient mix of the entire hospital, that is, the majority coming from lower-class families. Against this background, the social composition of the sample takes on an added significance, underscoring the widely reported fact of increased vulnerability of anorexia nervosa of members of the middle and upper classes. These findings may be of importance when one considers the reasons given to explain the recent increased prevalence of anorexia nervosa throughout the western world. One widely held view attributes the emphasis our modern culture places on thinness by exposure to very slender TV and film personalities who serve as role models for millions of adolescents and young adults. Some believe that the availability of film and TV even to the socially disadvantaged contributes to the "democratization" of anorexia nervosa (Rakoff, 1982), by increasing the risk to all, regardless of social standing. The data does not support this theory of more widespread anorexia nervosa among the lower class. Albeit, they have the same exposure to fashion media, the study indicates that it is still the

middle-and upper-class family that appeared more vulnerable. Therefore, the thin role model of fashion media is but one of the determinants of this disorder along with such factors as genetics, endocrinological, developmental, sociocultural, and familial. With this fact in mind, the hypotheses dealing with psychosocial factors will be reviewed.

Hypothesis 1 predicted a difference between patients with anorexia nervosa and their siblings on the level of intimacy and social support in their perceived social network. The results indicate a number of differences between the two groups. The siblings scored higher on the number of peers and group affiliations. However, there was no difference regarding the number of outside adult affiliations. The siblings perceived much more support in their social network than their sisters with anorexia nervosa. The differences were significant in the following categories: peer support, residing kin support, nonresiding kin support, and reciprocal support. Clearly, overall the siblings have more support than their sick sisters.

Hypothesis 2 used the locus of control scale, that is, it was predicted that patients with anorexia nervosa manifest a more external locus of control than their siblings. The comparison between the two groups on the entire Nowicki-Strickland Test indicates a trend which did not reach statistical significance regarding the predicted difference

between the two groups. When each item of the scale was separately examined there were three questions that yielded statistical significance in the expected direction. The patients with anorexia nervosa believed a) that they were punished by the parents for no good reason, b) that the parents should allow them to make their own decisions, and c) that their age mates are physically stronger. Thus this hypothesis found partial support, indicating that the patients saw themselves as helpless and dependent on other people, especially in areas concerning decision making and personal power.

Hypothesis 3 stated that the patients perceived themselves as less competent than their siblings in four areas of functioning: social, cognitive, physical, and general. This hypothesis was confirmed in two out of four areas, that is, social and general functioning. The lack of difference regarding physical competence is rather surprising, since on the Nowicki-Strickland scale the difference between the patients and siblings on the perception of physical strength was highly significant. Possibly the two scales have different points of emphasis. While the Nowicki-Strickland scale inquires about general strength, the Harter scale emphasizes physical skills, that is, proficiency in sports. There may be a connection between the patients' positive perception of their physical skills and the well-known paradoxical high level of activity, even in

hospitalized, emaciated patients with anorexia nervosa. Interestingly enough, in the past when Simmond's cachexia was considered in the differential diagnosis of anorexia nervosa, the paradoxical hyperactivity of the patients was cited as one of the main differentiating factors between these two diseases (Dally & Sargant, 1960).

Hypothesis 4 dealt with the perception of the patients and siblings of their actual and idealized Family Cohesion and Adaptability. This hypothesis was confirmed, that is, both the patients and their siblings perceived the family as equally low on actual cohesion and adaptability. The idealized family cohesion and adaptability was rated significantly higher than the actual family cohesion and adaptability by both patients and siblings. Thus, both sisters viewed the family as disturbed on both above dimensions, and their wishes for improvement on both were very similar. The low family adaptability indicates rigidity, which is in keeping with the common views of those who studied the family functioning of anorexia patients (Minuchin, 1978 and Pallazoli, 1974). However, the subjects rated their family as low on cohesion, indicating a disengagement or lack of attachment and a high degree of personal autonomy for each family member. These findings contradict the consensus of the above mentioned family theorists, who emphasized the high degree of "enmeshment" in families of anorectic patients.

Hypotheses 5 and 6 dealing with incidence of anxiety and affective disorders in both groups predicted that there would be no difference between the patients and siblings in regard to these psychiatric disorders. The results of the study confirmed one of these hypotheses regarding anxiety disorders which did not distinguish between the two groups. However, there was a much higher incidence of affective disorders in the patients with anorexia nervosa than in their siblings.

Hypothesis 7 predicted a difference between the mothers' perception of competencies in their daughters with anorexia nervosa and in their sisters who are free of the disorder. This hypothesis was only partially confirmed by the findings, since the mothers' perception of the social competence of the patients was lower than that of the siblings. The assessment of their daughters in other areas of competence, that is, cognitive, physical, and general, however, did not show significant differences.

Hypothesis 8 measured the correlation between mothers' perception and the subjects' self-report on the four competence factors: social, cognitive, general, and physical. The results show higher correlations in the patient group than in the sibling group. These findings could indicate that the mothers knew their anorectic daughters better than they knew the patients' siblings.



In Hypothesis 9 correlation among the dependent variables indicates differences in related variables between the groups.

One of the stated goals of the research was to discern both the similarities and differences between the patients and the siblings. Such a goal would serve as a useful framework for the discussion, understanding, and potential implications of the findings.

#### Similarities

The fact that both the patients and their siblings perceived their families in a similar fashion as being low on cohesion and adaptability suggests two interesting possibilities. To begin with, this validation of a family pathology supports the original designation of the siblings as being at risk for psychopathology. The commonality of the perception of family functioning brings up an interesting insight on cognitive function of patients with anorexia nervosa. A faulty reality testing is attributed to this group as part of their psychodynamics. The findings indicate that such a faulty reality testing may be limited only to the patients' body image, while reality testing remains intact in other areas of perception.

The perception of both the patients and siblings of their family as being low on adaptability, that is, rigid, conforms with the prevailing views of the family theorists about psychodynamics in families of patients with anorexia

nervosa. However, their perception of the families as being low on cohesion appears incongruent with the emphasis placed by some investigators (Minuchin et al., 1978; Selvini-Palazzoli, 1974) on the family "enmeshment." Far from being enmeshed, these families were seen by most of my subjects as "disengaged" and lacking cohesion. Since anorexia nervosa is regarded by some as "the" psychosomatic disease, par excellence (Minuchin et al., 1978), a brief historical overview may be helpful in clarifying this incongruity.

A generation ago, Franz Alexander was regarded as the authority on psychosomatic illness. He promulgated the view of specificity of personality types for each psychosomatic illness. Thus, he distinguished the "asthmatic personality," the "hypertensive personality," the "ulcer personality" as being quite different and specific to each of these disorders. In fact, research generated by Alexander (1966) and his group suggested that the knowledge of a patient's personality profile could permit one to safely guess the kind of psychosomatic illness. This seemingly precise delineation caused much excitement at that time in the mental health profession. However, like many other paradigms, this typology of psychosomatic personality did not stand the test of time. Careful investigations failed to support this rather attractive theory, which consequently fell into disrepute and was replaced by a more pragmatic view--that there is no specific personality or psychopathological

profile to neatly fit each psychosomatic entity, and that one may find a whole gamut of psychopathology in any of these disorders.

One may possibly draw an analogy between the personality profile of Alexander (1966) and the family profile of modern family theorists. While the "enmeshment" may be a characteristic of many families of patients with anorexia nervosa, there is to the author's knowledge, no rigorous research to support the universality of enmeshment in these families. In absence of such research, it may be prudent to assume that patients with anorexia nervosa come from families that demonstrate a variety of psychological disorders (Rakoff, 1982).

In fact, one may go a step further and caution that while the clinical anecdotal reports of some studies served to validate and confirm the accepted picture of the anorectic family, they also generate a bias by placing these families into preconceived patterns. Our study indicates that each case of anorexia needs to be interpreted within the context of the individual family configuration. Therefore, a "one size" concept does not fit all.

I have commented on the similar self-perception by the patients and siblings of their physical competence. The equally similar self-perception of cognitive competence which was also confirmed by the mothers' assessment, warrants some comment. Some investigators (Jimerson, 1984) suggest that

patients with anorexia nervosa have serious cognitive deficits, particularly during more acute phases of illness. The finding of a relatively intact reality testing even in hospitalized patients does not necessarily negate these reported findings of cognitive deficits. Reality testing is only one of many cognitive tasks, and the patients with anorexia nervosa may fail when tested on more formal tasks of abstract thinking.

The mothers' assessment of similar competence in their anorectic daughters and their siblings in the areas of physical, cognitive, and general function, is somewhat puzzling, considering the poor general functioning of patients with anorexia nervosa (Bruch, 1962). It may possibly indicate that these mothers (all theoretical axioms about tight mother-daughter bonds notwithstanding) do not really know their anorectic daughters well. Furthermore, as previously mentioned, the poor correlation between the mothers' assessment and self-assessment of the siblings may also indicate that the mothers do not know either of their daughters well, those with or without eating disorders. Although such interpretation of the findings runs counter to prevailing views of the intimacy of mothers and their anorectic daughters, these findings do fit the subjects' perception of a low level of cohesion in their families. As previously discussed, a low level of cohesion indicates a lack of intimacy rather than close bonds between family

members. Such patterns of low cohesion may exist only in some families of anorectic patients, but nevertheless, such existence would further challenge the prevailing stereotyping of anorectic family relationships.

### Differences

The findings resulting from the locus of control data seem most relevant to the issue considered pivotal by many investigators, that is, the feelings of being helpless and manipulated by others as described by most patients with anorexia nervosa. This awareness may well explain the anorectics desperate struggle for control in at least one area, that of food, regardless of its misguided self-destructive nature. The siblings, whose testing revealed that they felt more the masters of their own fate have no need to resort to such desperate measures in this area. Nevertheless, such interpretation must be tempered with caution, in view of the fact that only 3 out of 40 items on the Nowicki-Strickland scale significantly distinguish between the patients and their siblings which may indicate that the role of the externalization of the locus of control, although of some importance in affective disorders, is not as crucial as has been suggested by some (Seligman, 1975).

In regard to the social network, the two groups significantly differed on several factors. The siblings' scored higher on a number of peer and group affiliations. In addition, they scored higher on social support in peer

groups, residing and nonresiding kin, and reciprocal support. In contrast, their anorectic sisters have an impoverished social life, with less support and fewer meaningful relationships outside the family circle. There is substantial information available indicating the protective value of an expanded, rich social network in various groups of "children at risk" for mental illness (Blyth, 1982).

Rutter (1978) has suggested that, in the context of disturbed families, supportive relationships with nondisordered family members as well as with outside adults might be protective in childhood. The present data provide evidence of social support for the siblings in both kin as well as peers, but no difference regarding outside adult relationships. In this area, the present study failed to differentiate between the disordered and the nondisordered subjects. It is not clear from the present data why the nondisordered children, like their anorectic sisters, lacked outside adult relationships, but it is apparent that they were better able to establish supportive and intimate relationships with kin and peers alike, factors which may have been more effective in mediating life stress and genetic vulnerability.

However, it is questionable as to whether the nondisordered siblings were more fortunate in having a more responsive social network than their less fortunate sisters. More likely was it that they were more adept at extracting

the maximum benefits from their social environment. An available supportive environment might certainly have fostered such skills, but the superior personal resources of the nondisordered sisters suggest that they were more capable socially.

The role of social network as preventing or ameliorating psychopathology in the siblings is only one possible interpretation of our findings. To begin with, one should remember that we measured the perceived rather than actual social network and support. Such perception may be intact in well-functioning siblings, but this perception may be distorted in patients with anorexia nervosa as part of their psychiatric disturbance. On the other hand, if the perception of an impoverished social network is correct, it still would be difficult to discern in a retrospective study whether such unsupporting environment existed prior to the onset of anorexia nervosa, or whether it is a corollary of this illness. In this context the fact that most patients as opposed to siblings had an affective illness, gains a special significance. It is widely accepted that depressed people often withdraw socially and discourage the social initiatives of others and thus undercut their potential sources of social support (Seligman, 1975). Seen in this light, the meager social support may be a consequence rather than an antecedent of anorexia nervosa when coupled with an affective illness.

According to another view, a relationship may exist between the disturbance in body image of the anorectic patients and their impoverished social network. In a recent thought provoking article, van der Velde (1985) suggested that people with body image disturbances have a faulty perception not only of their own body but of the bodies of other people as well. He introduced a new term, "extraneous body image," that is, one's mental representation of others' appearance and behavior. According to van der Velde, this extraneous body image dominates our psychological perception of others and provides the foundation of all human interaction. Such a correlation between a) a disturbed body image of one's self and of others and b) disturbed "extraneous body image" and social interaction would provide some interesting speculation, but this theory has yet to be tested. Body image distortions in anorexia nervosa are potentially of great interest both to the understanding and possible psychosocial treatment of this disorder (Garner & Garfinkel, 1982).

The high prevalence of affective disorders in the patients with anorexia nervosa is in agreement with the findings of many investigators of an increased incidence of affective illness in patients with anorexia nervosa as well as in their families (Theander, 1970). The incidence of affective disorders in the siblings of 18.5% is about double the rate in a normal middle class population (Kashani et al.,



1983; Weissman, 1985). Such risk should theoretically also be extended to the parents of our patients and could explain some of the previously discussed disturbances in family dynamics (cohesion and adaptability). In this context, Gershon et al. (1983) described the relationship of dissonance and disorder in families where anorexia nervosa and major affective illness coexist.

The concurrence of affective disorder and anorexia nervosa in the sample brings up the question of a causal relationship of these two psychological entities. Obviously, retrospective research of this kind does not allow one to sort out causes from consequences. The possibly confounding influence of clinical status compounds the problem of causal interpretation in retrospective research.

As reviewed earlier, several investigators suggested a dichotomy between a primary and secondary anorexia nervosa. In patients with a primary variety, the psychopathology is well delimited to the diagnostic criteria of anorexia nervosa while in others the eating disorder seems secondary to a variety of serious psychiatric disorders. The author believes that such a rather arbitrary primary-secondary dichotomy confounds rather than clarifies the causal relationships among the various concurrent psychopathological entities. Many investigators (Bruch, 1962) suggested that a secondary anorexia in a patient with another psychopathological diagnosis lacks the cardinal features of primary

anorexia nervosa and may be of lesser severity. While this may be true in some cases, there is no reason to doubt that a true anorexia nervosa may coexist with another psychiatric illness.

A useful model to handle this issue is being widely used by investigators of affective disorders. As proposed by Robins and Guze (1972), a primary affective disorder exists if the patient never experienced any other psychiatric disorder prior to the onset of an affective disorder. A secondary affective disorder is defined as one preceded by at least one nonaffective psychiatric disorder. The system is widely accepted in Europe and America, and has been validated by a number of psychopharmacological outcomes and epidemiological studies (Robins & Guze, 1972). If such delineation might be applied in the context of this disease, the patient with primary anorexia nervosa never would have experienced any other psychiatric disorder prior to the onset of anorexia nervosa. On the other hand, a patient with secondary anorexia nervosa would have experienced at least one other psychiatric (noneating) disorder prior to the onset of anorexia nervosa. If validated, such a system could clarify rather than becloud the crucial link between anorexia nervosa and other psychopathological disorders.

The siblings scored better than their anorectic sisters on most of the research measures, especially on the incidence of psychopathology, social network, and support. However,

the incidence of affective disorders measured almost 20%, and the overall incidence of psychopathology (i.e., affective and anxiety disorders) measured 25% which is higher than reported in the normal population. These findings support my initial premise that the siblings present a group at risk for psychopathology. Such results would confirm trends in the literature which estimate the risk for anorexia nervosa in siblings as many times higher than that of the normal population (Theander, 1970). It also should be pointed out that most of the siblings were of relatively young age at the time of this study and had not yet passed through the age of high risk for anorexia nervosa which extends to at least ages 22 through 25 years (Halmi, 1974).

Finally, the possibility of genetic factors in anorexia nervosa should again be mentioned. At this point in our limited scientific knowledge it would be difficult for one to test a genetic hypothesis. First of all, most biological changes in patients with anorexia nervosa seem secondary to the extreme weight loss and return to normal when weight is restored. Second, studies of families and twins, although suggesting a possibility of a genetic factor, do not provide sufficient definitive evidence for it. Third, it would be difficult to explain the very low prevalence of anorexia nervosa in lower socioeconomic classes, if the biological factors were most instrumental in the etiology of this disorder.

### Conclusions

A number of conclusions seem warranted on the basis of the present findings. Thus far I have examined and compared the many psychosocial factors that may relate to and influence emotional states of the anorectic and her well sibling. My discussion has emphasized primarily the areas of similarities and the areas of differences in the patient and her sister.

Striking differences in the social networks and social support between these two groups were found. The expectation that psychiatric well-being could be generally related to a more positive profile of personal and social resources received considerable support. Psychiatric disorder was clearly associated with lower levels of perceived social support in the patient with anorexia nervosa. This is in keeping with a growing body of literature regarding social support and psychiatric illness (Rutter, 1978). Particularly striking was evidence suggesting that the absence of a supportive relationship with a best friend may be a particular risk factor associated with affective disturbances in childhood (Hirschfeld & Cross, 1982).

Results of this study suggest that social support and extended social network are associated with better mental health. At this point one may state that data indicate that good mental health with good social support were coexistent. While a causal relationship cannot be rigorously examined in

a cross-sectional design, only anterospective and followup studies could help one resolve this question of cause and effect. Nevertheless, the frequently reported association between adequate social interaction and good mental health (Rutter, 1978) suggests social skill education as part of a therapeutic and preventive strategy in the treatment of all psychiatric disorders, including anorexia nervosa.

The other noteworthy finding was the high incidence of affective disorders in the patients, as opposed to the siblings. Although my sample was small, there did not appear to be a bias operating to explain the above finding. At any rate, because of the reported higher proportion of affective disorders in the patients in my study, as well as in other studies (Crisp, 1965a), the possibility exists that in some cases, the affective illness preceded the anorexia nervosa. Certainly in such coexistent affective disorders and anorexia nervosa, one would recommend vigorous treatment for the affective disorder, including pharmacotherapy. It is conceivable that cure or amelioration of the affective disorder may bring about an improvement in the anorexia as well.

Finally, the data suggest that one should beware of viewing all cases of anorexia nervosa through the narrow lens of a stereotyped family dynamics and mother-child interaction. It appears that the afflicted families fall along a wide, heterogeneous range. Since no single

conceptual formula may be universally applicable in dealing with the anorectic patient and her family, the implication for further study and treatment would be toward encouragement of a continued multidimensional, eclectic approach.

The present findings provide some worthwhile clues regarding the impact of psychosocial factors on the various functioning of the individuals and their family. However, the attributes considered in the present study warrant further investigation to clarify the extent to which they simply mirror or actually mediate vulnerability to psychiatric disorder in children at risk.

#### Limitations of the Study

The following limitations of the study are enumerated for the purpose of enhancing understanding and generalizability of the findings. The sources of possible confounding problems are endemic to research with human subjects at the dissertation level and often beyond the statistical or design control of the study.

1. The sample size is small.
2. The study is cross-sectional, and does not allow for reliable knowledge of the subjects' past mental health history or their prognosis. Only anterospective studies, coupled with repeated followup evaluations may accomplish these goals.
3. No normal control sample was used.

4. Generalizability of the study to other populations is unknown until it can be replicated.
5. Although the instruments in this study are widely utilized in psychosocial research, their validity may not be accepted in all cases.

**APPENDIX A**  
**Letters, Tests, and Consent Forms**





children's hospital  
national medical center

111 MICHIGAN AVENUE, N.W., WASHINGTON, D.C. 20010 • (202) 745-5000

DEPARTMENT OF CHILD HEALTH AND DEVELOPMENT, GEORGE WASHINGTON UNIVERSITY  
CHILD HEALTH CENTER • RESEARCH FOUNDATION OF CHILDREN'S HOSPITAL

August 8, 1984

Eileen S. Cytryn, A.C.S.W.  
9513 Midwood Road  
Silver Spring, MD 20910

RE: CHNMC #875-84-49 "Siblings of Patients with Anorexia Nervosa: An At Risk Population"

Dear Ms. Cytryn:

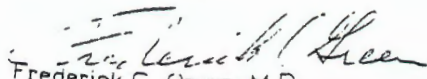
I am pleased to inform you that the above referenced protocol has been approved by the Institutional Review Board (IRB) on the basis of Expedited Review. You are therefore free to begin your study.

Enclosed are copies of the comments of the two reviewers assigned to your protocol. You should pay particular attention to these suggestions and recommendations. Copies of any correspondence related to your response to these suggestions should be filed with my office.

Please be advised that an annual review of your research protocol is a requirement of the Department of Health and Health Services to which the IRB is bound to adhere. It is the investigator's responsibility to submit an annual progress report to the IRB. Approval of your protocol will automatically expire one year from the date of approval unless a report is filed.

Please read the Research Committee Procedure Manual as it relates to the annual progress report and to the investigator's responsibility to report any adverse reaction(s).

Very truly yours,

  
Frederick C. Green, M.D.  
Chairman, IRB

FCG/lab  
naljecexre



children's hospital  
national medical center

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DEPARTMENT OF ADOLESCENT AND YOUNG ADULT MEDICINE

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KATHY A. WOODWARD, M.D.  
OSCAR M. TAUBE, M.D.  
DAVID NAGLE, M.D.

September 13, 1984

Dear Friends:

The Eating Disorders Clinic is pleased to announce a study for patients who are or were treated for anorexia nervosa and their sisters who are free of this disorder. We are recruiting patients and their sisters between the ages of 12-21, with a maximum of three years difference between them. Only one testing session is required, during which time several psychological tests will be administered. The mother of the girls is also asked to complete a parent's rating scale for each of her two daughters.

If the testing results indicate any emotional problems on the part of the sister, both she and her family will be provided with appropriate consultation and recommendations by Mrs. Eileen Cytryn, ACSW, an experienced psychiatric social worker who is conducting this study. Mrs. Cytryn can be reached through the Eating Disorders Clinic or by phoning her directly at 588-8996.

Not only will your participation in this study provide an important contribution to the greater understanding and better treatment of anorexia nervosa, but in addition, may provide possible benefits to you personally.

Your interest and cooperation is most appreciated. Please feel free to contact us at the above stated numbers for further information.

Sincerely,

Tomas J. Silber, M.D.

Director, Adolescent Outpatient Dept.

Parent's Rating Scale of the Child's Actual Competence

PARENTS RATING SCALE OF CHILD'S ACTUAL COMPETENCE

Child's name: \_\_\_\_\_

Please indicate what you feel to be your child's actual competence on each question, in your opinion. First decide which kind of "kid" he or she is like, the one described on the left or right, and then indicate whether this is just sort of true or really true for your child. Thus, for each item, check one of four boxes. If you feel you cannot make a judgment or choose not to, then simply leave that item blank. (If you wish to comment on particular items, or qualify your judgment, feel free to write in any comments or reactions.)

	REALLY TRUE	SORT OF TRUE			REALLY TRUE	SORT OF TRUE	
1.	_____	_____	My child is really good at his/her school work.	OR	My child can't do the school work assigned.	_____	_____
2.	_____	_____	My child finds it hard to make friends.	OR	For my child, its pretty easy.	_____	_____
3.	_____	_____	My child does really well at all kinds of sports.	OR	My child isn't very good when it comes to sports.	_____	_____
4.	_____	_____	My child would be better if s/he changed alot of things about him/herself.	OR	My child is fine the way s/he is.	_____	_____
5.	_____	_____	My child is just as smart as other kids his/her age.	OR	My child isn't as smart.	_____	_____
6.	_____	_____	My child has alot of friends.	OR	My child doesn't have very many friends.	_____	_____
7.	_____	_____	My child could be better at sports.	OR	My child is good enough.	_____	_____

- |     |       |       |   |  |       |       |
|-----|-------|-------|---|--|-------|-------|
| 8.  | _____ | _____ | My child is pretty sure of him/herself.   | My child is not very sure of him/herself.                            | _____ | _____ |
| 9.  | _____ | _____ | My child is pretty slow in finishing his/her school work.                               | My child does his/her school work quickly.                           | _____ | _____ |
| 10. | _____ | _____ | My child could do well at just about any new outdoor activity s/he hasn't tried before. | My child might not do well at outdoor things s/he hasn't ever tried. | _____ | _____ |
| 11. | _____ | _____ | My child isn't a very important member of their class.                                  | My child is pretty important to their classmates.                    | _____ | _____ |
| 12. | _____ | _____ | My child usually acts appropriately.  | My child would be better if s/he acted differently.                  | _____ | _____ |
| 13. | _____ | _____ | My child often forgets what s/he learns.  | My child can remember things easily.                                 | _____ | _____ |
| 14. | _____ | _____ | My child is always doing things with alot of kids.                                      | My child usually does things by him/herself.                         | _____ | _____ |
| 15. | _____ | _____ | My child is better than others his/her age at sports.                                   | My child can't play as well.   | _____ | _____ |
| 16. | _____ | _____ | My child is not a very good person.   | My child is a good person.   | _____ | _____ |
| 17. | _____ | _____ | My child does well in class.  | My child doesn't do very well.                                       | _____ | _____ |

- |     |       |       |   |   |       |       |
|-----|-------|-------|---|---|-------|-------|
| 18. | _____ | _____ | My child isn't liked<br>by very many others.                            | Most children like<br>my child.   | _____ | _____ |
| 19. | _____ | _____ | In games and sports<br>my child usually<br>watches instead of<br>plays. | My child usually<br>plays rather than<br>just watches.                    | _____ | _____ |
| 20. | _____ | _____ | My child is fine the<br>way he is.                                      | My child would be<br>better if s/he were<br>different.                    | _____ | _____ |
| 21. | _____ | _____ | My child has difficulty<br>understanding what s/he<br>reads.            | My child doesn't<br>have any trouble<br>understanding what<br>s/he reads. | _____ | _____ |
| 22. | _____ | _____ | My child is popular<br>with others his/her<br>age.                      | My child is not very<br>popular.  | _____ | _____ |
| 23. | _____ | _____ | My child doesn't do<br>well at new outdoor<br>games.                    | My child is good<br>at new games right<br>away.                           | _____ | _____ |
| 24. | _____ | _____ | My child could do<br>a lot of things better.                            | The way my child<br>does things is fine.                                  | _____ | _____ |
| 25. | _____ | _____ | My child has trouble<br>figuring out the answers<br>in school.          | My child almost always<br>can figure out the<br>answers.                  | _____ | _____ |
| 26. | _____ | _____ | My child is really easy<br>to like.                                     | My child is kind of<br>hard to like.                                      | _____ | _____ |
| 27. | _____ | _____ | My child is among the<br>last to be chosen for<br>games.                | My child is usually<br>picked first.                                      | _____ | _____ |

28. \_\_\_\_\_ My child usually does things right. \_\_\_\_\_ My child usually doesn't do the right things. \_\_\_\_\_

In order to obtain a more global rating of your view of the child's actual competence in each of the three skill areas, please check the appropriate category for each (Intellectual, Social, Physical). If you can't judge, check the final line.

A. How intellectually competent do you feel this child is?

Extremely Competent	Pretty Competent	Not very Competent	Not at all Competent	Can't Judge
_____	_____	_____	_____	_____

B. How socially competent is this child with his or her peers (popular, likeable, etc.)?

Extremely Competent	Pretty Competent	Not very Competent	Not at all Competent	Can't Judge.
_____	_____	_____	_____	_____

C. How physically competent is this child, for example in sports and outdoor games?

Extremely Competent	Pretty Competent	Not very Competent	Not at all Competent	Can't Judge
_____	_____	_____	_____	_____

III. If you would like to qualify any of your ratings in either of the above sections, or have additional remarks or comments, please indicate these below:

Harter's Perceived Self-Competence Scale



## What I Am Like

NAME \_\_\_\_\_ BOY OR GIRL \_\_\_\_\_ AGE \_\_\_\_\_ BIRTHDAY \_\_\_\_\_ CLASS OR GROUP \_\_\_\_\_

Date \_\_\_\_\_

### SAMPLE SENTENCES

- |    | REALLY<br>TRUE<br>for me | SORT OF<br>TRUE<br>for me |  | BUT |  | SORT OF<br>TRUE<br>for me | REALLY<br>TRUE<br>for me |
|----|--------------------------|---------------------------|--|-----|--|---------------------------|--------------------------|
| a. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids would rather play outdoors in their spare time   |     | Other kids would rather watch T.V.   | <input type="checkbox"/>  | <input type="checkbox"/> |
| b. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids never worry about anything   |     | Other kids sometimes worry about certain things.                             | <input type="checkbox"/>  | <input type="checkbox"/> |
|    |                          |                           |  |     |  |                           |                          |
| 1. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids feel that they are very good at their school work  |     | Other kids worry about whether they can do the school work assigned to them. | <input type="checkbox"/>  | <input type="checkbox"/> |
| 2. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids find it hard to make friends   |     | For other kids it's pretty easy.   | <input type="checkbox"/>  | <input type="checkbox"/> |
| 3. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids do very well at all kinds of sports  |     | Others don't feel that they are very good when it comes to sports.           | <input type="checkbox"/>  | <input type="checkbox"/> |
| 4. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids feel that there are alot of things about themselves that they would change if they could |     | Other kids would like to stay pretty much the same.                          | <input type="checkbox"/>  | <input type="checkbox"/> |
| 5. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids feel like they are just as smart as other kids their age                                 |     | Other kids aren't so sure and wonder if they are as smart.                   | <input type="checkbox"/>  | <input type="checkbox"/> |
| 6. | <input type="checkbox"/> | <input type="checkbox"/>  | Some kids have alot of friends   |     | Other kids don't have very many friends.                                     | <input type="checkbox"/>  | <input type="checkbox"/> |

REALLY TRUE <small>for me</small>	SORT OF TRUE <small>for me</small>		BUT		SORT OF TRUE <small>for me</small>	REALLY TRUE <small>for me</small>
7. <input type="checkbox"/>	<input type="checkbox"/>	Some kids wish they could be alot better at sports		Other kids feel they are good enough.	<input type="checkbox"/>	<input type="checkbox"/>
8. <input type="checkbox"/>	<input type="checkbox"/>	Some kids are pretty sure of themselves		Other kids are not very sure of themselves.	<input type="checkbox"/>	<input type="checkbox"/>
9. <input type="checkbox"/>	<input type="checkbox"/>	Some kids are pretty slow in finishing their school work		Other kids can do their school work quickly.	<input type="checkbox"/>	<input type="checkbox"/>
10. <input type="checkbox"/>	<input type="checkbox"/>	Some kids don't think they are a very important member of their class		Other kids think they are pretty important to their classmates.	<input type="checkbox"/>	<input type="checkbox"/>
11. <input type="checkbox"/>	<input type="checkbox"/>	Some kids think they could do well at just about any new outdoor activity they haven't tried before		Other kids are afraid they might not do well at outdoor things they haven't ever tried.	<input type="checkbox"/>	<input type="checkbox"/>
12. <input type="checkbox"/>	<input type="checkbox"/>	Some kids feel good about the way they act		Other kids wish they acted differently.	<input type="checkbox"/>	<input type="checkbox"/>
13. <input type="checkbox"/>	<input type="checkbox"/>	Some kids often forget what they learn		Other kids can remember things easily.	<input type="checkbox"/>	<input type="checkbox"/>
14. <input type="checkbox"/>	<input type="checkbox"/>	Some kids are always doing things with alot of kids		Other kids usually do things by themselves.	<input type="checkbox"/>	<input type="checkbox"/>
15. <input type="checkbox"/>	<input type="checkbox"/>	Some kids feel that they are better than others their age at sports		Other kids don't feel they can play as well.	<input type="checkbox"/>	<input type="checkbox"/>
16. <input type="checkbox"/>	<input type="checkbox"/>	Some kids think that maybe they are not a very good person		Other kids are pretty sure that they are a good person.	<input type="checkbox"/>	<input type="checkbox"/>

	REALLY TRUE for me	SORT OF TRUE for me		BUT		SORT OF TRUE for me	REALLY TRUE for me
17.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids like school because they do well in class		Other kids don't like school because they aren't doing very well.	<input type="checkbox"/>	<input type="checkbox"/>
18.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids wish that more kids liked them		Others feel that most kids do like them.	<input type="checkbox"/>	<input type="checkbox"/>
19.	<input type="checkbox"/>	<input type="checkbox"/>	In games and sports some kids usually watch instead of play		Other kids usually play rather than just watch.	<input type="checkbox"/>	<input type="checkbox"/>
20.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are very happy being the way they are		Other kids wish they were different.	<input type="checkbox"/>	<input type="checkbox"/>
21.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids wish it was easier to understand what they read		Other kids don't have any trouble understanding what they read.	<input type="checkbox"/>	<input type="checkbox"/>
22.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are popular with others their age		Other kids are not very popular.	<input type="checkbox"/>	<input type="checkbox"/>
23.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids don't do well at new outdoor games		Other kids are good at new games right away.	<input type="checkbox"/>	<input type="checkbox"/>
24.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids aren't very happy with the way they do alot of things		Other kids think the way they do things is fine.	<input type="checkbox"/>	<input type="checkbox"/>
25.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids have trouble figuring out the answers in school		Other kids almost always can figure out the answers.	<input type="checkbox"/>	<input type="checkbox"/>
26.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are really easy to like		Other kids are kind of hard to like.	<input type="checkbox"/>	<input type="checkbox"/>

	REALLY TRUE for me	SORT OF TRUE for me				SORT OF TRUE for me	REALLY TRUE for me
27.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are among the last to be chosen for games	BUT	Other kids are usually picked first.	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	Some kids are usually sure that what they are doing is the right thing	BUT	Other kids aren't so sure whether or not they are doing the right thing.	<input type="checkbox"/>	<input type="checkbox"/>

Anxiety-Depression Items from the DISC

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Dx  
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- 1. (7) In the last year have you worried about things before they happened (like going to the doctor, or having a test at school)? 0 1 2  
IF YES, What do you worry about? (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- IF YES, When you worry, do you often ask your parents if things will turn out okay? 0 1 2 (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 2. (9) Do you worry about things you have done, even if other people thought they were okay? 0 1 2  
IF YES, Can you give me an example? 0 2 (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- IF NO, Do you think you do things really well? 0 1 2  
IF YES, Tell me more about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 3. (9) Do you ask the teacher if you are doing okay? 0 1 2
- 4. (10) Do you worry a lot about how good you are at sports? 0 1 2  
IF YES, Do you ask ther people if you are good at sports? 0 1 2  
IF NO, Are you very good at sports? 0 1 2  
IF YES, Tell me more about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 5. (11) Is there anything else you worry about? 0 1 2 (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 6. (13) How old were you when you first started to worry like that? \_\_\_\_\_ MOS.  
(SPECIFY): \_\_\_\_\_ YRS. \_\_\_\_\_
- 7. (56) Do you worry a lot about whether other kids will like you? 0 1 2
- 8. (57) Do you worry about other kids laughing at you? 0 1 2
- 9. (58) Do you worry about making mistakes in front of other people? 0 1 2  
IF YES, Tell me more about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 10. (60) In the last year, have you felt so nervous and uptight that you just couldn't relax? 0 1 2  
IF YES, How often have you felt like that? (SPECIFY): \_\_\_\_\_  
\_\_\_\_\_
- 11. (86) Do you worry about how well you do your schoolwork? 0 1 2
- 12. (219) Do you get a lot of headaches or stomachs? 0 1 2  
IF YES, Have you gone to the doctor about these? 0 2  
IF YES, Did the doctor find anything wrong? 0 2  
IF YES, What was found? (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

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- 13 (37.) Some children worry a great deal about their [parents] being away. Do you worry that something bad might happen to your [parents] (like they may get sick, or get hurt, or die)? 0 1\* 2\*  
IF YES, What do you worry about? (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- 14 (38.) Do you worry that they might go away and not come back? 0 1\* 2\*
- 15 (39.) Do you worry that something bad might happen to you so you couldn't see your [parents] again (like getting kidnapped or killed)? 0 1\* 2\*
- (40.) Do you try to stay home in order to be with your [parents]? 0 1\* 2\*
- (41.) Do you often feel sick when you have to go to school (stomachaches, headaches, sick to your stomach, wanting to throw up)? 0 1\* 2\*  
IF YES, Tell me more about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- (42.) Do you often ask your [parents] to stay close to you so you can go to sleep? 0 1\* 2\*
- (43.) Have you ever spent the night away from home without your [parents]? 0 1\* 2\*  
IF NO, Is that because you were afraid to leave your [parents]? 0 1 2
- (44.) Do you get upset and worried when you go away from home? 0 1\* 2\*  
IF YES, When that happens, do you want to go home right away? 0 1\* 2\*
- (45.) Would you get upset if you were home by yourself for more than a short time? 0 1\* 2\*
- (46.) At home, do you get upset if you can't stay in the same room with your [parents] (or stay close to them)? 0 1\* 2\*
- (47.) Do you often have bad dreams about being away from your [parents]? 0 1\* 2\*  
IF YES, Can you give me an example? (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
- (48.) Suppose your [parents] were going somewhere without you. Would you be unhappy without them? 0 1\* 2\*  
IF YES, Would you try to get them to stay home? 0 1\* 2\*  
IF YES, Would you get upset? 0 1\* 2\*  
IF YES, Would you get mad? 0 1\* 2\*  
IF YES, Would you cry? 0 1\* 2\*
- (49.) When you are not around your [parents], do you feel sad? 0 1\* 2\*  
IF YES, Do you feel so sad that you have trouble doing your schoolwork or playing? 0 1\* 2\*  
IF YES, Does that sad feeling go away as soon as you can be with your [parents] again? 0 1\* 2\*

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26. (50) You told me that you have worries about your [parents]. How long have you worried like that? (SPECIFY): (2 WKS.) \_\_\_\_\_

27. (87) Do you ever try to stay home from school? 0 1 2  
IF YES, Is that because you are afraid of going to school? 0 1 2  
IF YES, Is that because you worry about what might happen to someone at home when you are not there? 0 1 2

28. (100) Have you ever felt so sad or unhappy you couldn't keep your mind on your work? 0 1 2

29. (141) Sad? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

30. (142) Down in the dumps? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

31. (143) Hopeless? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

32. (144) Low? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

33. (145) Moody? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

34. 146. Very unhappy? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

35. 147. Feel like crying? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_



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- 36 (148) Miserable? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
27. (149) Irritable or grumpy? 0 1 2  
IF YES, Tell me about when you felt like that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_
3. (151) Think about the times when you feel (SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/  
UNHAPPY/MISERABLE/LIKE CRYING/IRRITABLE OR GRUMPY/ETC.) Does it last a whole  
day? 0 1\* 2\*
4. (152) Do you feel (SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/UNHAPPY/MISERABLE/LIKE  
CRYING/IRRITABLE OR GRUMPY/ETC.) most days? 0 1\* 2\*  
IF YES, How long have you felt like that?  
(SPECIFY): (2 WKS.) \_\_\_\_\_
5. (153) Have you felt (SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/UNHAPPY/CRYING/  
IRRITABLE OR GRUMPY/ETC.) in the last year? 0 1\* 2\*  
IF YES, How long did it last?  
(SPECIFY): (2 WKS.) \_\_\_\_\_
6. (154) Do you feel (SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/UNHAPPY/MISERABLE/LIKE  
CRYING/IRRITABLE OR GRUMPY/ETC.) like that even when you're at home with your  
[parents]? 0 1 2
7. (155) Do you enjoy anything at all? 0\* 1 2
8. (156) Do you enjoy things as much as you always did? 0\* 1\* 2
9. (157) When you feel (SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/UNHAPPY/MISERABLE/  
LIKE CRYING/IRRITABLE OR GRUMPY/ETC.) do you get less hungry? 0 1\* 2\*  
IF YES, How long have you been less hungry?  
(SPECIFY): (2 WKS.) \_\_\_\_\_  
Tell me about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
10. (158) Have you lost weight without trying? 0 1\* 2\*  
IF YES, Have you lost so much weight that your clothes feel  
loose or too big? 0 1 2  
IF YES, Did you go to a doctor because you were losing weight? 0 2  
IF YES, Did the doctor find any physical reason for your  
weight loss? 0 2  
IF YES, (DESCRIBE): (Look for physical reason)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- IF NO, Are you eating more than usual? 0 1\* 2\*  
IF YES, How long have you been eating more?  
(SPECIFY): \_\_\_\_\_

46. 160. Do you often get bored? 0 1\* 2\*  
 IF YES, Do you feel bored all the time? 0 1 2  
 IF YES, Do you feel you just don't care about anything? 0 1 2  
 IF YES, How long have you been feeling bored? (SPECIFY): (MOS.) \_\_\_\_\_
47. 161. Have you felt so tired that you just sit around and do nothing? 0 1\* 2\*  
 IF YES, How long have you been feeling tired? (SPECIFY): (MOS.) \_\_\_\_\_  
 IF YES, Was that because you were ill? 0 1 2  
 IF NO, Was that because you had been doing a lot? 0 1 2
48. 162. Do you feel that you're no good anymore? 0 1\* 2\*
49. 164. Do you sometimes blame yourself for something that isn't your fault? 0 1\* 2\*
50. 165. Is it hard for you to make up your mind? 0 1 2  
 IF YES, Have you always been like that? 0 1\* 2  
 IF NO, How long have you been like that? \_\_\_\_\_
51. 169. Will the future be good for you? 0 1 2  
 IF NO, Do you think that life is hopeless? 0 1\* 2\*  
 IF NO, Do you think that there is nothing good for you in the future? 0 1\* 2\*  
 IF NO, How long have you thought that? (SPECIFY): (MOS.) \_\_\_\_\_
52. 171. Do you think that life isn't worth living? 0 1\* 2\*
53. 172. Sometimes when kids are upset, they think about dying. Do you think about death or dying? 0 1\* 2\*
54. 173. Do you sometimes think that your family would be better off without you? 0 1\* 2\*  
 IF YES, How long have you thought that? (SPECIFY): (MOS.) \_\_\_\_\_
55. 174. Have you thought about killing yourself? 0 1 2  
 IF YES, When was that? (SPECIFY): \_\_\_\_\_  
 IF YES, What did you think of doing? (DESCRIBE): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
56. 175. Have you ever tried to kill yourself? 0 1 2  
 IF YES, Did you try more than once? 0 1 2  
 IF YES, When was that? (SPECIFY): \_\_\_\_\_  
 IF YES, How did you try to kill yourself? (DESCRIBE): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

IF ANY RESPONSES WITH \* FOR ITEMS 150-175 WERE CIRCLED, THEN ASK . . .

57. 175. • When you felt like that [SAD/DOWN IN THE DUMPS/HOPELESS/LOW/MOODY/VERY UNHAPPY/FEEL LIKE CRYING/MISERABLE/IRRITABLE OR GRUMPY], did you stop seeing your friends? 0 1 2
58. 177. • When you felt like that, did you find it hard to think properly or concentrate? 0 1 2

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(178)

Was there any change in how well you did your schoolwork? 0 1 2  
IF YES, Did it get worse? 0 1 2  
IF NO, Did it get better? 0 1 2

(179)

Lots of kids (FEEL SAD/CAN'T HAVE ANY FUN/FEEL BORED) sometimes. Have you felt like that a lot? 0 1 2  
IF YES, Did you only feel like that after you had lost someone close to you (died, moved away)? 0 1 2  
IF YES, How long have you had these feelings?  
(SPECIFY): (2/14/24 WKS.) \_\_\_\_\_

(231)

Does it take a lot longer than usual to fall asleep? 0 1 2  
IF YES, When did that start? (SPECIFY):  
(2 WKS.) \_\_\_\_\_

(232)

Do you often wake up in the middle of the night and take a long time to get back to sleep? 0 1 2  
IF YES, When did that start? (SPECIFY):  
(2 WKS.) \_\_\_\_\_

(233)

Do you often wake up as much as an hour before you have to? 0 1 2  
IF YES, Do you feel like sleeping more then but just can't fall asleep again? 0 1 2  
IF YES, When did that start? (SPECIFY):  
(2 WKS.) \_\_\_\_\_

(234)

Do you sleep a lot more than you used to? 0 1 2  
IF YES, Do you also sleep a lot more in the daytime? 0 1 2  
IF YES, When did that start? (SPECIFY):  
(2 WKS.) \_\_\_\_\_

(166)

Have you felt grumpy and cranky with your [parents]? 0 1\* 2\*  
Tell me more about that. (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_

IF YES, How long have you felt like that? (SPECIFY): (MOS.) \_\_\_\_\_

(167)

Do you feel like talking less than usual? 0 1\* 2\*  
IF YES, How long have you felt like that? (SPECIFY): (MOS.) \_\_\_\_\_

(168)

Do you cry a lot? 0 1\* 2\*  
IF YES, Is that only when you get hurt (like falling down)? 0 1 2  
IF NO, How long have you done that? (SPECIFY): (MOS.) \_\_\_\_\_

(170)

What do you think will happen to you in the future? (DESCRIBE): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Anxiety Depression Coding according to DSM III categories

## Major Affective Disorders:..

## Depressive:

141  
142  
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## Dysthymic or Depressive Neurosis

8

141

142

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## Anxiety

## Separation Anxiety Disorder:

37  
38  
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42  
43  
44  
45  
46  
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48  
49  
50  
87

## Overanxious Disorder:

7  
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9  
10  
11  
13  
56  
57  
58  
60  
86  
219

## Cyclothymic

8  
141 171  
142 172  
143 173  
144 174  
145 175  
146 178  
147 179  
148 231  
149 232  
155 233  
156 234  
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Nowicki-Strickland Locus of Control Scale

A LOCUS OF CONTROL SCALE FOR CHILDREN\*

<u>ITEM</u>	Yes	No
1. Do you believe that most problems will solve themselves if you just don't fool with them?	Yes	No
2. Do you believe that you can stop yourself from catching a cold?	Yes	No
3. Are some kids just born lucky?	Yes	No
4. Most of the time do you feel that getting good grades means a great deal to you?	Yes	No
5. Are you often blamed for things that just aren't your fault?	Yes	No
6. Do you believe that if somebody studies hard enough he or she can pass any subject?	Yes	No
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	Yes	No
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	Yes	No
9. Do you feel that most of the time parents listen to what their children have to say?	Yes	No
10. Do you believe that wishing can make good things happen?	Yes	No
11. When you get punished does it usually seem it's for no good reason at all?	Yes	No
12. Most of the time do you find it hard to change a friend's (mind) opinion?	Yes	No
13. Do you think that cheering more than luck helps a team to win?	Yes	No
14. Do you feel that it's nearly impossible to change your parent's mind about anything?	Yes	No
15. Do you believe that your parents should allow you to make most of your own decisions?	Yes	No
16. Do you feel that when you do something wrong there's very little you can do to make it right?	Yes	No
17. Do you believe that most kids are just born good at sports?	Yes	No
18. Are most of the other kids your age stronger than you are?	Yes	No
19. Do you feel that one of the best ways to handle most problems is just not to think about them?	Yes	No
20. Do you feel that you have a lot of choice in deciding who your friends are?	Yes	No



-2-

- |     |  |     |    |
|-----|--|-----|----|
| 21. | If you find a four leaf clover do you believe that it might bring you good luck?   | Yes | No |
| 22. | Do you often feel that whether you do your homework has much to do with what kind of grades you get?                             | Yes | No |
| 23. | Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?                           | Yes | No |
| 24. | Have you ever had a good luck charm?   | Yes | No |
| 25. | Do you believe that whether or not people like you depends on how you act?   | Yes | No |
| 26. | Will your parents usually help you if you ask them to?   | Yes | No |
| 27. | Have you felt that when people were mean to you it was usually for no reason at all?   | Yes | No |
| 28. | Most of the time, do you feel that you can change what might happen tomorrow by what you do today?                               | Yes | No |
| 29. | Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them? | Yes | No |
| 30. | Do you think that kids can get their own way if they just keep trying?   | Yes | No |
| 31. | Most of the time do you find it useless to try to get your own way at home?  | Yes | No |
| 32. | Do you feel that when good things happen they happen because of hard work?   | Yes | No |
| 33. | Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?                      | Yes | No |
| 34. | Do you feel that it's easy to get friends to do what you want them to?   | Yes | No |
| 35. | Do you usually feel that you have little to say about what you get to eat at home?   | Yes | No |
| 36. | Do you feel that when someone doesn't like you there's little you can do about it?   | Yes | No |
| 37. | Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?   | Yes | No |
| 38. | Are you the kind of person who believes that planning ahead makes things turn out better?  | Yes | No |
| 39. | Most of the time, do you feel that you have little to say about what your family decides to do?                                  | Yes | No |
| 40. | Do you think it's better to be smart than to be lucky?   | Yes | No |

\* Nowicki, S.Jr., and Strickland, B.R. A locus of control scale for children. J. of Consulting & Clinical Psychol., 1973, 40, 148-154.

CHILD SOCIAL NETWORK MEASURE

CHILD INTERVIEW FORMAT

DAVID S. PELLEGRINI, PH.D.

- THE CATHOLIC UNIVERSITY OF AMERICA

DEPARTMENT OF PSYCHOLOGY

JULY, 1982

## A) FAMILY/HOUSEHOLD

- 1) Can you tell me who lives in your house?
- 2) Is there anyone else in your family (e.g., brother, sister, father) who doesn't live with you right now?

Do you ever see him/her? Do you talk on the phone together or write letters? How often?

Does he/she come to visit you in your home?

Do you go to visit him/her where he/she is living?

Where else do you see him/her? Has he/she taken you out on any special activity in the past year? (e.g., movie, museum, zoo, sporting event)

Do you ever talk on the phone together or write letters to each other?

So how often have you seen or heard from him/her over this past school year?

Is that a change since previous school years? Do you see and talk to each other more or less than before, or is it about the same?

(If there has been a change:) Why is that? (Obtain dates.)

## B) PEERS

- 3) Do you have a best friend? Someone you like to be with and talk to more than anybody else, and who feels the same way about you? Who would that be?
- 4) Do you have a "pen pal" or a friend who lives too far away to see? (e.g., a friend who used to live nearby but moved?) Have you written or spoken on the phone together this past school year?

5) (If 12 or older:)

Do you ever go to dances or parties where both boys and girls are present?

(For girls:) Do you ever go out with another girl and a couple of boys, or meet a group of boys and girls at night?

Do you ever go out with a boy alone?

Do you have a special boyfriend? When was the last time you went out alone together?

When did you first start going out alone with boys?

(For boys:) Do you ever go out with another boy and a couple of girls, or meet a group of boys and girls at night?

Do you ever go out with a girl alone?

Do you have a special girlfriend? When was the last time you went out alone together?

When did you first start going out alone with girls?

- 6) Are there other kids whom you especially like to play/spend time with, and talk to? Maybe someone at school, or someone you see around the neighborhood, or at a club you belong to?

(If more than 3 children are mentioned:)

What I'd like you to do is think about all those kids you've mentioned. After your best friend (and after your boy/girlfriend --if child has one), who would you say are the 3 most important kids to you?

- 7) Let's go over each one of your good friends (i.e., best friend, pen pal, friend who no longer lives nearby, boy/girl friend, and other friends to a maximum of 3):

(a) How often do you usually see or talk with or write to...

(b) How long have you been friends with...

(c) Does he/she ever come by to visit with you at your house? In the past school year?

(d) Do you talk on the phone together or write letters to each other?

(e) Where else do you see each other?

Are you school mates?

Club, sports team, job?

8) Do you think you've spent

(1) less time

(2) about the same, or

(3) more time

with friends this school year than you have in the past?

9) Could you tell me more about that? Why? (Obtain dates.)

What are the dates?

For example, I saw him on the 1st of the month.

What are the dates?

For example, I saw him on the 1st of the month.

What are the dates?

For example, I saw him on the 1st of the month.

What are the dates?

For example, I saw him on the 1st of the month.

What are the dates?

For example, I saw him on the 1st of the month.

What are the dates?

For example, I saw him on the 1st of the month.

## C) RELATIVES AND NON-KIN ADULTS

- 10) Do you have any relatives whom you are especially close to, whom you really like to see and talk to? (e.g., grandparent, aunt, uncle, cousin)

Do you talk to any of them about personal matters, about what you think and feel?

(If more than 5 relatives are mentioned:)

Think about all those relatives whom you've mentioned. Who are the 5 most important ones to you, do you think? The 5 whom you feel closest to?

- 11) Are there any other adults who are not related to you, but whom you like to see and talk to? Someone who is special to you?  
Like a teacher, or a neighbor, or maybe someone who is a friend of your parents?
- 12) Let's go over each one of them:
- (a) How often do you usually see or talk to or write to...
- (b) (For non-kin adults:) How long have you been close to...
- (c) Has he/she ever come by to visit with you or your family at your house?  
In the past school year?
- (d) (For relatives and others who also have relationship with parents:)  
When he/she calls your house, does he/she make a special point of talking to you on the phone? Or do you call him/her? Do you ever exchange letters? In the past school year?
- (For everyone else:) Do you ever talk on the phone together or write to each other?
- (e) Where else do you see each other? Has he/she ever taken you out on a special activity in the past school year? (e.g., movie, museum, zoo, sporting event)
- (f) Do you think you've spent
- (1) less time  
(2) about the same, or  
(3) more time
- with relatives or with other adults this school year than you have in the past?
- (If change:) Can you tell me about that? Why? (Obtain dates.)

## D) RELIGIOUS

13) Do you go to church/synagogue? How often do you go?

- (1) not at all in the past year
- (2) only on special days (e.g., Christmas, Passover)
- (3) every month
- (4) every week
- (5) more than once a week

14) Do you have any special job at church/synagogue? (alter boy, reader, perform in the choir)? How often do you do that? Have you ever?

15) Are you going

- (1) less than you have in the past,
- (2) about the same amount, or
- (3) more than in the past?

16) (If increase or decrease:) Can you tell me more about how things have changed? Why? (Obtain dates.)

## E) SOCIAL GROUPS AND CLUBS

- 17) Do you belong to any club or group (e.g., Boy/Girl Scouts)? Have you ever?
- 18) Do you belong to a school or neighborhood sports team? Have you ever?
- 19) Do you have a neighborhood recreation center that you like to go to?
- 20) (For each group:)  
How often do you go to meetings or get-togethers?
- 21) When did you first become a member of ...?
- 22) Do you have any special job (e.g., club president, team captain, treasurer)? Have you ever? When?
- 23) Do you spend
  - (1) less time,
  - (2) about the same, or
  - (3) more timewith clubs or groups recently than you have in the past?
- 24) (If increase or decrease:) Can you tell me more about how things have changed? Why? (Obtain dates.)



## F) SUPPORT

- 25) Everybody has a problem or a worry at some time or another. Sometimes, it makes us feel better if we have someone else to tell our problem or worry to.

Let's say you were having a problem getting along with someone at school. Has there ever been someone who teased you a lot and made you feel bad?

Imagine that someone was teasing you all the time and you were feeling worse and worse. Can you imagine that?

If you wanted to feel better, is there anyone you could share your worry with, who would really understand?

(If yes:) Who's the first person you'd probably go to, to feel better about being teased by another kid?

Who would you go to next, of all the people that you know (if anyone)? Try to imagine it.

Is there anyone after that?

(If no:) Why not?

- 26) Let's say you got into trouble for doing something wrong. Let's say a neighbor was all steamed up about something you did, or the police caught you at something. Has anything like that ever happened to you?

Imagine that you're in trouble and you're getting more and more worried. If you wanted to feel better, is there anyone you could share that worry with, someone who'd really understand?

(If yes:) Who's the first person you'd probably go to, to feel better about getting into trouble?

Who would you go to next (if anyone)? Is there anyone else after that?

(If no:) Why not?

- 27) What about if your mother was so sick that she had to go into the hospital for awhile? Is there anyone you could talk to about that, to feel better? Someone who would really understand?

(If yes:) If you wanted to feel better, who would you go to first, who would you talk to about your worries?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

- 28) What about if it was your father who was sick and had to go into the hospital? Would there be anyone you could share your worries with then? Someone who would really understand?

(If yes:) If you wanted to feel better, who would you go to first, who would you talk to about your worries?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

- 29) Sometimes when you're having a problem, other people have good ideas for things to do. They can give you advice. Or, they can do something to straighten things out. Like they can loan you something you need.

Let's go back to the problem of always being teased. Is there anyone you could go to for help? Like advice, or to settle the problem?

(If yes:) Who would you go to first for help with a teasing problem like this?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

- 30) What about the problem of being in trouble? Is there anyone you could go to for help with that problem? Someone who could give you advice, or straighten things out?

(If yes:) Who would you go to for help with being in trouble? Of all the people you know?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

- 31) Who could you go to for advice, or help with things, if your mother went into the hospital? Is there anyone?

(If yes:) Who would you go to first for help?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

32) How about if your father went into the hospital? Is there anyone?

(If yes:) Who would you go to first for help?

Who would you go to next (if anyone)?

Is there anyone after that?

(If no:) Why not?

33) OK, when you think of everyone you know---your family, your friends, grown-ups/adults---is there anyone else you go to, to talk to when you're upset or worried about something? Who else makes you feel better?

Is there anyone else who helps you out, gives you advice, or loans you things when you need them?

34) When you think about all the people that you go to, to share your feelings and to get help or advice, is there anyone who often makes things much worse for you than they were to begin with? (Assign effectiveness score of 1 to such figures.)

Is there anyone who usually makes things much better for you? (Assign effectiveness score of 2.)

35) Of all your friends, family and grown-ups/adults you know, who comes to you when they feel worried or upset and need someone to understand? Who comes to you to feel better? Anyone?

Who comes to you for ideas about what to do, or for help with problems?

36) Do you think you have

- (1) less people,
- (2) about the same, or
- (3) more people

whom you can depend on this year, to understand your feelings and to help you out?

37) (If increase or decrease:) Can you tell me about how things have changed? Why? (Obtain dates.)

INTERVIEW  
FORMAT

SOCIAL NETWORK RECORDING FORM  
FOR INDIVIDUALS

RECIPROCITY	
EFFECTIVENESS	
ADVICE/HELP	F ILL
	M ILL
	TRUBL
	SCHL
CONFIDE	F ILL
	M ILL
	TRUBL
	SCHL
DURATION	
CONTACT FREQ	
CONTACT RANGE	OTHER
	WORK
	PHONE/LETT.
	SCHOOL
	NEIGHBD
	VISIT
RESIDE	
AGE	
NUMBER	
RELATION CODE	
GENDER	

SI \_\_\_\_\_  
 PI \_\_\_\_\_

SOCIAL NETWORK RECORDING FORM  
 FOR GROUPS

INTERVIEW  
 FORMAT \_\_\_\_\_

TYPE CODE	NUMBER	SPECIAL ROLE	CONTACT FREQ	DURATION

CONTACT CHANGE SCORES:

- 1. PEERS \_\_\_\_\_
- 2. RELATIVES \_\_\_\_\_
- 3. NON-KIN ADULTS \_\_\_\_\_
- 4. RELIGIOUS \_\_\_\_\_
- 5. GROUPS \_\_\_\_\_
- 6. SUPPORT \_\_\_\_\_

PERSONAL RELATIONSHIP CODES

<u>KIN</u>	<u>NON-KIN ADULTS</u>	<u>PEERS</u>
1. Mother	9. Parent surrogate	15. Best friend
2. Father	10. Parent's mate	16. Friend
3. Step-parent	11. Boss	17. Boy/girl friend
4. Adoptive parent	12. Teacher / Principal	18. Co-worker
5. Grandparent	13. Counselor/Therapist	19. Pen-pal/phone only
6. Sib	14. Other adult	
7. Step-sib/foster sib		
8. Other relative		

GROUP RELATIONSHIP CODES

1. Religious affiliation (worship oriented group: e.g., seminary, mormon primary group)
2. Social club (e.g., JCC, Mormon Youth Group)
3. Activity/hobby club (e.g., boy scouts, photo club)
4. Athletic club
5. Informal group setting (e.g., neighborhood center)
6. Other

FREQUENCY OF CONTACT CODES

1. Once/year maximum
2. Few times/year
3. Once/month
4. Once/week
5. Few times/week
6. Daily
7. Seasonal: less than once/week
8. Seasonal: once/week or more
9. Seasonal: daily during school year  
and once/week or more during summer
10. Seasonal: daily during school year  
but no contact during summer
11. Seasonal: summer & holidays only  
(e.g., sib away at college)
12. Seasonal: daily during summer &  
occasional during school year)

DURATION CODES

1. Less than 1 month
2. 1-6 months
3. 6 months-year
4. 1-3 years
5. 3-5 years
6. 5-10 years
7. 10 years or more
8. Lifetime

Family Adaptability and Cohesion Scales (FACES)

# FACES II ITEMS

by  
David H. Olson, Joyce Portner, and Richard Bell

1. Family members are supportive of each other during difficult times.
2. In our family, it is easy for everyone to express his/her opinion.
3. It is easier to discuss problems with people outside the family than with other family members.
4. Each family members has input in major family decisions.
5. Our family gathers together in the same room.
6. Children have a say in their discipline.
7. Our family does things together.
8. Family members discuss problems and feel good about the solutions.
9. In our family, everyone goes his/her own way.
10. We shift household responsibilities from person to person.
11. Family members know each other's close friends.
12. It is hard to know what the rules are in our family.
13. Family members consult other family members on their decisions.
14. Family members say what they want.
15. We have difficulty thinking of things to do as a family.
16. In solving problems, the children's suggestions are followed.
17. Family members feel very close to each other.
18. Discipline is fair in our family.
19. Family members feel closer to people outside the family than to other family members.
20. Our family tries new ways of dealing with problems.
21. Family members go along with what the family decides to do.
22. In our family, everyone shares responsibilities.
23. Family members like to spend their free time with each other.
24. It is difficult to get a rule changed in our family.
25. Family membes avoid each other at home.
26. When problems arise, we compromise.
27. We approve of each other's friends.
28. Family members are afraid to say what is on their minds.
29. Family members pair up rather than do things as a total family.
30. Family members share interests and hobbies with each other.



Family Social Science  
University of Minnesota  
297 McNeal Hall  
St. Paul, Minnesota 55108



# FACES II ANSWER SHEET

**UM** Family Social Science  
University of Minnesota  
290 McNeal Hall  
St. Paul, Minnesota 55108

**INSTRUCTIONS:** Complete Part I completely, and then complete Part II. Please answer all questions, using the following scale.

1
2
3
4
5  
 ALMOST NEVER      ONCE IN A WHILE      SOMETIMES      FREQUENTLY      ALMOST ALWAYS

**PART I:**

**PART II:**

How Would You Describe Your Family Now?

- |           |           |
|-----------|-----------|
| 1. _____  | 2. _____  |
| 3. _____  | 4. _____  |
| 5. _____  | 6. _____  |
| 7. _____  | 8. _____  |
| 9. _____  | 10. _____ |
| 11. _____ | 12. _____ |
| 13. _____ | 14. _____ |
| 15. _____ | 16. _____ |
| 17. _____ | 18. _____ |
| 19. _____ | 20. _____ |
| 21. _____ | 22. _____ |
| 23. _____ | 24. _____ |
| 25. _____ | 26. _____ |
| 27. _____ | 28. _____ |
| 29. _____ |           |
| 30. _____ |           |

How Would You Like Your Family TO BE?

- |           |           |
|-----------|-----------|
| 31. _____ | 32. _____ |
| 33. _____ | 34. _____ |
| 35. _____ | 36. _____ |
| 37. _____ | 38. _____ |
| 39. _____ | 40. _____ |
| 41. _____ | 42. _____ |
| 43. _____ | 44. _____ |
| 45. _____ | 46. _____ |
| 47. _____ | 48. _____ |
| 49. _____ | 50. _____ |
| 51. _____ | 52. _____ |
| 53. _____ | 54. _____ |
| 55. _____ | 56. _____ |
| 57. _____ | 58. _____ |
| 59. _____ |           |
| 60. _____ |           |

36 +  
 - Sum 3, 9, 15, 19, 25, 29  
 + Sum all other odd numbers plus item 30  
 TOTAL COHESION

12 +  
 - Sum 24 & 28  
 + Sum all other even numbers except item 30  
 TOTAL ADAPTABILITY

36 +  
 - Sum 3, 9, 15, 19, 25, 29  
 + Sum all other odd numbers plus item 30  
 TOTAL COHESION

12 +  
 - Sum 24 & 28  
 + Sum all other even numbers except item 30  
 TOTAL ADAPTABILITY

Consent Forms

CHILDREN'S HOSPITAL NATIONAL MEDICAL CENTER

INVESTIGATOR: Eileen S. Cytryn, A.C.S.W.

ANOREXIA NERVOSA STUDY

CHILDREN'S CONSENT FORM

In order to better help individuals with anorexia nervosa, I would like to know more about how they and their other family members feel about themselves, their friends and their families.

I believe that this knowledge would enable doctors and other mental health workers to help children with this disorder more effectively.

You are being asked to volunteer to be a part of this study. If you volunteer, you will be tested by a psychologist. These tests will take about two hours to answer.

You will be asked how you feel about yourself, and about your family, and your friends. You will also be asked questions that relate to your emotional health.

These same tests were given to many others in the United States and other countries. There has never been any report of problem related to taking these psychological tests.

By volunteering to be part of this study, you will be helping many children with anorexia nervosa. If you should decide, once you have started this study, that you wish to change your mind and withdraw from this activity, it will not affect how you or your sister are treated.

Mrs. Eileen Cytryn will be happy to answer any questions you may have about this study. She may be contacted through the Eating Disorder Clinic, Children's Hospital.

By signing this form, you acknowledge that you have read the attached information and you agree with the part which you will play in this study. You have had your questions answered and give your consent freely without pressure for you to participate.

---

Signature of Patient

---

Date

---

Signature of Sister

---

Date

---

Signature of Mother

---

Date

---

Signature of Witness

---

Date

CHILDREN'S HOSPITAL NATIONAL MEDICAL CENTER  
RESEARCH CONSENT FORM

INVESTIGATOR: EILEEN S. CYTRYN, A.C.S.W.

TITLE OF PROTOCOL:

SIBLINGS OF PATIENTS WITH ANOREXIA NERVOSA, AN  
"AT RISK" POPULATION: A STUDY OF THEIR COMPETENCE  
AND VULNERABILITIES.

I am conducting a study to compare the differences in the emotional and social adjustment between sisters, one of whom is diagnosed as having anorexia nervosa and the other who is free of this illness. You, their mother, and your two daughters are invited to participate in my project dealing with this study. The consent form follows.

---

I hereby agree to allow my daughters and myself to be subject in the following research project: siblings of patients with anorexia nervosa.

I understand that the project will include the following procedures:  
I will be asked to fill in a Parent's Rating Scale of Child Abilities; one for each of my two daughters.

Each of my two daughters will be given five psychological tests to measure the following factors related to their development: self esteem, social relationships, family adjustment and emotional health.

I understand that there is no risk involved in participating in this research project. I also understand that the possible benefits of this project are understanding better ways to help individuals with anorexia nervosa

I understand that, as far as the law allows, the research records on my daughters will be kept confidential. In the event that these findings are used for professional purposes in a professional setting, my permission will be specifically requested.

I have been given a chance to ask questions and know that I may do so at any time. Mrs. Eileen Cytryn is responsible for the study, and she may be contacted through the Eating Disorders Clinic of the Children's Hospital. I know that I am not required to allow my daughters to take part in this project. If at any time I wish to withdraw my daughters from this study, Children's Hospital will continue to treat my daughter who is anorexic just as if she had not been in this study.

I understand that this research has been reviewed by the Research committee of the hospital, which is an independent committee composed of Children's Hospital physicians, staff, and members of the community. The committee has evaluated the potential risks and possible benefits of this study, and has approved the solicitation of participants.

I have read this Consent Form. I understand that I must be given a copy of it. I freely choose to allow my children (daughters) to participate in this project.

PATIENT'S NAME \_\_\_\_\_ CHART NO. \_\_\_\_\_

SISTER'S NAME \_\_\_\_\_ CHART NO. \_\_\_\_\_

MOTHER'S NAME \_\_\_\_\_  
(please print)

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

WITNESS'S NAME \_\_\_\_\_

SIGNATURE \_\_\_\_\_

RELATIONSHIP OF WITNESS TO PATIENT \_\_\_\_\_

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