National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Service
Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ MICROFILMÉE TELLE QUE NOUS L'AVONS REÇUE

NL-339 (r.86/06)

Canada

THE UNIVERSITY OF ALBERTA

FAMILY INTERACTION ANALYSIS AND ADOLESCENT DIABETIC MANAGEMENT

BY

DIXIE L. LEHMAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF SCIENCE
IN
FAMILY STUDIES
Faculty OF HOME ECONOMICS

EDMONTON, ALBERTA

FALL 1986

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-32316-7

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR: Dixie L. Lehman

TITLE OF THESIS: Family Interaction Analysis and
Adolescent Diabetic Management

DEGREE: Master of Science

YEAR THIS DEGREE GRANTED: Fall 1986

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

Dixie Lehman
(Student's signature)

Box 387
(Student's permanent address)
High Prairie, AB. T0G 1E0

Date: 10/14/86

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled Family Interaction Analysis and Adolescent Diabetic Management

submitted by Dixie L. Lehman

in partial fulfilment of the requirements for the degree

of Master of Science

in Family Studies

Dianne K Kieren

Supervisor

N. Keating

Date: October 10, 1986

DEDICATED

This paper is dedicated to my beloved husband, Victor Lehman, who faithfully typed and edited the entire manuscript on the Macintosh in his precious free time.

ABSTRACT

Of all diabetics, adolescent diabetics have the most problems maintaining adequate management of the disease. Yet, there are adolescents who are able to achieve good diabetic management. Only recently has research started to identify the factors which contribute to achievement of diabetic management for adolescents.

Since the management of diabetes involves the entire family, the family interaction patterns are important. The following research question provided the focus for the present study: What is the relationship between family interaction patterns and selected diabetic management issues in well functioning families with an adolescent who has well controlled diabetes?

The present study utilized a portion of the data from a larger study by Kieren and Hurlbut (1985). Additional methods and analyses were employed, however, utilizing the data set. Beavers Systems Model was the theoretical framework that guided the research. Family interaction was measured by the Beavers-Timberlawn Family

Evaluation Scale. Diabetic management was measured by a scale entitled: Lehman: Management of Diabetes, that was added to the Beavers scale; the Diabetic Adjustment Scale (Sullivan, [illegible] 1979b); and a diabetic control question.

Data were collected from five families, each of which had an adolescent diabetic member. These families were given the written diabetic measures and were videotaped doing a problem solving task. The videotaped problem solving task was coded for family interaction patterns by trained marriage and family therapists, using the Beavers-Timberlawn Family Evaluation Scale.

Several hypotheses positing a positive relationship between family interaction and diabetic management were generated from this exploratory study. Variability was evident among this group of healthy families, supporting Lewis et al.'s (1976) view that no single pattern describes effective functioning in families. Of the diabetic management measures used, the adolescent's perception of his/her level of metabolic control was a less consistent measure of management, than the other two measures.

Acknowledgement

In doing this research project, I owe much to the capable mentoring of Dianne Kieren. She has been a good model to me personally. As we worked on this project, she seemed to know when to "kick me" and when to affirm me. To her, I am greatly indebted.

TABLE OF CONTENTS

CHAPTER PAGE

I. STATEMENT OF THE PROBLEM 1

Introduction 1

Rationale for the Study 1

Definition of Terms 6

Delimitations 8

Research Questions 8

II. CONCEPTUAL FRAMEWORK 9

The Beavers Systems Model 11

Family Interaction and Diabetic Management 14

Definitions 16

III. LITERATURE REVIEW 21

Family Interaction and Chronic Illness 22

Factors Influencing Poor Management of Adolescent Diabetes 28

Factors Influencing Good Management of Adolescent Diabetes.. 32

IV. RESEARCH PLAN AND METHODS.................................. 35

Introduction.. 35

Research Instrumentation.. 38

Training of Coders.. 45

Procedures.. 53

Interaction Coding.. 61

V. RESULTS.. 63

Healthy Family Validation Data.......................... 64

Data Analysis.. 65

VI. DISCUSSION AND SUGGESTIONS FOR FUTURE RESEARCH.. 101

Discussion of Key Findings.................................. 101

The Relationship Between Family Interaction and Diabetic Management............ 108

Methodological Issues.. 114

Recommendations for Future Research.......... 118

REFERENCES.. 122

APPENDIX A RESEARCH INSTRUMENTATION............ 130

Beavers-Timberlawn Family Evaluation Scale.. 131

Revealed Difference Technique................................. 138

Diabetic Adjustment Scale.. 144

Diabetic Control Question... 150

Letter to Sample.. 151

Copyright Permission.. 152

APPENDIX B TRAINING MANUAL.. 154

Step-Wise Procedure.. 155

Glossary of Terms and Description of Categories.. 157

Detailed Description of Categories.......................... 168

Test on Content Code.. 178

Matching Test on Terms... 183

LIST OF TABLES

Table Page

1. Mean Rater Scores of Expressiveness for 5 Diabetic Families 67

2. Mean Rater Scores of Mood and Tone for 5 Diabetic Families 67

3. Mean Rater Scores of Conflict for 5 Diabetic Families 69

4. Mean Rater Scores of Empathy for 5 Diabetic Families 69

5. Mean Rater Scores of Goal-Directed Negotiation for 5 Diabetic Families 71

6. Mean Rater Scores of Self Concept for 5 Diabetic Families 71

7. Mean Rater Scores of Responsibility for 5 Diabetic Families 73

8. Mean Rater Scores of Invasiveness for 5 Diabetic Families 73

9. Mean Rater Scores of Permeability for 5 Diabetic Families 76

10. Mean Rater Scores Overt Power for 5 Diabetic Families 76

11. Rater Scores of Persons in Power 77

12. Mean Rater Scores for Parental Coalitions for 5 Diabetic Families 79

13. Mean Rater Scores for Closeness in 5 Diabetic Families 79

14. Mean Rater Scores for Power Structure in 5 Diabetic Families 81

15. Mean Rater Scores for Mythology in 5 Diabetic Families 81

16. Mean Intra-Family Comparisons of 5 Diabetic Families 83

17. Mean Rater Scores of Global Assessment of Family Interaction of 5 Diabetic Families 87

18. Mean Rater Scores of Knowledge of Diabetes Across Families 87

19. Mean Rater Scores of Empathy to the Adolescent Diabetic Across Families 89

20. Mean Rater Scores of Acceptance of Disease Across Families 89

21. Mean Rater Scores of Overall Coping Ability of Diabetes 93

22. Adolescent Overall Diabetic Adjustment Score (DAS) 93

23. Adolescent Scores; Diabetic Adjustment Scale 95

LIST OF FIGURES

Figure Page

1. Beavers Systems Model.. 10
2. Relationship Between Family Interaction and Management Issues.. 15
3. Beavers-Timberlawn Family Qualities and Scales.. 42
4. Example of Scale on Beavers-Timberlawn............. 43
5. Global Health-Pathology Scale: Beavers-Timberlawn Family Evaluation Scale.................. 44
6. Glossary of Categories.. 47
7. Detailed Description of Categories.......................... 48

Chapter 1

STATEMENT OF THE PROBLEM

Introduction

In Canada, for every 100,000 adolescents between the ages of 15 and 19, there are 784 male and 992 female adolescent diabetics (Statistics Canada, 1980). Adolescent diabetics, compared with other groups, have the most problems maintaining adequate diabetic management (Ahlfield, Soler, & Marcus, 1983; Johnson & Rosenbloom, 1982; Sullivan, 1979a, 1979b). Yet, there are adolescents who are able to achieve good management of their diabetes (Hauser, Jacobson, Wertlieb, Brink, & Wentworth, 1985).

Management of diabetes is not only an issue for the adolescent, but also for the entire family, since the family's routines are important for good diabetic management. The present exploratory study focused on identifying selected family interaction patterns, in order to describe how they are associated with three diabetic management issues.

Rationale For The Study

Developmentally, the adolescent stage has many tasks. Some of these tasks include: achieving biological and psychological goals, developing peer relationships, and attaining greater independence from parents. Difficult in and of itself then, adolescence is an especially trying stage of development for the diabetic. For example, since it is a time of rapid biological and psychological change, the diet and exercise of the diabetic adolescent need to be continually adjusted to body changes in order to maintain good metabolic control (Cerreto & Travis, 1984; Grass, Hermann, & Shapiro, 1983; Johnson & Rosenbloom, 1982; Sullivan, 1979a, 1979b; Tattersall & Lowe, 1981). Another major aspect of the adolescent stage, which compounds management of the disease, is the importance of changing peer relationships. Peer relationships can actually complicate management of the disease. For example, at a time when peer conformity is important, the diabetic adolescent needs to avoid junk food, try not to skip meals, and follow a regular schedule of sleep, exercise and diet. Similarly, just when sexual maturity is important and adolescents want to be like their peers, the diabetic adolescent may have delayed sexual maturation (Cerreto & Travis, 1984; Johnson & Rosenbloom, 1982).

Interpersonal relationships with parents are also changing, as a greater desire for independence emerges. For all adolescents, this is a period of ambivalence between adult independence and childish dependency (Johnson & Rosenbloom, 1982; Sullivan, 1979a, 1979b). For the diabetic adolescent, this process is further complicated by the additional rules that must be established. These may well be seen as hampering independence. Some of these rules include maintaining a lifelong pattern of insulin injections, restricting the diet, worrying about insulin reactions, and going to a doctor frequently (Cerreto & Travis, 1984; Grass et al., 1983; Hoette, 1983).

In addition, parents can further complicate the diabetic adolescent's independence needs by being overprotective and rejecting (Hoette, 1983; Greydanus & Hofmann, 1979; Simonds, 1979; Wishner & O'Brien, 1978). Diabetes then, is considered a family disease since managing its dimensions is not an individual issue, but an issue for the whole family. Family disease means that the presence of the disease in one member has an effect on all the other members of the family.

Currently there is still no cure for diabetes. Though effective for metabolic control, insulin is not a cure for diabetes, as the treatment does not reproduce metabolic functioning (Johnson & Rosenbloom, 1982). However, the disease can be managed in order to live a reasonably normal lifestyle and to prevent further health complications. Some of the possible longterm complications are: kidney disease and renal failure, eye disease or potential blindness, nerve damage, circulation complications, cardiovascular disease and skin infections (Johnson et al., 1982; Wyngaarden & Smith, 1985).

Successful management of the disease can be viewed as involving many problem solving tasks for the individual diabetic and his or her family. Attaining physiological control involves the daily rituals of diet, insulin injections, exercise, urine and/or glucose testing. However, these physiological factors can be followed rigidly and the adolescent may still not have good metabolic control. Successful management also appears to involve sociopsychological factors, such as accepting the realities of the disease; adjusting to the management of the disease; and creating a family environment conducive to managing the disease (Cerreto & Travis, 1984; Johnson & Rosenbloom, 1982, Tattersall & Lowe, 1981).

We know little about the management of adolescent diabetes in families who consider themselves to be healthy families. Studying this group provided a baseline of data about the nature of family interaction in healthy families. For years the researchers studied only pathological families and then assumed healthy families to simply be the opposite. However, a healthy family is not necessarily one with an absence of pathology only, but it is distinct (Lewis et al, 1976). Therefore, it is important to observe the process of interaction in healthy families, in order to assess the patterns that have formed. In addition, the research literature says very little about the interaction patterns of families with adolescents who exhibit good diabetic management. For this reason the focus of this study is on describing the family interaction patterns of families who perceived themselves as functioning adequately, in an effort to see how these patterns relate to good management of adolescent diabetes. If, for example, adolescent diabetics who have better metabolic control live in families who have particular patterns of family interaction, it may indicate that medical and non-medical practitioners might focus on these socio-psychological factors, in order to improve a family member's management of the disease.

Definition Of Terms

There are several terms that need to be defined to provide clarity in this thesis: family interaction, healthy family, diabetes mellitus, and diabetes management.

Family Interaction

Family interaction is defined in this thesis as the processes of interchange between family members (Haley, 1972). The processes of interchange involve both verbal and nonverbal communication.

Healthy Family

In this study a healthy family refers to a family that is functioning well. It does not refer only to their physical state. A healthy family has an openness to outside information, clear generational boundaries with a balance between individual choice and family decision making, relationships of mutual respect, intimacy, clear communication, efficient problem solving, shared power structure, flexibility and humor (Lewis et al., 1976).

Diabetes Mellitus

Hereafter referred to as diabetes, this condition is "a metabolic disorder in which the ability to oxidize carbohydrates is more or less completely lost, usually due to faulty pancreatic activity and consequent disturbance of normal insulin mechanism" (Dorland's Medical Dictionary, 1974). There are two major types of diabetes: juvenile and adult onset diabetes (Keane, 1979). Juvenile diabetes, the type focused upon in this study, begins most often in childhood and young adulthood, but may occur at any age. This type of diabetes needs insulin for treatment and is sometimes referred to as insulin dependent diabetes (Bloom & Ireland, 1980). It is uncommon for this type of diabetic to have a family history of diabetes and the onset of the disease is rapid (Bloom & Ireland, 1980).

Diabetes Management

Management of diabetes is defined as the process of handling the demands posed by the treatment of diabetes. It incorporates both physiological and socio-psychological factors. The factors of interest in this thesis include attaining physiological control, accepting the realities of the disease, adjusting to the management of the disease and creating a family environment conducive to managing the disease.

Delimitations

A select group of adolescent diabetics is the focus of attention in this study. These adolescent diabetics perceive themselves to have good metabolic control and they live in intact families. The members of these families view their family functioning as healthy. Therefore the study does not provide information about all juvenile diabetics. Also, this study is limited to providing information about the relationship of family functioning to specific aspects of the management of diabetes.

Research Questions

This thesis focused on two questions: 1) What is the nature of family interaction patterns for healthy families who include an adolescent member with diabetes and who perceives his or her management of the disease as being good? 2) Is there a relationship between these family interaction patterns (the family's affect, goal-directed negotiation, autonomy, power structure, and mythology) and the diabetic management issues of:

1) Accepting and adjusting to the management of the disease;
2) Creating a family management pattern conducive to managing the disease; and
3) Attaining an appropriate level of physiological control.

Chapter 2

CONCEPTUAL FRAMEWORK

In studying the management of adolescent diabetes, researchers have used different approaches. Some have observed the adolescent individually to determine how the chronic illness affects the person, others have focused on the family impact of having an adolescent member who has diabetes, while still others have observed the family unit's influence on the individual's management of the disease. The present research focused on this latter area, namely family group interaction and the adolescent family member's diabetic management.

To aid in looking at the relationship between family interaction and adolescent diabetic management, Beavers Systems Model will be used (See Figure 1). Using Beavers Systems Model, certain diabetic management outcomes can be predicted. It is expected that families who are rated as adequate or optimally functioning will have greater success in managing the demands of adolescent diabetes. The next section contains a description of the Beaver's Model of family functioning.

Figure 1 Beavers Systems Model* (Beavers & Voeller, 1983)

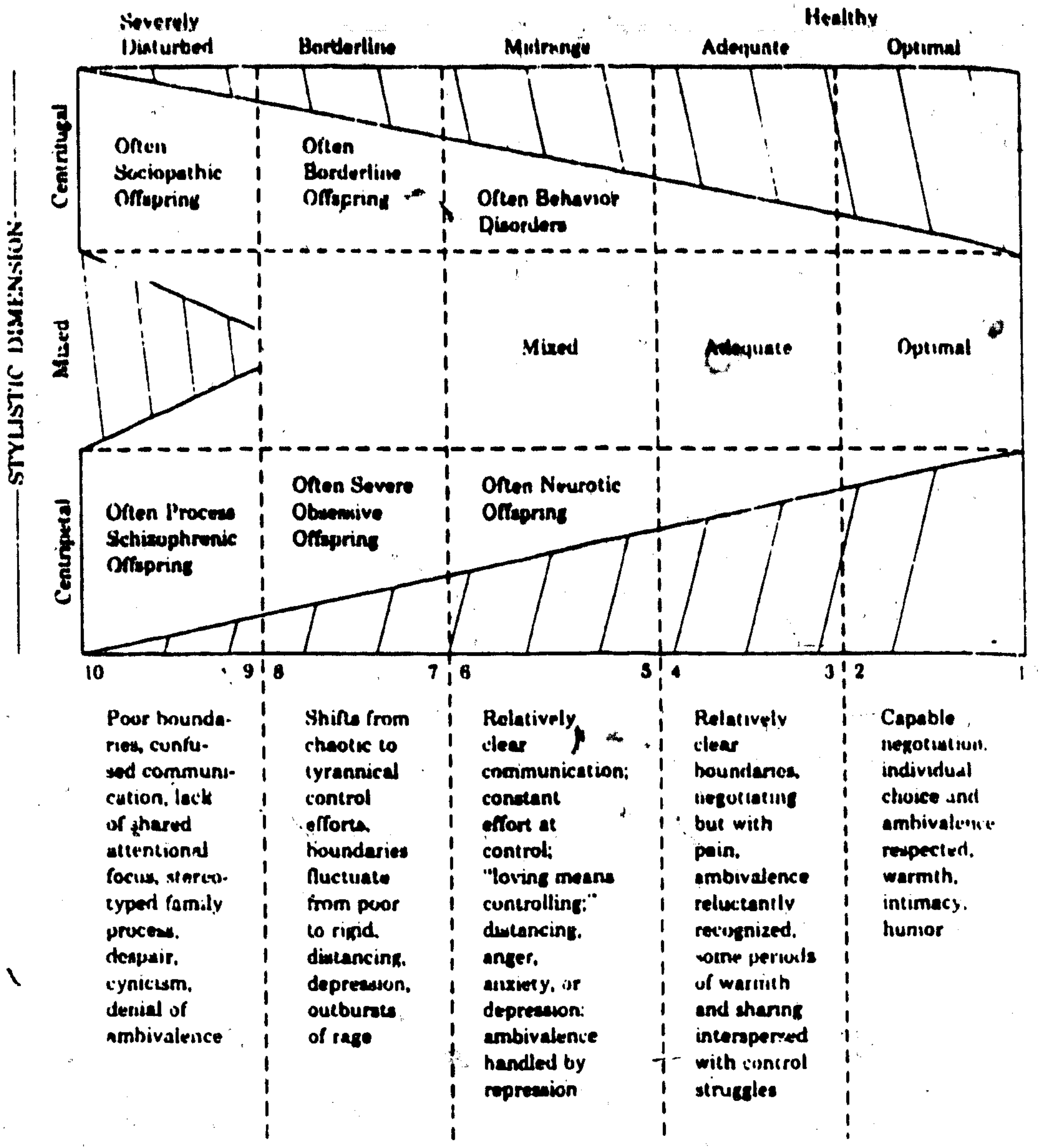

Severely Disturbed
Borderline
Midrange
Healthy
Adequate
Optimal
STYLISTIC DIMENSION
Centrifugal
Mixed
Centripetal
Often Sociopathic Offspring
Often Borderline Offspring
Often Behavior Disorders
Mixed
Adequate
Optimal
Often Process Schizophrenic Offspring
Often Severe Obsessive Offspring
Often Neurotic Offspring
10
9
8
7
6
5
4
3
2
1
Poor boundaries, confused communication, lack of shared attentional focus, stereotyped family process, despair, cynicism, denial of ambivalence
Shifts from chaotic to tyrannical control efforts, boundaries fluctuate from poor to rigid, distancing, depression, outbursts of rage
Relatively clear communication; constant effort at control; "loving means controlling;" distancing, anger, anxiety, or depression: ambivalence handled by repression
Relatively clear boundaries, negotiating but with pain, ambivalence reluctantly recognized, some periods of warmth and sharing interspersed with control struggles
Capable negotiation, individual choice and ambivalence respected, warmth, intimacy, humor

Fig. 1. Beavers Systems Model

Autonomy: A continuous or infinite dimension, related to the family system's capacity to allow and encourage members to function competently in making choices, assuming responsibility for self, and negotiating with others.

Adaptability: A continuous or infinite dimension, related to the capacity of a family to function competently in effecting change and tolerating differentiation of members.

Centripetal/Centrifugal: A curvilinear, stylistic dimension with extreme styles associated with severely disturbed families and the most competent families avoiding either extreme.

Inflexibility: The inability to change. The most chaotic families are the most inflexible owing to their lack of a shared focus of attention.

Severely Disturbed: The lowest level of functioning along the adaptiveness continuum manifested by poorly defined subsystem boundaries and confusion owing to nonautonomous members having little tolerance for clear, responsible communication.

Borderline: A level of functioning between severely disturbed and midrange, manifested by persistent and ineffective efforts to rid the system of confusion by simplistic and often harsh efforts at control.

Midrange: Families that typically turn out sane but limited offspring, with relatively clear boundaries but continued expectations of controlling and being controlled.

*Copyright permission granted (See Appendix A)

The Beavers System Model

Beavers System Model was developed out of a therapeutic background, which recognizes the importance of describing the characteristics of a healthy family system. The model is based on the concepts and assumptions of General Systems Theory.

In Beavers' model, the family qualities related to the development of capable individuals, do not make absolute distinctions between families that produce healthy children or children with psychotic problems. Instead, variables are described as three points on the continuum, with low and high ends. The lower a family is on several variables, the less successful they are at child-rearing. The variables are described as three positions arbitrarily assigned as seriously disturbed, midrange and healthy. In his operationalization of this model, Beaver's used the following family interaction variables: affect, goal-directed negotiation, autonomy, structure of the family, and mythology.

Chaotic families, or seriously disturbed families, are closed to outside information, interaction is repetitive, enmeshed and timeless. These families live in a dream or fantasy world, rather than in one which is goal-directed and characterized by problem-solving among family members (Beavers, 1976).

The midrange families are those families that adapt poorly to change and have a rigid structure. These families are highly controlling, and see biological drives as threatening.

Beavers Systems Model describes a healthy family system as a highly negentropic system structure with flexibility and adaptive functions. The outside boundaries are open to new information and generational boundaries are clear. Communication is clear and there is a respect for individual opinions. Lastly, emotions or affect are expressed and humor is present. Beavers includes optimal and adequate functioning in the healthy family functioning range (Beavers, 1977).

Beavers and Voeller (1983), in their later work, have diagrammed Beavers Systems Model to provide a clearer picture of the model (See Figure 1). This model has a cross-sectional design. There are two dimensions to the model, namely the horizontal and vertical axis. The horizontal axis, or continuum relates to the structure, available information and the adaptive flexibility of the system. Using systems terminology, the continuum is called a negentropic continuum, since the more negentropic (the more flexible and adaptive), the greater the family can function, negotiate and deal effectively with stressful situations (Beavers & Voeller, 1983).

The vertical axis is not a continuum, but is curvilinear. This axis is a stylistic dimension of family interaction, which reflects openness. There are two basic family styles: centripetal and centrifugal. The centripetal family style views the relationships within the family as more satisfactory than ones they have with people from outside their family. In other words, family members rely on one another more than on outsiders. On the other hand, the centrifugal family style sees the relationships in the outside world as more satisfactory than those within the family. Thus family members are more independent of one another than dependent upon one another.

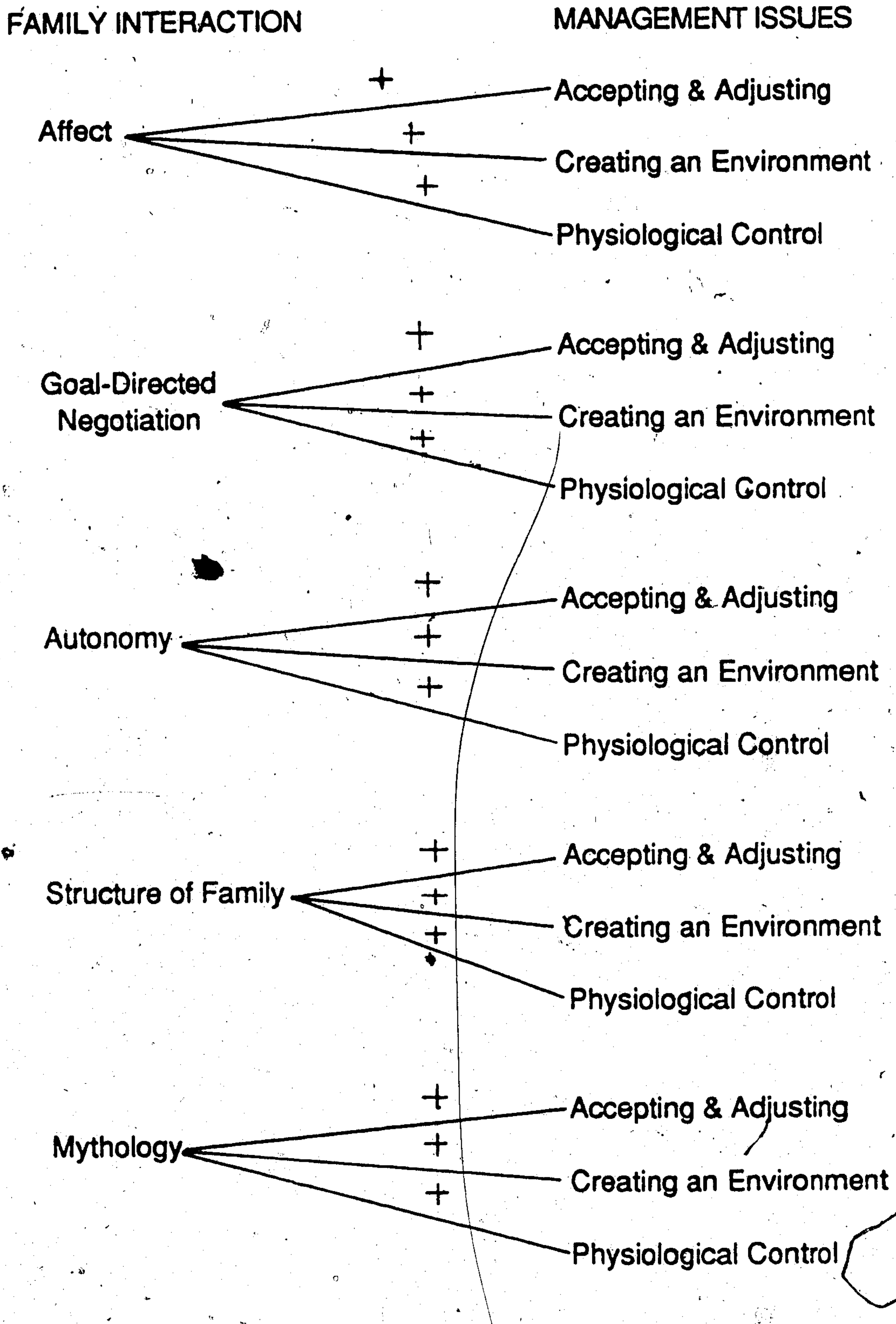
The diagram is designed in an arrow shape to illustrate that the extremes of style, either centripetal or centrifugal, are associated with poor family functioning. Extreme centripetal and centrifugal responses diminish as a family becomes more capable and more adaptive. Changing and adapting to meet individual needs is a characteristic of a competent family. For example, at the adolescent stage of the family life cycle, a more centrifugal pattern is related to optimal functioning (Beavers & Voeller, 1983).

Family Interaction and Diabetic Management

Families with adolescent diabetics need both negentrophy and morphogenesis to adapt to the changes required to manage a chronic illness like diabetes. Families with a chronic illness need to be more open to information from the medical system and need to change family routines to adapt to new demands on the system. Thus the management of diabetes depends upon particular family routines, such as regular meal times, balanced diet, exercise, sensitivity and support.

Management of diabetes is a complex concept and can involve many different issues. Three have been selected from the adolescent diabetic literature to provide a focus for the present study: accepting and adjusting to the realities of the disease; creating a family management pattern conducive to managing the disease; and attaining an appropriate level of physiological control.

Figure 2 Relationship Between Family Interaction and Management Issues


FAMILY INTERACTION
MANAGEMENT ISSUES
Affect
Goal-Directed Negotiation
Autonomy
Structure of Family
Mythology
Accepting & Adjusting
Creating an Environment
Physiological Control
+

Even though the families in the present study perceived themselves as healthy, Lewis et al. (1976), in their study, found there was considerable variation within the healthy group. Using Beavers' Model of family functioning, we would postulate the following relationships between the five family interaction variables and adolescent diabetic management (see Figure 2).

Definitions

In this section the family interaction variables from Beavers' Model and the selected diabetic management variables will be defined. The family interaction variables are: affect, goal-directed negotiation, autonomy, the family power structure and mythology. The selected diabetic management variables are as follows: accepting and adjusting to the realities of the disease, creating a family management pattern conducive to managing the disease, and attaining an appropriate level of physiological control.

Affect

Affect is defined by Beavers as the evenness of expression of emotions. In other words, affect is the family's pattern of interaction when expressing feelings. It is expected that, if the family members are able to have open expression of their feelings, there would be less stress in the family since open communication has been shown to reduce stress. For example, where stress influences diabetic control, an open expression of feelings would possibly reduce stress and help maintain control (Grey, Genel, & Tamborlane, 1980; Jacobson & Leibovich, 1984; Simonds, 1979).

Goal-Directed Negotiation (Goals)

This variable reflects the family's negotiating or problem-solving ability. It measures how much each family member contributes to how well the family stays on target in their discussion. The family's routine is important for diabetic management, therefore a family needs to be able to discuss how its members are going to work out the daily needs that are involved with a chronic illness (Ahlfield, et al., 1983; Johnson & Rosenbloom, 1982).

Autonomy

Autonomy, or the degree of family individuation, relates to an adequate balance between independence and dependence among family members. The adolescent diabetic needs some guidance and encouragement from other family members in managing the disease. It is each family member's responsibility to help the diabetic, but not to take over the management of the disease. Lower dependence of the adolescent member on other family members has been found to be related to better metabolic control, as well as better adjustment to the disease (Cerreto & Travis, 1984; Wishner & O'Brien, 1978).

Structure of the Family

The structure of the family is how the family arranges itself. The literature suggests that more balanced family power structures will allow the adolescent to take charge of management of the disease (Greydanus & Hofmann, 1979). In cases where power and influence resides in a parent, diabetic adjustment and control have been at a low level (Cerreto & Travis, 1984). In the Lewis et al. (1976) study, the father dominated families were found to be the healthy families. Beavers (1976) however, cautions that though family studies thus far have found father-led families to be the most successful, this may not be universal. Each culture may indicate other successful qualities in which men and women are defined differently.

Mythology

Mythology, or the family member's perception of reality, is how accurately and congruently the family views its functioning as a group. Since the disease is serious and needs constant discipline for successful management, family members need to be congruent in their thoughts about the disease and in their cooperative actions as they carry out management procedures. A recognition of the nature of the management procedures and long range complications, as well as means of handling emergencies as a family, has been shown to be related to better adolescent management (Cerreto & Travis, 1984; Jacobson & Leibovich, 1984; Marteau & Greene, 1984).

Accepting and Adjusting to the Realities of the Disease

This variable measures how well the family members understand the specific aspects of the disease and how well they take the necessary steps to adapt to the conditions needed to regulate the disease. This is a family level variable.

Creating a Family Management Pattern
Conducive to Managing the Disease

- This variable measures the lifestyle of the family with regards to managing the disease.

Attaining an Appropriate Level of Physiological Control

Acceptable levels of metabolic or physiological control vary between individual diabetics. Attaining physiological control involves balancing blood-sugar, diet, exercise and insulin. This management issue may be measured by determining how well the adolescent is able to maintain an acceptable level of physiological control.

Chapter 3

LITERATURE REVIEW

This chapter contains a brief review of the work done relating to family interaction and chronic illness, as well as a more detailed review of family interaction and the management of adolescent diabetes. The literature relating to family interaction and chronic illness provides background information relevant to how an chronic illness generally affects the family, while the literature review of family interaction and diabetic management provides a description of what is presently known about this specific relationship.

Only recently researchers have begun to observe adolescent diabetics who have achieved good management. Consequently, there is much more known about the factors which influence poor adolescent management than those which influence good management. Similarly, families with poorer levels of functioning have been studied much more than those rated as healthy or adequately functioning. Fortunately, researchers have recognized that much can be learned from observing and studying adequately functioning families who have adolescents with good diabetic management. The three areas that constititute the components of this review are: family interaction and chronic illness; factors influencing poor management of adolescent diabetes; and factors influencing good management of adolescent diabetes.

Family Interaction and Chronic Illness

The literature on chronic illness has several contributions to make in the understanding of family interaction and diabetes management. However, before considering these contributions, the term itself needs to be defined. According to Hobbs, Perrin, and Ireys (1985), chronic illness is "one that lasts for a substantial period of time and has continuing and often debilitating sequelae" (p. 33).

There are many chronic diseases affecting children. Juvenile-onset diabetes is only one of eleven conditions representing the severe chronic illnesses of childhood. The others are muscular dystrophy, cystic fibrosis, spina bifida, sickle cell anemia, congenital heart disease, chronic kidney diseases, hemophilia, leukemia, cleft palate, and severe asthma (Hobbs et al., 1985). In the United States, an estimated 10-15% of all children have a chronic illness, or illnesses, with 1% of the childhood population having very special problems.

Why consider the needs of chronically ill children and their families? First, they have not received the public attention that has been given to handicapped children and youth. Second, these children are living longer now since the discovery of medicines, such as insulin. Third, new technologies like the insulin blood pump, have challenged the boundaries for the quality of life for these children. Fourth, spending for the care of chronically ill children is a major portion of the child health dollar, yet little attention is paid to the options available in the distribution of resources for the needs of chronically ill children and their families (Hobbs et al., 1985).

Even though there are differences among the chronic illnesses of childhood and they require a variety of treatments, many issues for the families involved are similiar, regardless of the disease. Some of these common issues are as follows:

1) They are costly to treat. Some necessary items for care are not provided by the health care system.

2) Intermittent medical care is necessary, but the burden for care on a day after day basis falls on the family.

3) There is a strong genetic component.

4) Many have slow degenerating effects and premature death. The future course is unpredictable, creating possible psychological problems for children and parents, especially during normally difficult developmental periods.

5) The disease is accompanied with pain and discomfort.

6) The chronicity of the disease, in and of itself, means that the disease is constantly there, which is a continual shadow for the family.

7) Many children require an integration of specialists with their general care, which is not always available in all locations of the country (Hobbs et al., 1985).

These issues bring all families with chronically ill children additional burdens and challenges which are similiar in nature.

Even for the teenager with an intact, healthy body, adolescence is a challenging stage of life. For adolescents with a chronic illness, the challenge is compounded and the body can become a source of embarrassment. For example, just when an adolescent desires independence and autonomy, the illness may pose physiological limitations, which makes him or her dependent. Coupey and Cohen

(1984) found that most adolescents refuse, at some time, to comply with treatment of their illness, without regard to the consequences of their actions, as a statement of their independence.

It seems that no matter what the chronic illness is, there are impacts on the child. Some effects include: the constancy of the disease and continuing need for treatment imposes rigid care routines, the child's self-worth is challenged, and the child must face the scary medical world of machines, hospitals and doctor's offices (Hobbs et al., 1985).

Healthcare has continually been improving as research discovers new medicine and treatments for chronically ill children. Therefore, it is also important to consider prevention of the illness and its consequences. Tertiary prevention attempts to prevent the disease from interfering with physiological, educational or psychological functioning (e.g., improving school participation and encouraging emotional and physical growth) of the child. Another aspect of tertiary prevention is reducing the interference of the disease with the growth of the child or the family (Hobbs et al., 1985).

In order to reduce the interference of the disease on the family, the impact of the chronically ill child on the family must be considered. There are two distinct views when looking at the impact of the chronically ill child on the family (Crain, Sussman & Weil, 1966). The first states that illness changes the interpersonal relationships of the family. The second view suggests that illness creates no unusual changes in the interpersonal relationships of the family, with the focus placed on the "normal" and usual. However, Anderson's (1981) work suggests that neither view alone explains the impact on the family. She found parents who coped well with a chronically-ill child, treated them as "normal" and not sick, yet their social interactions were greater with the chronically ill child than with other healthy siblings. It appears then, if the general attitude of a family is to treat the child with a chronic illness as normal rather than abnormal, coping is better, even if the interactions are indeed different. The social reality is different for a child with a chronic illness, even though parents may try to "normalize" the environment (Anderson, 1981). For example, a diabetic child may always be labeled "sick," no matter how well the child is adjusted to the disease, merely because he or she has diabetes and must do something to manage the disease.

Several reseachers have documented the impact of the chronically ill child on the family (Burton, 1975; Deford, 1983; Lund, 1974; Mikkelsen, Waechter & Crittenden, 1978). The evidence from these articles is clear, that many families find a quality of closeness is developed by mutually committing themselves to caring for the ill child. For example, siblings become more sensitive and caring people by assisting with the care of a chronically ill brother or sister. Earlier research painted a grimmer picture of families with chronically ill children.

On the other hand, it is evident that caring for a chronically ill child can be stressful as well. Some families find raising a child with a chronic illness overwhelming. These families may face financial ruin, depression and despair, and find it necessary to settle for lower career goals for themselves and their child (Burton, 1975; Deford, 1983; Lund, 1974; Millelsen et al., 1978).

One of the most important issues impacting chronic childhood illness is the psychological health of the child and family. Pless and

Satterwhite (1973) and Stein and Riessman (1980) have developed some measures in attempting to observe the impact of chronic illness on the family. Although great strides have been taken in this area, Pless and Zvagulis (1981) state there are still problems in measuring such elusive concepts as psychological status and family functioning.

Factors Influencing Poor Management of Adolescent Diabetes

Most studies have given more attention to the management issue of attaining physiological control than the other management issues. Some studies assume that the developmental changes of adolescence contribute to poor management of diabetes (Gwinn, Olex, Whitman, & Crawford, 1984; Johnson & Rosenbloom, 1982). Emotional stress, maturation factors, changing exercise patterns and desire for greater autonomy are the specific factors they found that negatively influence control.

Tattersall and Lowe (1981), however, confront the assumption that the developmental changes in adolescence necessarily contributes to poor control in diabetics. By advocating a treatment plan that includes the total life situation of the adolescent, an adolescent's control can be managed.

Another problem with this assumption that the achievement of adolescent developmental tasks leads to poor management of the disease, is that it assumes the management of diabetes is solely an individual issue for the adolescent. Actually, several studies have pointed out that the management of diabetes is a family issue (Cerreto & Travis, 1984; Gwinn et al., 1984; Klusa, Habblick, & Abernathy, 1983; Koski & Kumento, 1977; Kraemer, 1982; Sargent & Baker, 1983).

In the family, the child's medical condition can have a 'positive' function. Worrying about the child may diminish stress between other family members (e.g., when the child goes out of physiological control, the parents focus on the child's problem, rather than on their own) (Minuchin & Barchai, 1972; Klusa et al., 1983; Kraemar, 1982; Sargent & Baker, 1983). Sargent and Baker (1983) call this type of condition in a family "psychosomatic diabetes," in which the poor condition is a response to emotional arousal. Kraemer (1982), on the other hand, calls metabolic control the "thermostat," since it is sensitive to the emotional temperature of the family and operates to return it to optimal value. For example, when the hostility between family members increases, the diabetic member may go out of physiological control, causing the family to focus on the disease and thereby avoid the family issue. Thus, the diabetic's control may serve as a protective function for the family by reducing stress.

Stress has been focused on in several studies and has been found to influence the management of diabetes (Simonds, 1979; Tattersall, 1981; Cerreto & Travis, 1984; Jacobson & Liebovich, 1984; White, Kolman, Wexler, Polin, & Winter, 1984). More specifically, Simonds (1979) found that high levels of stress negatively influenced the physiological control of a diabetic. Tattersall (1981) found that stress stimulates the release of hormones, which oppose the action of insulin and thus cause the diabetic to go out of physiological control. Tattersall further explains that, since the diabetic is responsible for his or her day-to-day care, personal or environmental stress can influence the ability to concentrate on the task of managing the disease. Lastly, White et al.'s study (1984) found that even with good diet and insulin management, emotional stress was still the leading factor for instability of metabolic control. Stress then, whether it is emotional or environmental, influences control of diabetes.

The interaction patterns of the family can also lead to poor management. The types of problematic family patterns that negatively influence control are: being overprotective, overanxious, overindulgent, overpermissive, perfectionistic, controlling, indifferent, rejecting, enmeshed, and unable to resolve conflict (Cerreto & Travis, 1984; Johnson & Rosenbloom, 1982; Minuchin, Baker, Rosman, Liebman, Milman, & Todd, 1975; and Sargent & Baker, 1983). Cerreto & Travis (1984) try to explain how these interaction patterns work. They found that parents and adolescents who find themselves in rigid patterns of interaction, are more vulnerable to stress and, this in turn, makes diabetes difficult to manage. Interaction patterns then, can influence poor management.

Several other psychosocial qualities have been found to be related to aspects of management. They are: low self esteem of parents (Grey, Genel & Tamborlane, 1980); indifferent parental attitude towards the disease (Khurana & White, 1970); low self esteem of the child (Grey et. al., 1980); and anxiety and depression felt by the child (Turkat, 1982). All of the above have been shown to be related to poorer management of the disease.

Factors Influencing Good Management of Adolescent Diabetes

Good management of diabetes is not a simple process. Cerreto and Mendlowitz (1983) suggest that diabetic management involves a complex interaction of physical, psychological, familial, social and environmental variables. The findings of their study suggest that it is unproductive to search for a single variable that influences diabetic management, since, in actuality, it can best be explained by the interaction of several variables.

From the literature reviewed, it appears that family factors (e.g., family environment, family characteristics, emotional supportiveness) play a key role in the level of adolescent diabetic management. Hoette (1983) found that the family environment has an impact on the level of management (e.g., when both parents were involved in the adolescent diabetic's care, the atmosphere was more harmonious). Klusa et al. (1983) found that if the parental or family psychosocial disturbances can be handled, the adolescent's management improves. However, a problem with this latter study is that, after a good review of the literature, only two cases were used to test their findings. They also omitted a methods section of explanation as to how they completed their study.

Family characteristics are another aspect of the family influencing good management. Anderson and Auslander (1980) found the following family characteristics to be related to management: high stability, low stress environments, little interpersonal conflicts between parents and child, good cooperation between parents, and mother's managing anxiety despite her strong feelings about the child's diabetes and its management. Unfortunately, this study assumed that the mother was the only parent who took responsibility for disease management. Hoette (1983), on the other hand, found that if both parents were involved in the management of the disease, better management was achieved. The Philadelphia Child Guidance Center gives not only the parents, but each family member the responsibility for diabetic care and also provides diabetic education for each family member (Sargent & Baker, 1983).

In summary, the patterns of family interaction which were reported in the literature to be associated with good management were: emotional supportiveness among family members, parental role flexibility, effective communication patterns, joint decision making, clear generational boundaries and a family environment conducive to managing diabetes (Baker & Lyen, 1981; Sargent & Baker, 1983; Satterwhite, 1978; Wishner & O'Brien, 1978).

Chapter 4

RESEARCH PLAN AND METHODS

Introduction

The present thesis is an analysis of data from a more comprehensive study of problem solving interaction in families with and without a diabetic adolescent (Kieren & Hurlbut, 1985). The original study used a multimethod technique utilizing questionnaires, diaries, videotaped focused interviews in a laboratory and interaction analysis of problem solving interaction. The present study utilized the interaction tapes and diabetic questionnaires from the larger study (Kieren & Hurlbut, 1985), in which this researcher served as the research assistant. In addition, the current study built upon the original work by using a new family interaction analysis technique, and by designing both training methods and a new family diabetic measure.

This chapter includes a description of the sample, research instrumentation, and the methods of the present analysis. Also included is a description of the training materials and process used for interaction analysis.

Sample

The sample for the current research consisted of the five intact, mother, father and adolescent diabetic family groups. In no case was the three person family studied the entire family group. While it might be better to study whole family groups, the design of the original study (Kieren & Hurlbut, 1985) dictated study of a smaller family group.

In three families the adolescent was female and in two, male. The adolescent was between the ages of 13-18 years old, of which the mean age was 16 and, in three cases, was the oldest child. In one case, where the child was not the oldest, the adolescent was the oldest child living at home and in the other case, the subject had an older sister living at home. In all cases, the adolescent had been diagnosed as a diabetic at least one year prior to the study.

The mean socioeconomic status of the families was social strata 2, as measured by Hollingshead's scale. The social strata on this scale included a two factor index of occupation and education, which was: social strata one as the highest, including major business and professional; social strata 2, second highest, including medium business, minor professional, technical; social strata 3, the midpoint, including skilled craftsmen, clerical, sales worker; social strata 4 including machine operators, semiskilled workers; and social strata 5, the lowest, comprising unskilled laborers and menial service workers.

Families with adolescent diabetics were identified through the local chapter of the Canadian Diabetes Association parent and youth groups, metabolic units dealing with adolescent diabetics, and medical doctors dealing with adolescent diabetics.

The findings were not intended to be generalizable to the total population of families with diabetic adolescents. The study's selection criteria for diabetic families were: an intact two parent family who perceived their family functioning as healthy, and who included a diabetic adolescent who had the disease for a minimum of one year and who perceived him or herself as having achieved good control of the disease. Thus, the results are generalizable only to healthy families with adolescent diabetics who perceive themselves to be in good control.

Research Instrumentation

Measures of Family Health

There were three measures of family functioning in the original study: scores on Faces II, the total score on the Family Strengths Scale, and individual answers to the question "We are a healthy family." The primary instrument utilized to validate the family's initial assessment of adequate family functioning, was a short thirty item form of Olson, Portner and Bell's FACES II (1983). The development of the instrument was based on the circumplex model of family functioning. The alpha reliabilities for the entire instrument are .90, .87 for the cohesion subscale and .78 for the adaptability subscale. Norms are available for adolescents as well as for parents. Family scores were utilized to determine the family's functioning rating (Olson, Porter & Bell, 1983). Families were assessed as falling into two categories: extreme or balanced.

The Family Strengths Scale is a twelve item scale developed by Olson, Larsen and McCubbin (1982). The scale has two subscales, pride and accord. Cronbach's Alpha was used to calculate the Alpha reliabilities. Reliability for the pride subscale was .88, .72 for accord and .83 for the total scale. Norms for parents and adolescents are available from a study of one thousand families (Olson et al., 1983). In addition, each family member was asked to respond on a five point Likert scale to the single question "We are a healthy family."

Measures of Family Interaction

In the original study (Kieren & Hurlbut, 1985), a total of 40 minutes of family interaction was videotaped for each family. The stimulus for this interaction was the presentation of two different problem solving situations: completion of a puzzle and resolution of three revealed difference problem situations. The present study utilized interaction related only to the revealed difference situations. The revealed difference technique was developed by Kieren, Hurlbut, Lehman, and Gora (1985) and modeled after the work by Olson & Ryder (1970). From the general adolescent literature, and literature addressing family relations issues, typical family problem solving situations were selected for teenagers who have diabetes. Nine problem solving situations were chosen from these issues and vignettes were written pertaining to these issues. Different parallel forms were written for male and female adolescents and for those with and without diabetes. (See Appendix A for the revealed difference measure.) Five forced answer questions were posed to respondents about the problem solving situation. These questions are as follows: What is the problem? Has a situation like this ever occurred in your family? Who is most responsible for the problem? Which solution is th[illegible] for this problem? Who should make the final decision in this [illegible]tion?

Each family member completed the instrument individually. The individual responses were used to determine which of the situations were salient for the family, and which had some level of disagreement about how this problem would be resolved. Two problem solving situations were selected out of the situations that individual family members chose as salient for their family and which had some level of disagreement between family members. The criteria for salience was if two or more family members stated that this situation, or one like it, had occured in their family. In addition, all families discussed the vignette about conflicts over friends. This was done to provide a common situation across families. The family problem solving task was for the family to arrive at a family consensus regarding the resolution of these three situations. Ten minutes was allowed for the family to discuss each situation and arrive at a family consensus in their responses to the questionnaire. All situations were videotaped.

The instrument that was chosen for assessing the family interaction in this analysis was the Beavers Timberlawn Family Evaluation Scale (Lewis et al., 1976) (See Appendix A). The Beavers-Timberlawn Family Evaluation Scale measures five family qualities: affect, goal-directed negotiation, autonomy, structure of the family and mythology (Beavers, 1976). The five scales and their componet subscales are summarized in Figure 3.

The developers tested the construct validity of this instrument by looking at the relationship between the Beavers-Timberlawn Evaluation Scale and the Global Family Health Pathology Scale. Both scales were used on 103 families. The correlation between the two scores was .90 at the .005 level of significance.

In addition, Lewis et al., (1976) reported the concurrent validity. It was arrived at by comparing the Beavers-Timberlawn

---

Figure 3
Beavers-Timberlawn Family Qualities and Scales

1. Affect
    - a. Expressiveness
    - b. Mood and tone
    - c. Conflict
    - d. Empathy
2. Goal-Directed Negotiation
3. Autonomy
    - a. Self-concept
    - b. Responsibility
    - c. Invasiveness
    - d. Permeability
4. Structure of the family
    - a. Overt power
    - b. Parental coalitions
    - c. Closeness
    - d. Power structure
5. Mythology

Evaluation Scale with the Gossett-Timberlawn Adolescent Psychopathology Scale. In this test, a family measure was correlated with an individual measure. The instruments correlated at .42, which was statistically significant.

Each of the five family qualities were placed on scales for scoring. Each scale was divided into segments one to five, with .5 intervals. The numbers on the scales are labeled with varying degrees of the particular family quality being measured. Figure 4 gives an example.

Figure 4

Example of Scale on Beavers-Timberlawn

Structure of the Family

A. Overt Power: Based on the entire tape, check the term that best describes your general impression of the power structure of this family.

1 1.5 2 2.5 3 3.5 4 4.5 5

Chaos	Marked dominance	Moderate dominance	Led	Egalitarian
Leaderless: no one has enough power to structure the interaction.	Control is close to absolute. No negotiation; dominance and submission are the rule.	Control is close to absolute. Some negotiation, but dominance and submission are the rule.	Tendency toward dominance and submission, but most of the interaction is through respectful negotiation.	Leadership is shared between parents, changing with the nature of the interaction.

If 2 to 4, indicate:

Who is #1 in power: Father....... Mother....... Child (specify)................................

Who is #2 in power: Father....... Mother....... Child (specify)................................

The Global Health-Pathology Scale was a single item measure of the family's health. Scoring on this scale ranged from ten, most pathological, to one, healthiest. The scale is shown in Figure 5.

Figure 5

GLOBAL HEALTH-PATHOLOGY SCALE: Beavers-Timberlawn Family Evaluation Scale.

Circle the number of the point on the following scale which best describes this family's health or pathology.

---

10 9 8 7 6 5 4 3 2 1

Most Pathological — Healthiest

In scoring the Beavers-Timberlawn Family Evaluation Scale and the Global Health-Pathology Scale, the coders viewed 20 minutes of family interaction and then circled the number on the scale that best represented the family's pattern of interaction for each variable. For example, in rating the family for overt power, if the coder found the family had no leader, the number 1 would be circled (See Figure 4). After viewing and rating two families, the coder reviewed the

Glossary of Terms and Detailed Description of Terms (See Appendix B), and then took a ten minute break. Then they proceeded to view and rate the remaining three families.

Training of Coders

The objectives of the training sessions were to familiarize the coders with the use of the Beavers-Timberlawn Family Evaluation Scale, to accurately assess the perceptions of the coders in their use of the scale and to provide practice for the coders in using the scale. Since the Beavers-Timberlawn group reported that they had underestimated the amount of training necessary for the use of the scales (Lewis et al., 1976), extensive training was designed for the coders in this research. The Beavers-Timberlawn group did not specify how they trained their coders, but instead seemed to rely on the therapist's prior knowledge and experience, rather than their particular knowledge of the use of the Beaver's-Timberlawn Evaluation Scale. These prior experiences in the use of the scale led to a decision to develop a comprehensive training program for the coders.

A training manual was designed for the coders to acquire a clear understanding of the scales and terms (See Appendix B). Since there is a subjective element in coding the scales, it was important that the coders' knowledge be clear on the definitions of specific terms and the use of the scales. The training manual outlined the procedures of the training. Also included in the training manual was a glossary of terms, a detailed description of categories, a copy of the content test and a copy of the matching test.

The Glossary of Terms elaborated on each category of the Beavers-Timberlawn Evaluation Scale and Global Health-Pathology Scale (See Appendix B). For example, the glossary for expressiveness, one of the scales under family affect, included a copy of the scale for expressiveness and a concise definition for expressiveness (See Figure 6). Each category was defined in order for the coders to gain an accurate understanding of the scale.

Figure 6.

Glossary of Categories.

I. FAMILY AFFECT

A. Expressiveness: Rate the degree to which this family system is characterized by open expression of feelings.

1 1.5 2 2.5 3 3.5 4 4.5 5

Open, direct expression of feelings	Direct expression of feelings despite some discomfort	Obvious restriction in the expressions of some feelings	Although some feelings are expressed there is masking of most feelings	No expression of feelings

Expressiveness - measures the degree to which the family system encouraged the open communication of affect. To further explain, in terms of family interaction, it characterizes a family whose interactions are warm. Members are able to express their individual needs clearly, yet recognize the limitations of others to meet those needs. Quality of affect is not measured; only the openness of expression.

The detailed description of categories was designed to give the coders a clearer understanding of the scales (See Appendix B). An example was given for each whole number on the scale to help the coder measure what the scale was designed to measure (See Figure 7).

Figure 7.

Detailed Description of Categories

Expressiveness

1 - 1.5	open, direct expression. eg. Family members directly express themselves to a striking degree.
2 - 2.5	direct some discomfort. eg. Their words are direct, but possibly their body language expresses an uncomfortableness.
3 - 3.5	obvious restriction in the expression of some feelings. eg. These family members constrict their emotional side.
4 - 4.5	masking of most feelings. eg. Family members are unaware of, or have a tendancy to deny, feelings.
5	no expression of feelings. eg. No affirmation to each other, or family members repress their affect.

Measures of Diabetic Management

There were three diabetic management variables in the present analysis:

1) accepting and adjusting to the realities of the disease;

2) creating a family management pattern conducive to managing the disease; and

3) attaining an appropriate level of physiological control.

These variables were measured by the following instruments: the diabetic adjustment scale (DAS); Beavers-Timberlawn: Management of diabetes; and diabetic control questions.

Diabetes Adjustment Scale (DAS)

The Diabetes Adjustment Scale (DAS) was originally designed by Sullivan (1979a, 1979b) to assess aspects of a diabetic adolescent girls' attitudes toward diabetes. In the present study, it was used to measure the management variable of accepting and adjusting to the reality of the disease. While it originally was used with girls, it has been subsequently used with both boys and girls in the work of Hauser, Jacobson, Wertlieb, Brink, & Wentworth, (1985). The scale was constructed as a means of assessing an adolescent's view of diabetes in five life adjustment areas. These five adjustment areas are: peer relationships, family relationships, school adjustment, dependence-independence conflicts, and body image concerns. Several items on the DAS were drawn from interviews with clinicians, adolescents, their parents and other family members (Sullivan, 1979a). The interviews were directed at ways in which diabetes affects the lives of people who have adolescent diabetes. Additional items were drawn from the literature on adolescent developmental issues and the psychological aspects of diabetes. The final list of items on the DAS were chosen by a team of clinicians, by selecting those items that best reflected how diabetes influences lifestyles.

A team of experts from psychiatry, pediatrics, and endocrinology rated each response according to their own definition of good adjustment. Also, the raters categorized the items. If an item was ambiguous, it was not used for scoring and was labeled an informational item.

Sullivan's (1979a, 1979b) findings reported meaningful intercorrelations among the adjustment areas (e.g., total adjustment score and attitudes towards diabetes). Also, a second study of 105 diabetic adolescent girls revealed significant positive correlations with measures of self esteem (Rosenberg, 1965) and negative correlations with depression (Beck, 1967). Likewise, Hauser, Jacobson, Wertlieb, Brink, & Wentworth (1985), found a significant relationship between aspects of family environment and adolescent diabetic adjustment. These findings lend support for the construct validity of this instrument. (See Appendix A for entire scale).

In scoring Sullivan's DAS, 50 of the total 68 questions were used. The 18 items that were not used were deleted from the scoring, because they were direct information questions and did not measure life adjustment. Those 18 deleted questions provided information about the respondent, but the items did not pertain directly to the adolescent's life adjustment.

A five point system was used to score the adjustment items. The highest adjustment score on an item was 1 and the lowest was 5. Some items on the scale were stated in a reverse position to prevent a response set. These items were likewise reversed in the scoring. A score of 50 points indicated the highest overall adjustment and a total score of 250 indicated the lowest adjustment score.

The complete DAS was not available at the time the Kieren & Hurlbut study was done. Therefore, a separate letter (see Appendix A) was sent to each of the 5 diabetic adolescents, asking them to complete the DAS for this present study. The DAS and a self-addressed stamped return envelope were enclosed with the letter. All 5 DAS questionnaires were returned fully completed.

Lehman: Management of Diabetes

These subscales were developed for the present research by the author to measure the management variable "creating a family management pattern conducive to managing the disease." They were designed from the salient issues in the diabetic literature and were patterned after, and added to, the subscales in the Beavers-Timberlawn Family Evaluation Scale. Ratings of obse[illegible] family interaction were used to assess: family knowledge of diabetes; family empathy toward the adolescent diabetic; and family acceptance of the disease. Selection of these three areas was based upon a review of the diabetic adolescent literature.

The fourth section to this subscale was an assessment of the family's overall level of coping with diabetes. This was a global rating of the family's coping ability (Appendix A).

Diabetic Control Question

The question was asked: "How often have you fallen on either side of the acceptable range (for the method you use to measure control) in the past week?" This one question was used to measure the adolescent's perceived level of diabetic control. Possible responses were: "never, rarely, often, very often, and always." (See Appendix A). Two forms were designed, one for the adolescent and one for parents. Only the adolescent's response was used in this analysis.

Procedures

Training Results

Three training sessions were held for the coders. The first session was designed to give the coders a brief overview of the study and to familiarize them with the glossary of terms, detailed descriptions of categories and the scales. Between the sessions, the coders were to take two tests: a matching test on the terms, and a content test on the code. This was done to assess coder accuracy, which is defined as the level of the coder's understanding of the complexity of the code. A 90% level of coder accuracy was needed on the test before proceeding to training session two.

However, the test on the content code was more difficult than the coders anticipated. As they were unable to reach a 90% accuracy by Session II, a third session was needed before training with the videotapes. The 90% level for coder accuracy was established to facilitate a decrease in variance of the coder's ratings (Haynes, 1978a).

The concepts on the content test were not new to either coder, but the format of the concepts was new. The format of the concepts needed to be memorized for the test, which seemed to be an irritation to the coders, since when they actually did the coding, the scales used would be in front of them.

Since the practice tapes could not be used yet in Session II, the time was used to discuss the content of the scales. The discussion proved to be useful and clarified the content that was unclear. For example, regarding overt power, the question was asked by one coder, "Is it the one who appears to have power or the one that is actually in control?" The question was answered as the one who appears to have power. If that person is not actually in control then, the power structure scale will reveal that issue.

The scales that had reversed scoring also proved to be difficult to handle. For example, on the invasiveness scale a rating of 5 was pathology, whereas on the expressiveness scale, it was an indication of health. There were six scales that had reversed scoring. Both coders did admit, however, that part of their difficulty was that they had spent insufficient time studying for the test.

At Session III, both coders had reached 90% accuracy on the content code. The purpose of session III was to practice using the scales after viewing families on videotape. Videotapes from the non-diabetic families in the larger study were used for training. This gave the coders practice coding family interaction in the same situations as those they would code for the present study.

The Beavers-Timberlawn group used 10 to 15 minutes of viewing time for the coders (Lewis et al., 1976) during their training. In this study, coders viewed 10 minutes of videotape during training. In training session three, the coders viewed the same 10 minutes of tape twice before coding and then viewed the next 10 minute section of family tape only once before coding. Then the coders were asked to evaluate which method they felt gave them sufficient exposure to rate the family's interaction. This aspect of the training was designed to ensure that the coders were seeing a representative sample of family interaction before coding (Hartmann & Gardner, 1981; Haynes, 1978a).

After viewing the first tapes, the coders felt the problem-solving activity did not allow some families to show their affective side. As the training progressed, some families showed their affective side and others did not. This issue proved to be more a characteristic of particular families rather than the task given the family. The Beavers-Timberlawn group found that the judge's ratings did not seem particularly influenced by the specific task given to the family (Lewis, et al., 1976).

After viewing and coding two videotapes, the coders were asked to take a break and then review the glossary and detailed description of categories. Both the break and the review were intended to increase reliability and validity by minimizing observer bias and drift (Haynes, 1978a). Both coders were resistant to do the review. They both stated that they knew the terms and categories and that the review was not necessary. They were still strongly encouraged to review the materials.

After viewing each videotape, the coders rated the families. Then the ratings that were designated were discussed. The discussion helped the coders clarify differences. For example, on the empathy scale, one coder did not see any empathy in the cognitive problem-solving situation. However, the other coder commented on the feelings of empathy that he experienced in viewing the family and gave specific examples. Empathy was clarified to be both what was seen and felt by the coder.

The total time spent in training was 9-12 hours. This time included the 8 hours spent together in the three training sessions, and individual time spent studying for the tests, which was 1 hour for coder A and 3 hours for coder B.

Reliability

The scales chosen in this study required subjective judgements and evaluations by the coders. The training was stringently planned to reduce the amount of inter-coder variation and increase reliability (Hartmann & Gardner, 1981; Haynes, 1978b). Lennard and Bernstein (1969) state that the use of descriptive systems enable one to summarize different observations and separate out common aspects. For this reason the training objectives were to train the coders in the same system and to minimize the difference between their evaluations of the videotapes.

To check the coders on their accuracy, the coders were required to take a two part content test on the Beavers-Timberlawn Evaluation Scale (See Appendix A). The coders needed to obtain 90% before proceeding to the coding. This percentage was set in order to ensure a high level of accuracy. The test was designed to check coder accuracy, diminish observer bias, and increase interrater reliability (Haynes, 1978b). The first part of the test was a matching exercise on the terms used in the scale. The second part was a check on the knowledge of the specific categories on the scales. Results of the tests helped identify difficulties in understanding the code. These difficulties formed the basis for further training.

After the coders obtained 90% on the content tests, four sample tapes were viewed. The sample tapes were the same segments of tape for non-diabetic families as would be reviewed for diabetic families. For training in the use of the diabetic management aspect of the scale, the last 10 minutes of a single diabetic family's tape was used. Even though the coders would eventually evaluate this family's interaction, the segment of tape used in training was not reused.

During training, after viewing the sample videotapes, the coders used the Beavers-Timberlawn Evaluation Scale and the Global Health-Pathology Scale. After coding each family, difficulties were discussed, to clarify the differences the coders had in viewing the tapes.

In order to test the inter-coder reliability, there are many statistics available. The interrater reliability was checked using the Pearson Product Moment Correlation Coefficient. The literature suggests that this method of statistic slightly inflates the interrater reliability. Even though the sample size was small, this correlation was still chosen in order to compare the reliabilities obtained in the Beavers-Timberlawn group's original study with the present one. There are problems inherent in determining the level of interrater reliabilities for homogenous samples using the Pearson Product Moment Correlation. The presence of homogeneity limits the variability and therefore affects the correlation coefficient (Hinkle, Wiersma, & Jurs, 1979).

The desired level of inter-coder reliability achieved from coding the training tapes was arbitrarily set at .65. The actual average reliability obtained was lower than Beavers, who obtained .42. Beavers has been critized for low interrater reliability (Olson, Russell & Sprenkle, 1983). Further training was given for those scales that did not reach .65. This level of accuracy was needed to make sure training was consistent and that this coding process could be replicated.

Before any of the tapes were coded in this session, further training was given on specific items. Those items on the scale that the coders did not reach .65 reliability (eg. expressiveness, mood and tone, empathy, negotiation, responsibility and invasiveness), as well as those items which the Beavers-Timberlawn group specified as being particularly difficult for their raters (Lewis et al., 1976), were given more review before the coders began scoring. Those items the Beavers-Timberlawn group reported rater difficulty on were closeness, communication of self-concept, power structure, and mythology. Hartmann and Gardner (1981) emphasized the importance of checking interrater reliability at the training phase as a two stage procedure: 1) accurate and precise observations, and 2) generalizable observations. Both of these procedures were attempted by planning intense training and checking reliability with the Pearson Product Moment Correlation.

Interaction Coding

After training, two coders viewed and coded the family interaction for all 5 families. Both coders were experienced Marriage and Family Therapists and both had the same training for coding. Neither coder was informed of the problem statement or hypotheses of this study, to guard against observer bias (Hollenbeck, 1978).

The coders observed the second session of the study on videotape. In this second session, the families completed revealed difference tasks 2, 3, and 4, and answered open-ended diabetic questions. The problem solving tasks required the families to come to a consensus on three selected, revealed difference questions. The coders were asked to view the last 10 minutes of the problem solving section for the five diabetic families. They also viewed the first 10 minutes of the open-ended diabetic questions. The diabetic questions were designed to get at the family's knowledge and attitu[illegible] diabetes, the amount of disruption diabetes had on the fam[illegible]d the overall coping ability of the family. These 20 minutes of tape were intended to be a representative sample of behavior for each family in the study.

The coding of the five families was done with both coders present. However, they were not allowed to discuss the code. Each tape was only viewed once. After viewing two tapes, the coders reviewed the glossary and detailed descriptions of terms and took a break, just as in training. They were as resistant to the review in the coding session as they were in the training session.

Chapter 5

RESULTS

The present chapter contains a description of the healthy family validation data from the Kieren and Hurlbut (1985) study as well as a summary of data collected to answer the primary research questions. The primary research questions were: 1) What is the nature of family interaction patterns for healthy families who include an adolescent member with diabetes and who perceives his or her management of the disease as being good? 2) Is there a relationship between these family interaction patterns (the family's affect, goal-directed negotiation, autonomy, power structure, and mythology), and the adolescent diabetic management variables of: accepting and adjusting to the management of the disease, creating a family management pattern conducive to managing the disease, and attaining an appropriate level of physiological control. This chapter is organized in five sections: 1) Healthy Family Validator; 2) Inter Family Comparisons of Family Interaction; 3) Intra Family Comparisons of Family Interaction; 4) Diabetic Management Scores; and 5) Relationships Between Family Interaction and Diabetic Management.

Healthy Family Validation Data

To be included in the study, families made an initial assessment that they were a relatively well functioning family. In order to validate the family's subjective assessment of their family functioning, three questionnaire measures were used in the original study: Faces II (Olson, Portner & Bell, 1983), scores on the total family strength scale (Olson, Larsen & McCubbin, 1982), and individual answers to the single question, "We are a healthy family."

All three measures of family functioning confirmed the initial family assessment, that each family that participated fell into the range for healthy families. All family scores on Faces II (Olson, Portner & Bell, 1983) indicated healthy levels of family functioning. The mean score for each family was 2, which put them in the midrange or healthy range.

Scores on the Family Strengths Scale consisted of a total scale score and two subscales, pride and accord. All family scores were well into the healthy range (mean = 3.92).

The question "We are a healthy family" was responded to by each family member on a 5 point Likert scale. A response of 5 indicated strong agreement and a response of 1 showed strong disagreement. The mean for each family was 4 or better, which reflects that each family felt they were a healthy family. Only in one family did each respondent give their family a 5.

Data Analysis

To present the findings, descriptive statistics and family profiles will be used.

Measure of Family Interaction

Family interaction was measured by the trained raters using the Beavers-Timberlawn Family Evaluation Scale. The trained raters were outside observers of the family's interaction. This measure is a family level assessment. Family scores on the Beavers-Timberlawn Family Evaluation Scales are the major variables.

Each family was coded by two trained raters, using the Beavers-Timberlawn Family Evaluation Scale. A mean rater score was used to report the data. All scores on the scale are reported so that 1 represents the healthy end of the continuum and 5 the pathological end of the continuum.

Inter-Family Comparisons

Tables 1 - 15 report the between family comparisons of family interaction. A comparison line has been drawn on each table dividing the healthy/less healthy areas on the subscale. The descriptions provided for the scale were used to determine where the comparison line was drawn.

Family Affect

Affect is the various aspects of feeling expressed in families. This variable is measured by four subscales: Expressiveness; mood and tone; conflict; and empathy.

Expressiveness.

Expressiveness measures the degree to which the family system encourages the open communication of affect. All five families fell in the healthy range on this affect variable. The comparison line for a healthy level of affect was established at 3 and was described as restricting some feelings, but still expressed feelings. Table 1 summarizes these findings. While there was a range of 1 to 3 on this subscale, the families appeared to form two groups. Families 1 and 2 were similiar and had a rating indicating greater expressiveness, whereas Families 3,4 and 5 appeared to

TABLE 1 : Mean Rater Scores of Expressiveness for Five Diabetic Families

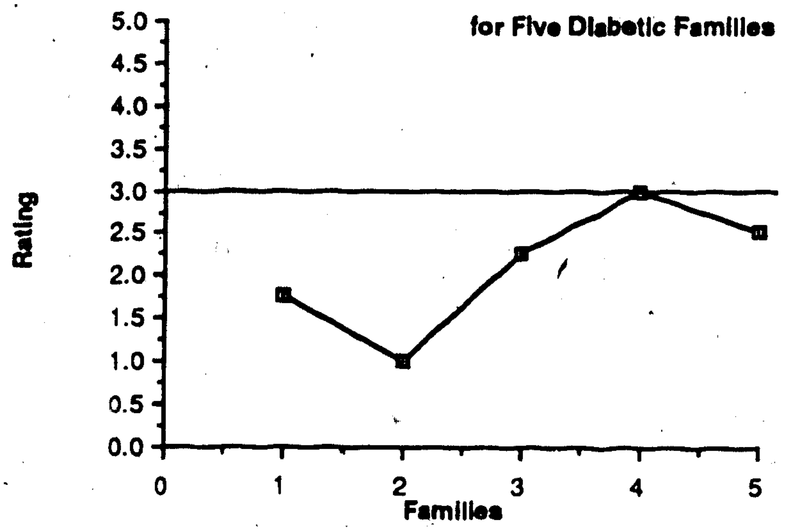
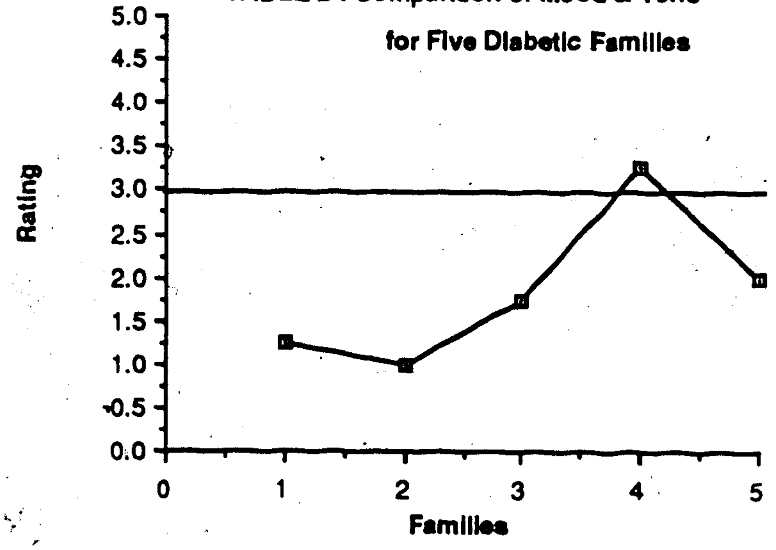


TABLE 2 : Comparison of Mood & Tone for Five Diabetic Families



clump at the 2 - 3 level and were more restricted in their expression of feelings.

Mood and Tone. This subscale assessed the feeling tone of the family's interaction. Point 3 marks the comparison line for health. Even though the descriptor for 3 is overtly hostile, it is still considered the midrange between optimism and despair. Two families were very close in their warm, affectionate, humorous and optimistic feeling tone. Two families fell into the more polite range, yet all four still remained in the healthy range. One family exhibited some behaviors that indicated hostility and fell just outside the healthy range. Table 2 reports the findings. Families 1 and 2 appeared to have similiarities of ratings again on this variable and 3, 4, and 5 appeared to form another group, although family 4's rating appeared to be an outlier.

Conflict. The conflict subscale measures the degree of seemingly unresolved conflict observed during interaction. The comparison line of 3 marks interaction characterized by conflict, but the family functioning is only slightly impaired. All families were within a point of each other in the healthy range, indicating low

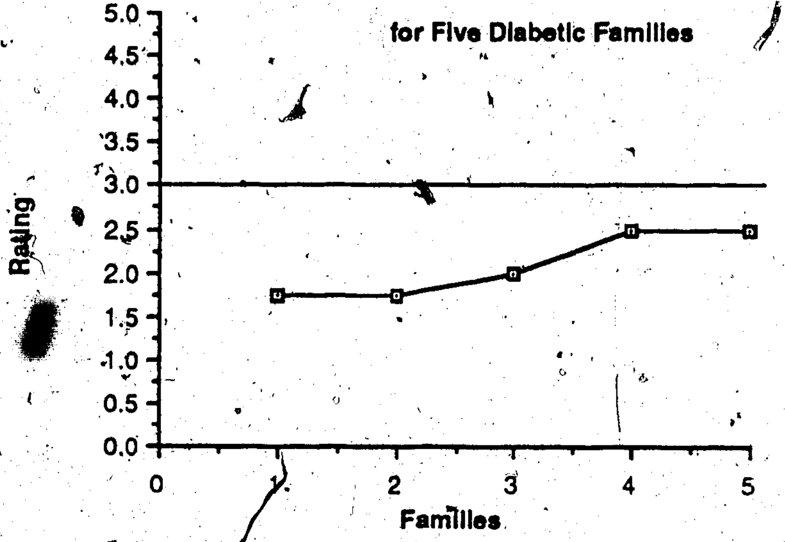


TABLE 3 : Mean Rater Scores of Conflict for Five Diabetic Families

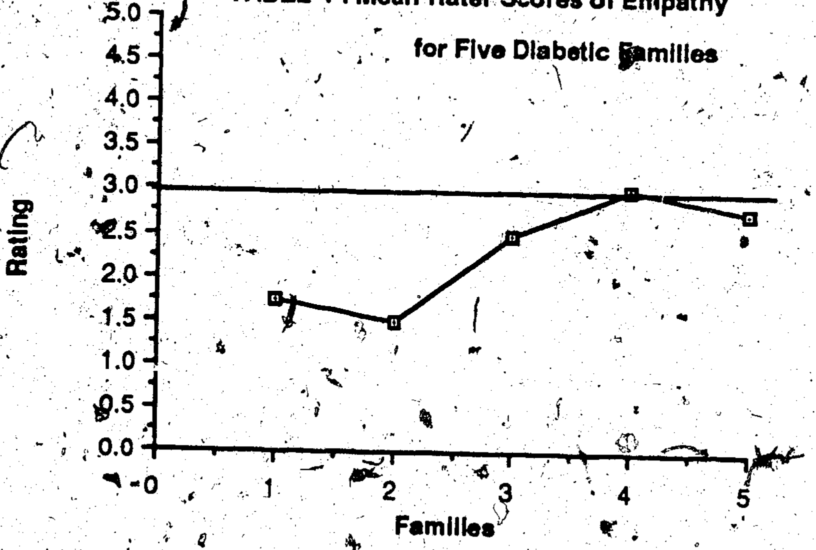


TABLE 4 : Mean Rater Scores of Empathy for Five Diabetic Families

observed conflict. Table 3 reports the findings. The same pattern for families 1 and 2 and then 3,4, and 5 respectively, is apparent, but is less dramatic on this variable than on the previously discussed variables.

Empathy. Within these families, the degree of sensitivity to, and understanding of, each other's feelings was assessed as empathy. The comparison line was drawn at 3, where the family still shows empathy toward one another. The family scoring closest to the comparison level attempted empathetic involvement, but failed to maintain it. Conversely, the family scoring closest to the healthy end of the continuum had consistently empathetic responses. The pattern observed previously for families 1 and 2, compared with 3,4 and 5 was evident on this variable as well. Table 4 summarizes the findings.

Goal-Directed Negotiation (Goals)

This subscale assessed a family's overall efficiency in negotiation and problem-solving. The comparison line drawn at 3 marks the line between good and poor negotiation. The findings reported in Table 5 all fell within a point of each other and remain in

Table 5 : Mean Rater Scores Of Goals Directed Negotiation for Five Diabetic Families

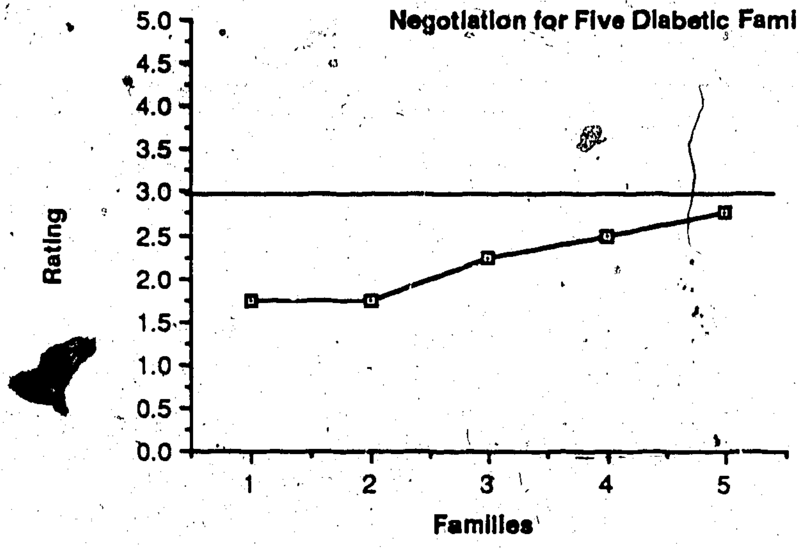
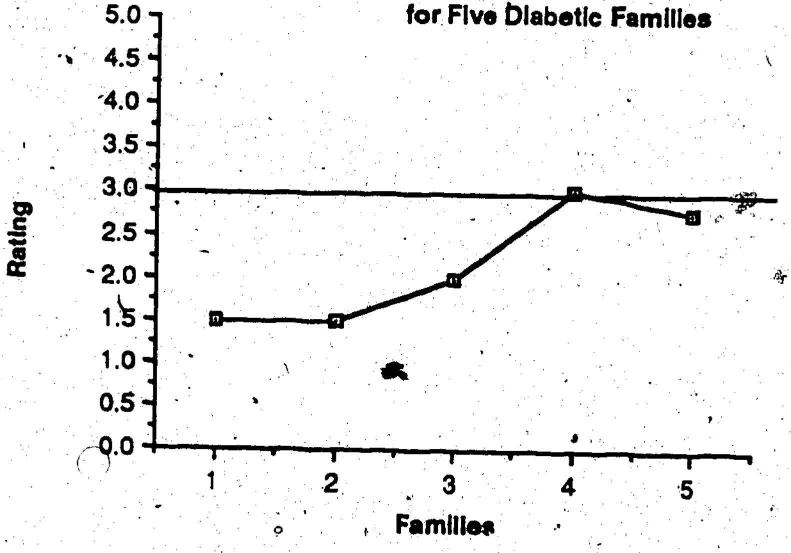


Table 6 : Mean Rater Score of Self Concept for Five Diabetic Families



the healthy range, indicating each family is extremely efficient or good negotiators. Again the same pattern for families 1 and 2 compared with 3, 4 and 5 was evident.

Autonomy

Autonomy is the degree of family individuation. This variable is measured by four subscales which are: communication of self-concept, responsibility, invasiveness, and permeability.

Communication of Self-Concept. The quality of clarity of disclosure of feelings and thoughts is assessed by this scale. The comparison line was drawn at 3, which is described as communicating about self-concept in a somewhat vague manner. All families were scored as falling within the healthy range. The ratings of families 4 and 5 described them as somewhat vague and hidden in their disclosure of feelings and thoughts, yet this rating is still within the healthy range. Table 6 reports the findings. In this assessment the patterns for families 1,2, and 3 are more alike, compared to families 4 and 5.

Responsibility. This scale measures the degree to which family members take responsibility for their own thoughts, feelings and

Table 7 : Mean Rater Score of Responsibility for Five Diabetic Families

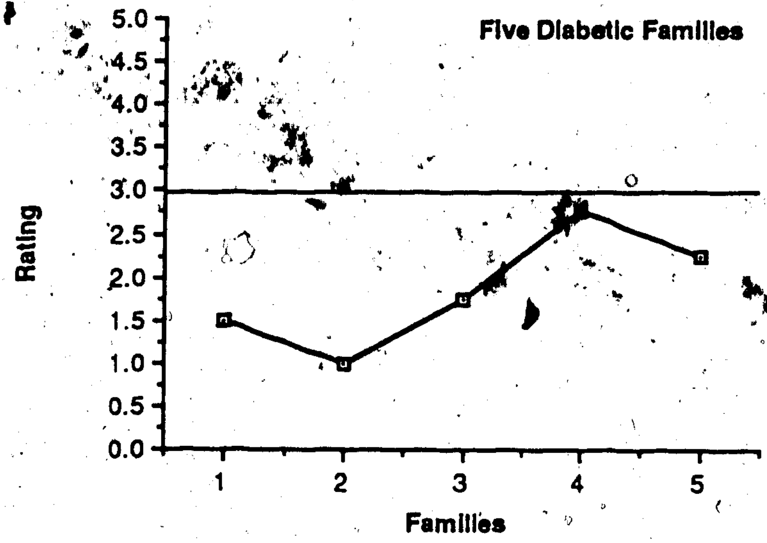
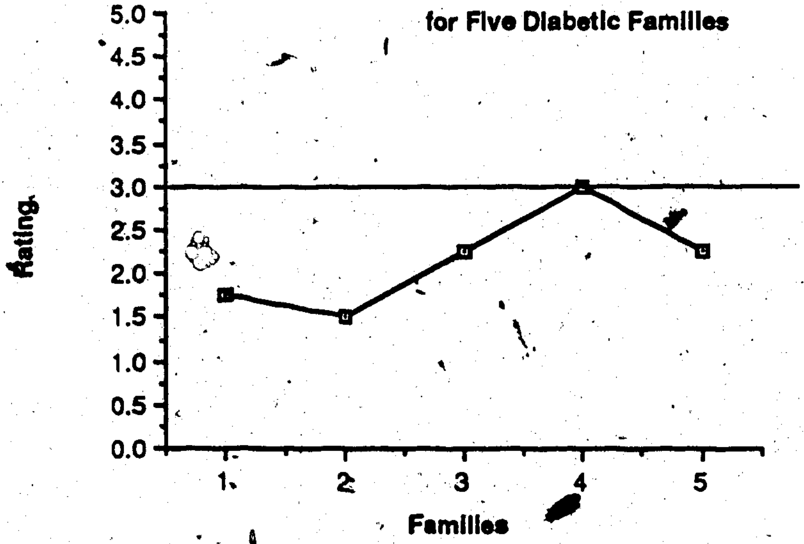


Table 8 : Mean Rater Score of Invasiveness for Five Diabetic Families



actions. All families were rated as being able to regularly voice sometimes take responsibility for their own selves. Again, families 1,2, and 3 had a more positive rating than families 4 and 5. Table 7 summarizes the findings.

Invasiveness. The invasiveness sc[illegible]ed the extent to which families tolerate[illegible]couraged members to speak for one another. The compa[illegible] at 3 was drawn to mark the difference between few and many invasions. Each family was observed to have some invasions, but the ratings remained in the healthy range. Table 8 reports the findings. Families 1 and 2 showed less signs of invasiveness than did families 3,4 and 5.

Permeability. This scale measured the degree to which the family system was open, receptive and permeable to the comments of its members. The comparison line was set between openness and unreceptiveness between members of the family. Families 1 and 2 were assessed as being very open to each other and the other three families were moderately open to each other. There was only a single point difference among all families, and all were in the healthy range.

The findings are reported in Table 9.

Structure of the Family

The major variable Structure of the Family refers to how the family has arranged itself. The subscales under this variable include: overt power, parental coalitions, closeness, and power structure.

Overt Power. The overt power scale measures the power structure of the family. The point 3 comparison line marks the point between moderate and marked dominance scores. Below 3 indicates there still is some negotiation between the family members. The range was very narrow with a difference between all families a mere .75. All the families fell in the 1.5 - 2 range described by a tendency toward a dominance and submission power structure, yet the majority of the interaction was respectful negotiation. These ratings would however, be considered to be indicators of health. Table 10 reports the findings. On this scale, if the score fell between 2 and 4, the rater was asked to indicate who was #1 and #2 in power. Table 11 summarizes the results. The raters only agreed on the assessment of power in one family.

Table 9 : Mean Rater Score for Permeability
for Five Diabetic Families

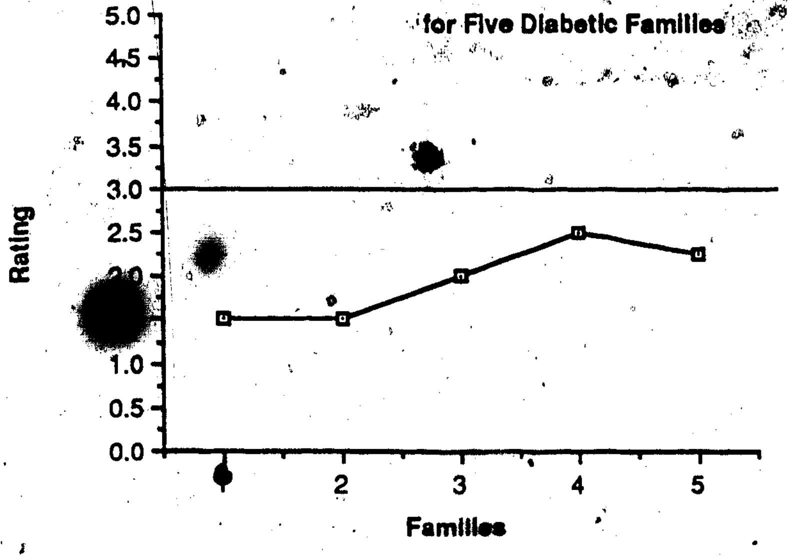


Table 10 : Mean Rater Score of Overt Power
for Five Diabetic Families

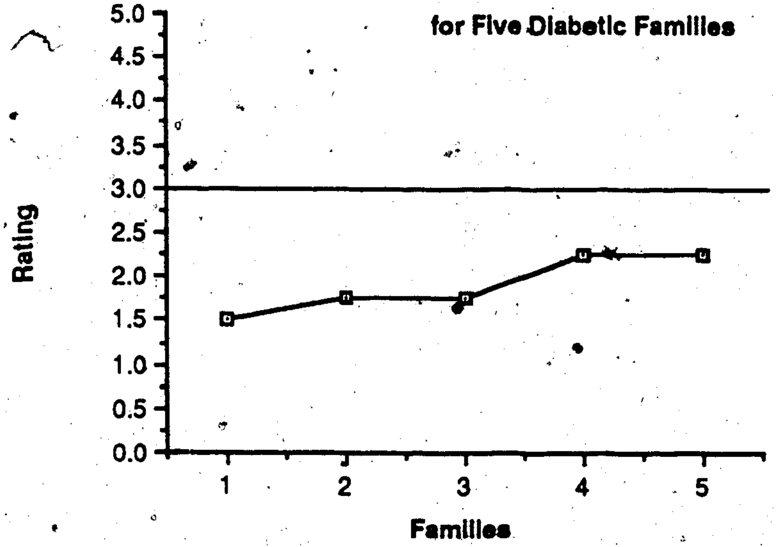


Table 11 : Rater Scores of Persons in Power

FAMILY	RATER A		RATER B	
	#1	#2	#1	#2
01	EGAL.	EGAL.	FATHER	MOTHER
02	FATHER	MOTHER	MOTHER	FATHER
03	EGAL.	EGAL.	CHILD	MOTHER
04	MOTHER	FATHER	CHILD	MOTHER
05	MOTHER	FATHER	MOTHER	FATHER

EGAL. = EGALITARIAN

Otherwise, there was wide variability in the ratings. Rater B identified two child led families, whereas Rater A had no child led families. Each rater recorded two mother led families, but not the same families. These discrepancies may have resulted from any or all of the following reasons: the descriptions on the scale were unclear; there was no specific training on this aspect of the scale; or the differences in the assessment of power generated by the rater's personal view of power. In a recent article, Beavers (1986) noted that the raters could easily agree on families when scoring "overt power," but found it difficult to agree on who the particular person was possessing that power.

Parental Coalitions. This scale measured the relationship structure of the family. Research and clinical findings suggest the importance of this measure to the overall health of the family. The comparison line was drawn at 3, which is described as a weak parental coalition, yet the parents are still in charge of the family. Two families were assessed as reflecting strong parental coalitions. The other three families were perceived as having weaker parental coalitions, but they still fell in the healthy range. Table 12 reports

Table 12 : Mean Rater Score for Parental Coalitions for Five Diabetic Families

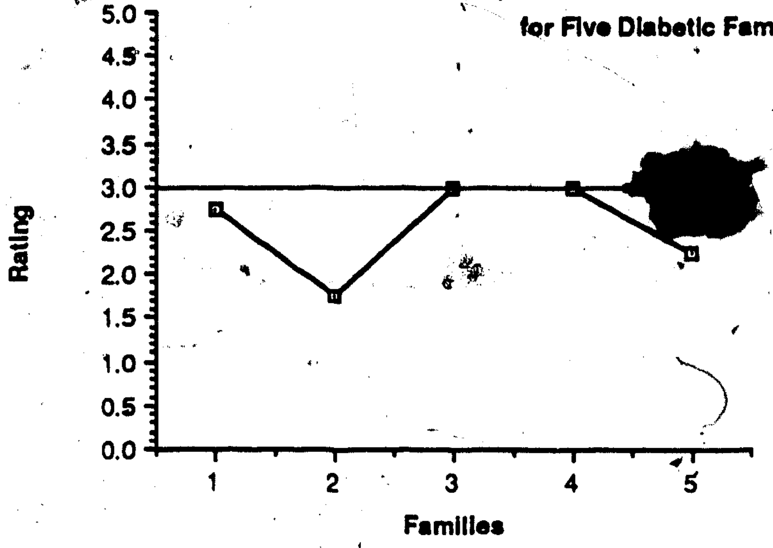
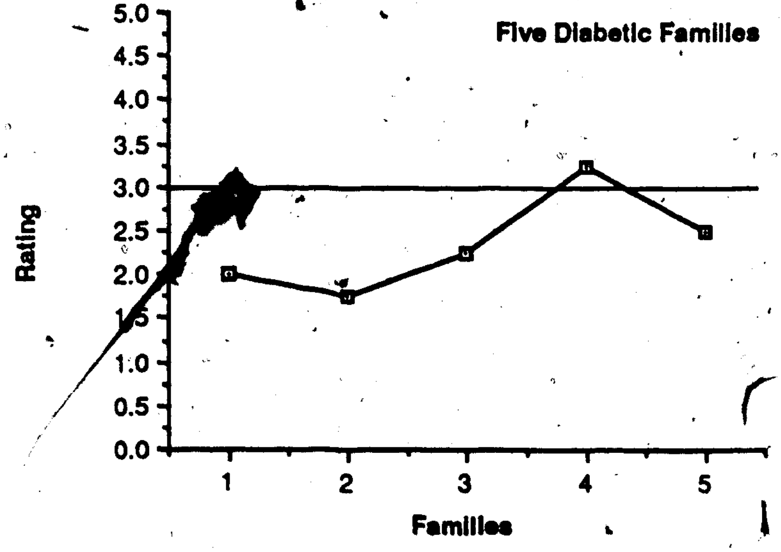


Table 13 : Mean Rater Score for Closeness In Five Diabetic Families



the findings. On this subscale a different grouping of families is indicated. Families 1, 3 and 4 have some similarities, as do families 2 and 5.

Closeness. Closeness involved two aspects, the presence or absense of distinct boundaries between individuals in a family and the degree of closeness. Point 3 arbitrarily divides the place in which the family members are close with distinct boundaries. This subscale records only the second time where one family was not in the healthy range. Family 4 was assessed as showing isolation and distancing of family members, whereas families 1,2,3 and 5 were assessed as closer with distinct boundaries. The results are reported in Table 13.

Power Structure. This scale was not included in the Beavers-Timbelawn report on family scores (Lewis et al., 1976). The power structure scale tells us about the rater rather than the family, which is different from the other scales. The families varied the least on this scale. There was only .5 difference between families. This assessment reports that the power structure was easy to assess, yet the discrepancies of the report on overt power indicate

Table 14 : Mean Rater Score for Power Structure in Five Diabetic Families

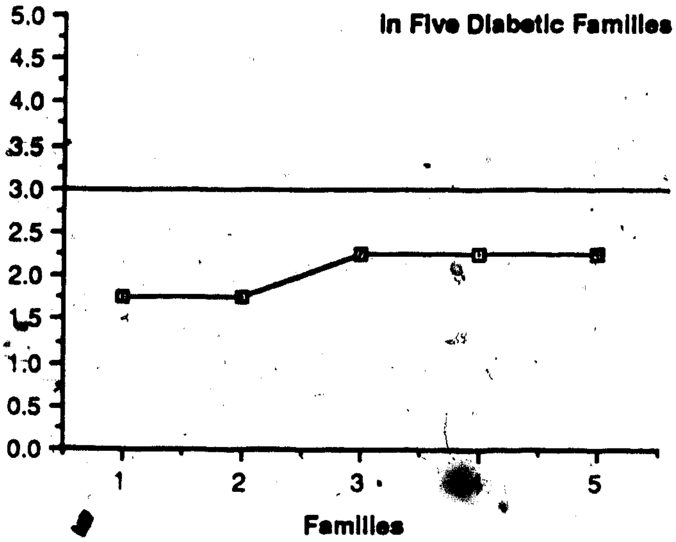
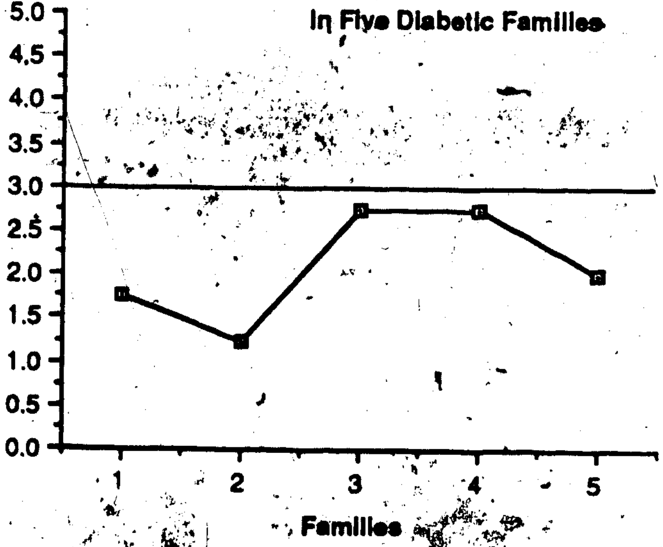


Table 15 : Mean Rater Score on Mythology in Five Diabetic Families



that, in actuality, it was not easy. Table 14 reports the results.

Mythology

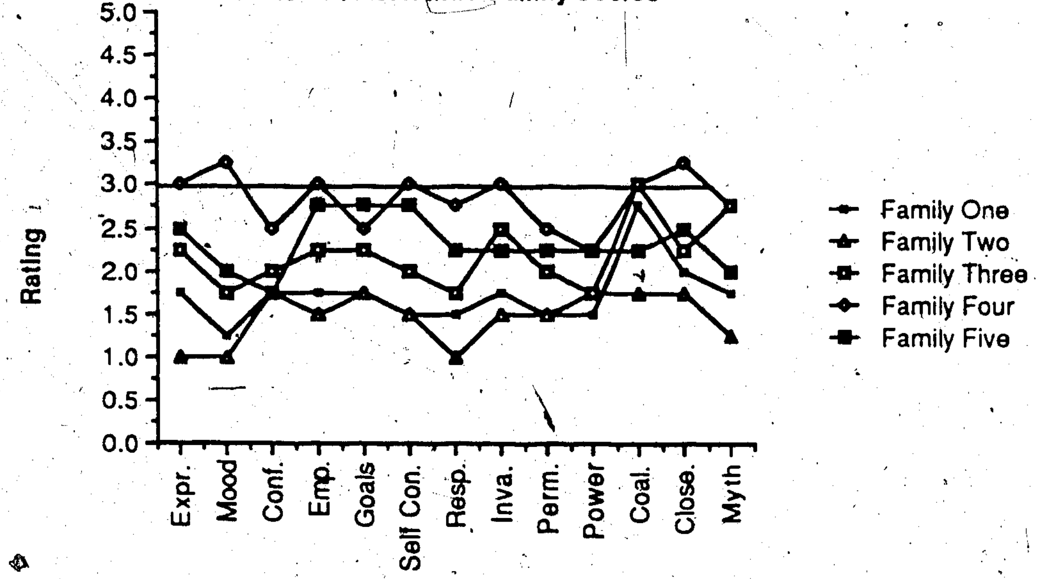
The mythology scale rated the family member's perception of reality. The comparison line was drawn at 3 to mark the place between where there is more congruency than incongruency in member's perception of reality. Two families, 3 and 4, were rated as being less congruent than the other three families. All families, however, fell in the healthy range. Table 15 reports the findings.

Intra-Family Comparisons

This section describes and observes each family individually and compares their overall performance on each scale, in order to create a total family profile on the entire Beavers-Timberlawn Scales. Table 16 summarizes these findings. An interfamily comparison, or total family interaction, is also shown in Table 16.

Family 1. Most of the scores for this family had little variability. Mood and tone scores fell into the healthiest ranges and the parental coalitions assessment was the least healthy. Even though the rating of the parental coalition was not as healthy as the rest of the scores, it still fell in the healthy range. Families 1 and 2

Table 16 : Mean Intra-Family Scores



were consistently rated the healthiest of the sample families on all points, except for family 1's parental coalitions.

Family 2. This family also had a very healthy profile. There is only a difference of .75 between the scores on any subscale. Expressiveness, mood and tone and responsibility were scored at 1, which was the healthiest score possible on this scale. Family 2 had the healthiest profile of all five families.

Family 03. The three healthiest scores for this family were mood and tone, responsibility and overt power. Conversely, their least healthy ratings were parental coalitions, mythology and invasiveness. Like Family 1, the evaluation of parental coalitions was the outlier.

Family 04. This family's ratings seem to be the least healthy of all the families studied. Mood and tone and closeness fell outside the line demarking the range established for a healthy family. Expressiveness, empathy, self-concept, invasiveness and parental coalitions fell on the line. The remaining 6 scores, out of the 13, remained in the healthy range. Even though two scores fell outside the healthy range, the remaining scores indicated that this is still a adequately functioning family.

Family 05. The healthiest rating on this family was on the conflict scale. The three least healthy ratings were empathy, goals and self-concept.

Summary

All the family interaction ratings were in the healthy range, yet there was some variability within that range. A few patterns emerge from the data. Two families, 1 and 2, were rated consistently healthier, on nearly all the scales. The other three had relatively similiar, but slightly less healthy, ratings on expressiveness, empathy, goals, invasiveness, permeability, parental coalitions and closeness. One family, #4, nearly always showed signs of lesser health than the other four.

The results of the group comparison of family interaction data reported here and assessed using the Beavers-Timberlawn Scale are consistent with the scores obtained from the other three family health indicators in the larger study, namely that all 5 families' interaction fell into the healthy range.

Global Health-Pathology Scale

This scale is a global assessment of the overall health of the family. The data again indicated variability among the families, even though they all fell within the healthy range. Two families (1 and 2), were rated healthier than the other three families. Table 17 reports the findings of the global assessment of the families' health. The rating obtained using this single item measure was consistent with the assessment of the specific categories on the Beavers-Timberlawn Family Evaluation Scale.

Diabetic Management Scores

The diabetic management scores are the dependent variables in this study. The variable was measured by one family level assessment of management, namely the Lehman: Management of Diabetes, and two individual level measurements, the DAS and Diabetic Control Question. The findings on diabetic management will be summarized in this section.

Lehman: Management of Diabetes

This measure of management was observed in a videotaped interview and was assessed by ratings on three scales: Knowledge of

Table 17 : Mean Rater Scores of Global Assessment in Five Diabetic Families

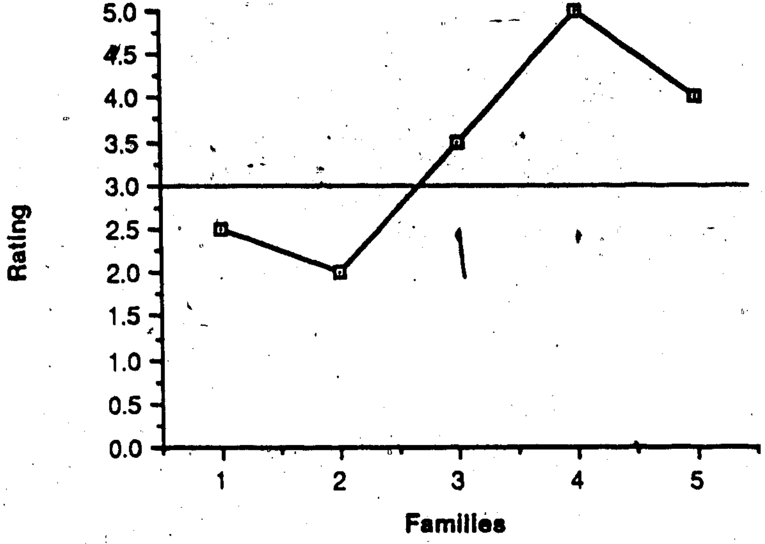
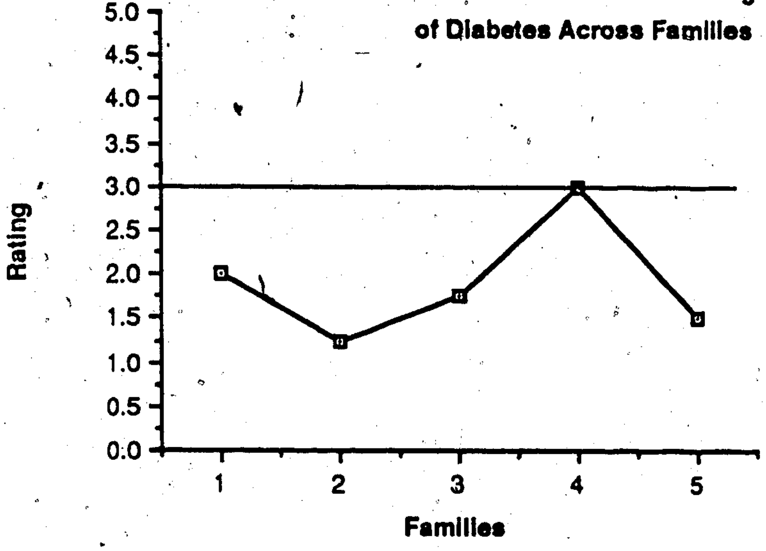


Table 18 : Mean Rater Scores of Knowledge of Diabetes Across Families



Diabetes, Empathy to the Adolescent Diabetic, and Acceptance of the Disease. The ratings on this measure were carried out in the same way as the rest of the Beavers-Timberlawn Family Evaluation Scale, since this was the last section of the scale. This is a family measure.

Knowledge of Diabetes

Knowledge of Diabetes assesses the degree to which the family seems aware of the facts about the disease and the way it influences the family. All the families' ratings fell within the healthy range. Family 4 however, was rated as being less aware of diabetes than the rest of the families, but still fell in the healthy range. Table 18 reports the findings.

Empathy to the Adolescent Diabetic

This scale rated the degree of sensitivity to, and understanding of, the parents toward the adolescent. All the families were in the healthy range except one, family 4. This family was just outside the range, yet was rated as being noticably less empathetic than the rest of the families. Table 19 records the findings.

Table 19 : Mean Rater Score of Empathy to the Adolescent Diabetic Across Families

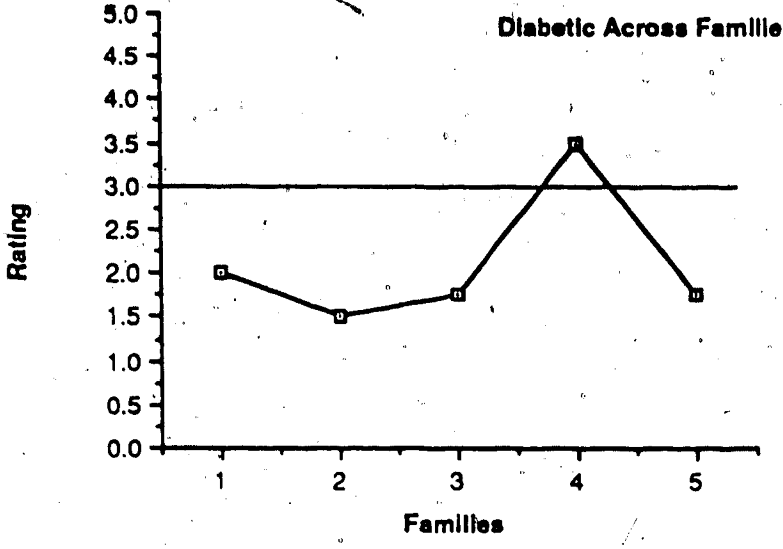
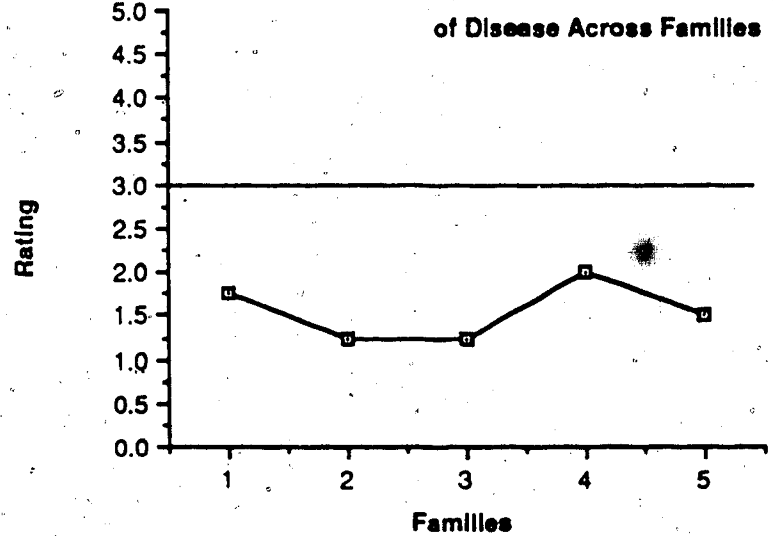


Table 20 : Mean Rater Scores of Acceptance of Disease Across Families



Acceptance of Disease

Acceptance of Disease measured the degree to which family members were open to the management of the disease. All families were rated as falling in the healthy range. There was little variability between the families on [illegible] measure. Table 20 reports the findings.

Summary

All 5 families fell within the healthy range on these subscales. Family 4 was the outlier on Knowledge of Diabetes and Empathy to the Adolescent Diabetic. The other families seem to form a similiar pattern to each other on the above mentioned scales. All families seem to accept the disease quite well.

Overall Level of Coping Ability with Diabetes

This is an global measure to rate the degree of the family's general management of the disease. Each family's rating fell in the healthy range. Table 21 reports the findings.

Diabetic Control Question

The most precise measure of diabetic control would be a physiological measure of blood sugar such as the HbA1c test (Ross, Hunt, & Lillie, 1983). This was not possible in the present study. Instead, family members reported their perception of the adolescent's level of diabetic control. Each family member was asked a series of questions regarding diabetic metabolic control. Only one question was selected to be used as the indicator, which was: How often each week does metabolic control go outside the acceptable range?

Only the adolescent's response was used, since the parents indicated that the adolescent kept track of this aspect of diabetic control, thus they could not answer the question. The choices of responses to the question were: never, rarely, often, very often, always, and I don't know.

The adolescent responses to this question were surprising, given the other findings. Adolescent 5 responded by putting "never" being out of control in a given week. Adolescent 1 and 4 responded "rarely" being out of control in a given week. Lastly, adolescents 2 and 3 responded that they are "often" out of control in a given week.Possibly the adolescents interpreted this question differently than was intended, or the question could have been poorly worded.

Diabetic Adjustment Scale (DAS)

The DAS (Sullivan, 1979a, 1979b) is an individual measure of the adolescent's own perception of his adjustment to diabetes. The scale was divided into the following subscales: dependence-independence, school adjustment, family relationships, peer adjustments and attitude toward diabetes and their body. Total scores ranged from 50 for good adjustment to 250 for poor adjustment. The subscales ranged from 8 for good adjustment to 75 for poor adjustment. Therefore higher scores reflect poorer adjustment.

Overall Diabetic Adjustment Score. This scale is a sum of scores rather than a global measure. It reveals the overall range of the adolescent's diabetic adjustment. All adolescents fell in the good adjustment range. Two adolescents have higher adjustment than the other three adolescents. Table 22 reports the findings.

Adolescent Scores: DAS.

Each adolescent fell in the good adjustment range on each individual subscale. Scores on one subscale, attitude toward diabetes and their body, consistently indicated poorest adjustment for each

Table 21 : Mean Rater Score of Overall Coping Ability to Diabetes

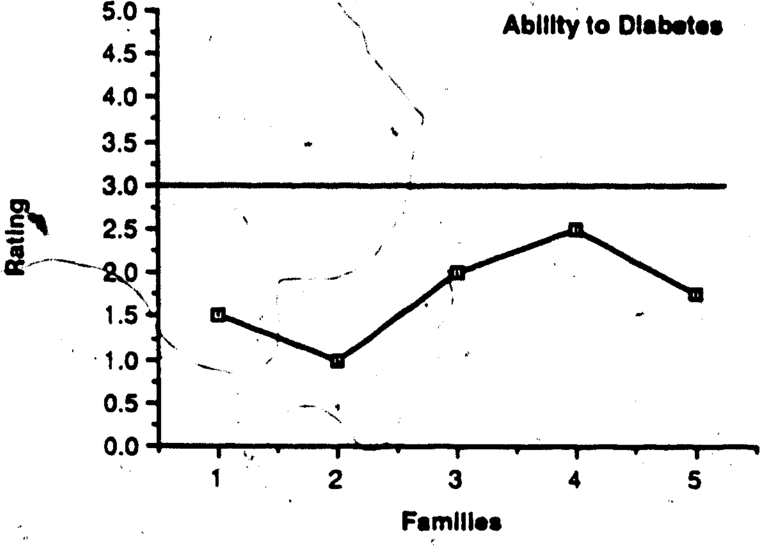
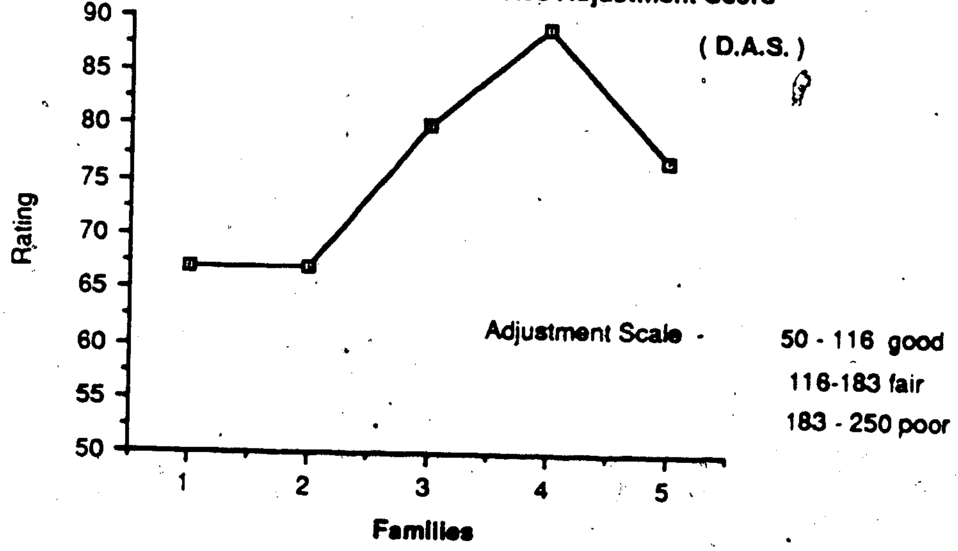


Table 22 : Overall Diabetes Adjustment Score (D.A.S.)



adolescent. Table 23 reports the findings. Again adolescent 1 and 2 were assessed as having better adjustment than the other three adolescents.

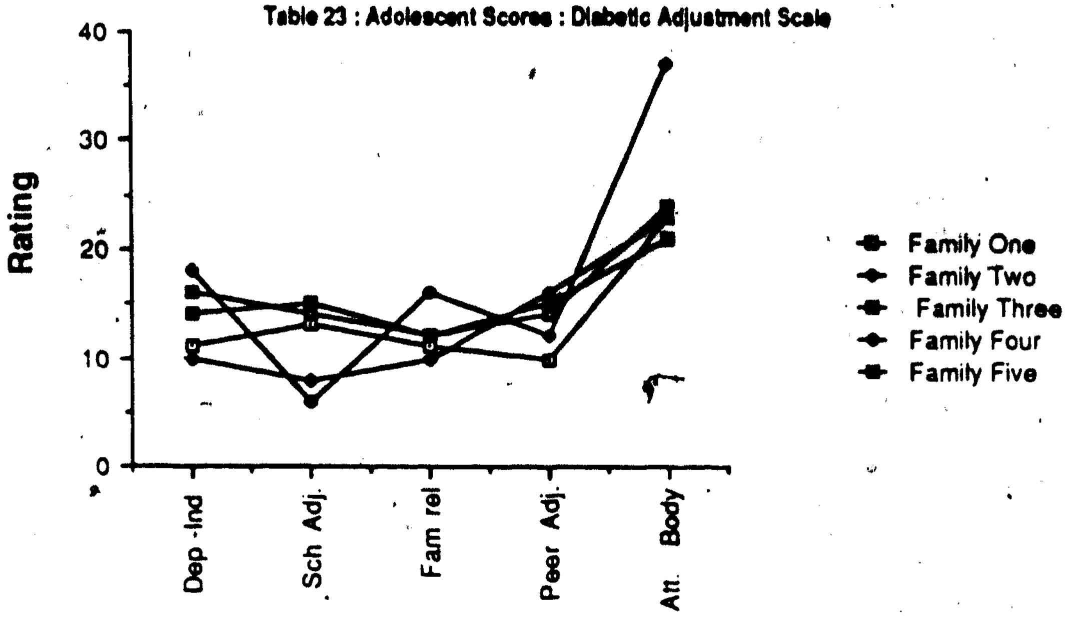
Relationship Between Family Interaction and Diabetic Management

Since this study was exploratory, the intention was to generate hypotheses, rather than test them. None-the-less, the relationship patterns between variables can be demonstrated and so are proposed for further testing. Therefore, in this section, the patterns found in the relationship between family interaction variables and management of diabetes will be discussed.

Relationship Between the Global Health-Pathology Scale and Overall Coping Ability to Diabetes

In comparing the rating on the Overall Coping Ability of the family to diabetes score with the Global Health-Pathology Scale, the results are very similiar. The same family on both scales was rated the healthiest. Likewise the same family on both scales had the poorest adjustment. A difference, however, was that even though the basic pattern of the tables were the same, the families tended to have higher ratings on their level of coping with diabetes than on

Table 23 : Adolescent Scores : Diabetic Adjustment Scale



family interaction.

Relationship Between the Global Health-Pathology Scale and the Overall Diabetic Adjustment (DAS) Score

In comparing the family scores on two scales, the results are very similiar (See Tables 17 & 22). Even though the Health-Pathology Scale was a global measure and the DAS score was a sum of scales, the results were nearly the same. The two families, 1 and 2, that were rated the healthiest on the Global Health-Pathology Scale also had the highest adolescent levels of total adjustment on the DAS. Family 4, that had the least healthy score on the Global Health-Pathology Scale also had the poorest level of adjustment score on the DAS.

Relationship Between the Beavers-Timberlawn Family Evaluation Scale and Lehman: Management of Diabetes

The patterns that emerged from the Beavers-Timberlawn Family Evaluation Scale (Lewis et al., 1976) and the Lehman: Management of Diabetes showed the relationship between family functioning and diabetic management. On both of these measures, healthy ratings on family functioning for families 1 and 2, as measured by the Beavers-Timberlawn Family Evaluation Scale, related to high levels of management, as measured by the Lehman: Management of Diabetes. However, on the Beavers-Timberlawn diabetic questions, only Family 4 was an outlier and families 1,2,3, and 5 had similiar assessments. Perhaps the raters did not have enough information to rate the families accurately.

Relationship Between the Beavers-Timberlawn Family Evaluation Scale and Perceived Adolescent Diabetic Control

The relationship between these two variables was surprising. Family 2 was consistently rated the healthiest on nearly all the subscales on the Beavers-Timberlawn Family Evaluation Scale (Lewis et al., 1976). Yet, on the diabetic control question, the adolescent from Family 2 responded as often being out of control, which represents at best a medium level of control for an adolescent. Conversely, the adolescent in Family 4, which was assessed as the least healthy of these five families on the Beavers-Timberlawn Family Evaluation Scale, responded to the diabetic question as being "rarely" out of control, which represents a high level of control. The relationships between both measures seem consistent for Family 1.

Family 1 has had an assessment of health and the response on the diabetic questions was "rarely," or high control. Adolescent 5 responded as being "never" out of control and adolescent 3 responded as "often" being out of control, yet, on the Beavers-Timberlawn Family Evaluation Scale, assessments were very similiar between these two families.

Several possibilities for the discrepancies are as follows. First, the questions may have been unclearly stated. Secondly, each adolescent may have interpreted "out of control" differently. The adolescent diabetic literature suggest adolescents fall out of control often, or have a medium level of control. Thirdly, the adolescent's could have skewed their answers in order to look better. Lastly, an adolescent may go out of control often during the week, but compensate by adjusting food, insulin, or exercise. In further studies, a more precise measure is needed to assess metabolic control. Many studies use hospital reports or blood tests, such as the HbA1c. In addition, using multiple measures to assess metabolic control would possibly give a more accurate measure.

Relationship Between the Beavers-Timberlawn Family Evaluation Scale and the Diabetic Adjustment Scale (DAS)

A similiar pattern was found on both measures, even though the Beavers-Timberlawn Family Evaluation Scale (Lewis et al., 1976) was a family measure and the DAS was an individual measure. The findings on both assessed families 1 and 2 as having a better assessment than families 3,4, and 5.

Summary

There appears to be a relationship between family interaction and diabetic management. A clear pattern has emerged for a small homogeneous sample, with only a narrow range of family functioning and diabetic control. With a broader range on both the family functioning and diabetic management variables, the patterns might be even clearer. This study has laid the groundwork for some fruitful avenues of future research.

The patterns that were found between the variables appear to suggest that the following hypotheses could be tested:

1) There is a positive relationship on both the global and subscale scores of the Beavers-Timberlawn Family Evaluation Scale and the

global and sub scales of family measures of diabetic management.

2) There is a positive relationship on both the global and subscale scores of the Beavers-Timberlawn Family Evaluation Scale and the subscales and overall scores on the Diabetic Adjustment Scale.

3) There is no relationship between either the global and subscales scores of the Beavers-Timberlawn Family Evaluation Scale and diabetic management as measured by the adolescent's perception of being out of control in a given week.

CHAPTER 6

DISCUSSION AND SUGGESTIONS FOR FUTURE RESEARCH

This chapter contains a discussion of these issues: the key results of the study, the important methodological issues which emerged during the study of family interaction and diabetic management in diabetic families, the practical significance of the study, and recommendations for future research.

Discussion of Key Findings

Patterns of Family Interaction

It was not surprising that all family interaction scores in this study fell within the healthy range on the family interaction index used, since part of the inclusion criteria for the sample was their perception that their family functioned well. A distinct pattern of variability emerged for this apparently homogeneous group. Families 1 and 2 were consistently healthier than Family 4. This finding supported Lewis et al.'s (1976) suggestion that there is "no single thread" which describes healthy family interaction. No single thread means that there is no absolute pattern or recipe for healthy families. However, the Beavers' Model can help us see areas for improvement in all families, which is the basis for family enrichment. This is of particular importance for families which have to handle chronic illness, since it appears that when the family is functioning well, the illness is also in good control.

The Beavers-Timberlawn Scale appeared to be sensitive enough to detect variability among the families. The pattern that emerged from the data was that families 1 and 2 consistently scored the healthiest. Family 4, on the other hand, consistently scored lower, indicating a different pattern of family interaction than the other families.

In attempting to explain this variability among the families, an individual look at each family is necessary. This is done in an attempt to capture the unique pattern of healthy functioning which characterizes the family.

In Family 1, each family member was open and expressed their feelings directly. During the interview, the adolescent was somewhat reticent, but would occasionally introject statements to allow her viewpoint to be heard by her parents.

The mood and tone in this family was warm, positive and caring. They expressed supportive statements to one another when negative feelings were expressed and listened attentively to the person speaking.

Another strength of this family was the way that they discussed issues and continued to stay on target. This family was the only single wage earner family in the group, so the mother's role was primarily caring for her family. Nevertheless, the husband and wife had a respectful level of negotiation between them, and they both listened to their adolescent and drew out her viewpoint.

This family had members that were autonomous. Each member was visible and made his or her views known, even though the adolescent tended to be quieter than her parents. They took responsibility for their own actions and allowed each member to speak for him/herself (e.g., "I feel," "I think" kinds of comments).

Strength is evident in the structure of this family. In deciding who had the power however, the coders disagreed. One said the family was egalitarian and the other said the father was in control. Nevertheless, the power appeared to reside in the parental coalition.

One subscale rating which was lower than the others was the parental coalition. The family coalition was viewed at 3 or a weak parental coalition. In looking at the other ratings for this family, this rating seems inconsistent. A possible explanation for this rating was that during the observed part of the video clip, one of the parents sided with the child. However, this score was well within the established range for healthy functioning.

Family 2 was consistently rated the healthiest family. The affect in this family was strong. Each family member shared strength in expressing themselves. During the interview, the mother was more soft-spoken than her husband or adolescent, but she clearly expressed herself. This family displayed humor and warmth toward one another. They also allowed members to disagree and listened attentively to each other.

In negotiating, each family member seemed to take an active part. The adolescent displayed as much strength as the parents in negotiating. They were able to discuss issues thoroughly as well as stay at the task at hand.

Another strength of this family was in their autonomy. Family members were all distinct and stood out individually. They each took responsibility for their own thoughts and feelings, and did not talk for one another, yet were open to the ideas of each other.

The structure of the family was healthy for the adolescent stage of development. The overt power showed a dominance/submission pattern, but each family member contributed to decision-making. The parents had a strong coalition, which meant they possess a mutually supportive relationship. The adolescent showed respect for his parents, and the boundaries between parents and child were evident, yet the adolescent was given respect for his maturity level and the individual he was. As well, there was a closeness among all members. Finally, this family was congruent in the way it viewed itself. They seemed to feel good about being a family and displayed that type of confidence.

Combined, families 1 and 2 were rated healthier than the other three families on 10 out of the 13 subscales. Those subscales were as follows: expressiveness, mood and tone, empathy, goal-directed negotiation, self-concept, responsibility, invasiveness, permeability, closeness, and mythology. All of these qualities, except self concept and mythology, were also suggested as being associated with healthy family functioning in the literature (Baker & Lyen, 1981; Sargent &

Baker, 1983; Satterwhite, 1978; Wishner & O'Brien, 1[illegible]8).

Family 4, on the other hand, had a distinctly different pattern of functioning on these scales. It is not easy to pinpoint the factors influencing this family's unique interaction pattern. In looking at the scales, scores on mood and tone and closeness may provide some insight. These were two subscales in which this family's scores fell out of the established healthy range. In other words, in describing the family, the coders evaluated that there were overtly hostile feelings present with this family, as well as indications of isolation and distancing from one another. The hostility or distancing, was not at a pathological level, but may reflect an area for improved relationships. In being with this family, the distance among family members could be felt.

Those qualities that were on, or near, the established comparison line reflect a family whose members have difficulty in expressing themselves, and often speak for one another. They have more difficulty maintaining empathy for each other and were vague and somewhat hidden in communicating. For example, both parents said that the adolescent cares for her diabetes and she is very independent. Yet, when the adolescent said that she did not know if her teachers knew that she had diabetes, the mother quickly said that the teachers knew. It appears in this case that the mother is inconsistent. She verbally tells the adolescent "I trust you," but then took responsibility for the adolescent by telling the teachers about her daughter's illness. At least in this case, the words and actions were not congruent.

To summarize, this family had more hostility and distancing than the other families. Family members tended to speak for one another, were somewhat vague in communicating and were less healthy in their empathy for one another. Even though these interaction patterns were present, this family still remained in the healthy range.

In the patterns which comprise healthy family interaction, there is "no single thread." This indicates that there is no single pattern describing a healthy family. All of these families have strengths, yet all have interaction areas that need some work.

The Relationship Between Family Interaction And Diabetic Management

A relationship between family interaction and diabetic management is seen by the patterns shown in this small sample. The relationships demonstrated assisted in the generation of several hypotheses and led to several methodological suggestions.

In this study, the complex relationship between family interaction and diabetic management has been observed. Several studies have already established management of diabetes as a family issue (Cerreto & Travis, 1984; Gwinn et al., 1984; Klusa, Habblick, & Abernathy, 1983; Koski & Kumento, 1977; Kraemer, 1982; Sargent & Baker, 1983). Cerreto and Mendlowitz (1983) found management issues to involve the complex interaction of physical, psychological, family, social, and environmental factors. The pattern of relationship between family interaction and certain aspects of diabetic management was similiar (e.g., global, diabetic adjustment, and family interaction). It was different for adolescent perceived diabetic control. In the results chapter, the relationship between family interaction and diabetic management was reported on the global and subscale measures.

On the first management variable, accepting and adjusting to the realities of the disease measured by the Adolescent Diabetic Adjustment Scale, the same pattern emerged. On the DAS the adolescent in Family 4 was less adjusted than the adolescents in families 1 and 2, even though all families fell within the healthy range. The relationship between the two variables suggests some pattern of relationship, but the scoring procedure on the DAS has some difficulties.

The DAS has been used in several studies (Beck, 1967; Hauser et al., 1985; Rosenberg, 1965; Sullivan, 1979a, 1979b). It seems to be the best instrument designed to measure an adolescent's self-perception of diabetic adjustment. The scoring of this measure, however, needs further assessment. For example, in scoring the instrument, when a respondent circled the answer "does not apply," he or she received a zero. Some respondents used this answer frequently, subsequently improving their adjustment score. On the school adjustment scale, the adolescent from Family 2 marked "does not apply" seven times for such statements as "I tell my teachers I have diabetes" or "I would rather eat something I shouldn't than to tell people I have diabetes." The adolescent from Family 4 marked "does not apply" eleven times. Specificly, the use "does not apply" on the subscale, school adjustment, introduced surprising results. The adolescent in Family 4 scored the best adjustment. However the score is questionable since, out of 8 questions in the subcategory, the adolescent only answered 2. It is difficult to speculate about the factors which might influence this kind of response. Possibly the adolescent did not understand the questions or was resistant to answer the questions. It is hard to determine whether this answer really represented 'doesn't apply,' or if it indicated that the adolescents disliked the questions. The use of the response "does not apply" should be further assessed in future research, or use of a mean score considered.

Lastly, in questions relating to the attitude toward diabetes and the body, the adolescent's scores from Family 4 reflected much less adjustment than all the other adolescents in the study. The acceptance of the disease and the influences on the body must be more difficult for this adolescent. Johnson and Rosenbloom (1982) also found the importance of body image to diabetic management.

The second management variable assessed in the present study was creating a family management pattern conducive to managing the disease. A family's general ability to function appears to be linked to their ability to handle a chronic illness. For example, emotional fluctuations may change the level of glucose in the blood. Thus, when the family handles the level of stress in their family well, diabetic management is better (Simonds, 1979; Tattersall 1981; Cerreto & Travis, 1984; Jacobson and Liebovich, 1984 White et al., 1984). There appears to be a relationship between family interaction (e.g., both global and specific aspects of family interaction) and certain aspects of diabetic management.

The third management variable was measured by the adolescent's perceived level of diabetic control. The pattern of relationship between family interaction and this management variable was different than the previous two. The relationship between family interaction and physiological control was not in a similiar direction. It may be that the measure for physiological control needs greater precision than was present in this study. The measurement of physiological control, by this single question and by the adolescent's perceived assessment, may be an inadequate means of determining a physiological level of control.

In addition, using only the adolescent's perception of metabolic control assesses only insider information by the adolescent. Olson & Ryder (1970) stress the importance of using both insider and outsider information. The outsider information could be a metabolic assessment, such as a doctor's report on levels of metabolic control, or a quantitative measure of such things as the number of hospitalizations for diabetes, the number of insulin reactions, or the number of visits to the doctor.

Also, in regards to the diabetic control question, there is a question about the reliability of the response. The adolescent from Family 4 answered this question by stating she was "rarely" out of control, which represents a high level of control. Yet, one of the sessions for the study had to be postponed, since the adolescent had experienced a bad reaction and had to be stabilized. This may have been a one time experience, or it may have happened more frequently than the adolescent was willing to admit. It does raise a question as to the accuracy of the responses on the diabetic control question, especially in relationship to the other results for this family.

In conclusion, there appear to be relationships between family interaction measures and the diabetic management measures, which support the need for further study. Looking more closely at specific issues, the pattern of results are similiar, namely that the relationship between family interaction and diabetic management is different for Family 4 than for families 1 and 2. The relationship between family interaction and diabetic management is complex. The results of this study supports Cerreto and Mendlowitz's (1983) argument that there are many factors influencing diabetic management.

Management of diabetes is a complex area that needs to be further studied. For this study only selected issues of management were chosen out of many choices. There are still several unanswered questions concerning diabetic management, such as: Are there some issues of diabetic management which are more likely to be influenced by family interaction than others? How do physiological and adjustment measures of management relate to each other? Which management issues are more crucial than others? Needless to say, further clarification of management of diabetes needs to be done.

The pattern of relationships described between family interaction and diabetic management presents the area as a fruitful one for future research and gives clear support for further testing.

Methodological Issues

The methodology used in research study involves the resolution of specific issues. The present study involved observation and coding of family interaction. Thus, training coders in the use of the measurement techniques, assessing coder reliability, and comparing global versus subscale analysis were of particular interest. As a result of this thesis, several methodological contributions emerged. These included developing a training design for coders, who used the Beavers-Timberlawn Family Evaluation Scale, and making suggestions to refine the the use of Sullivan's DAS. Several of these issues lend to methodological suggestions.

Training of the Raters

Training of coders minimizes error and increases the validity of their coding (Haynes, 1978a). Training of raters is an important part of an observational study. Both coders in this study were experienced family therapists and they did not see the need, or value, of training for the coding task. In doing observational research, however, reliability and validity are dependent upon the coders and the accuracy of their training (Hartmann & Gardner, 1981). Since the training for the present study was planned according to the level of accuracy achieved by the coders, the total time commitment was not able to be determined until after the training was in process. Lewis et al., (1976) underestimated the time necessary to train coders, so his precedent was not very useful here.

In essence, the training involved asking experienced therapists to do a novel task. The task involved utilizing a specific framework to assess family functioning. One of the coders commented that, even though he knew systems theory, using the Beavers-Timberlawn Family Evaluation Scale (Lewis et al., 1976) involved a different perspective. Even though family therapists use different perspectives (e.g., theories such as strategic, Milan, structural) in their own therapy practice, they are often more comfortable with one or two. Thus, taking on this coding task was not as simple as expected.

Using the Beavers-Timberlawn Scale required some fine skills of observation and assessment. For example, some of the scales appeared to overlap (e.g., permeability and empathy). For that reason, in training, the definition of each subscale was clearly written in order for the coders to discern the differences between subscales.

It would appear that in further studies, training coders needs to be approached from the perspective of instructing the coders that they are trying something new, an instrument that is quite complex and their time commitment depends on how long it takes to learn the intricacies of Beavers' concepts. This approach would put the onus on the coder for time spent learning the coding, rather than on the researcher.

Assessing Reliability

Inter-coder reliability is used by researchers to check accuracy. Accuracy is important to see if the data are generalizable across coders (Hartman & Gardner, 1981). There are many different statistical tests of reliability: Cohen's Kappa, Chi square tests of independence, coder agreement and correlation.

The selection of an appropriate statistic for determining intercoder reliability proved to be difficult. First, the sample was small and, secondly, it was homogeneous. The Pearson Product Moment Correlation Coefficient is not the best statistic for homogeneous samples. Yet, after consulting several statisticians, it was agreed that the Pearson Product was still the best choice. One of the reasons for using the Pearson Product method was to enable the researcher to compare the results with those of the Beavers-Timberlawn study (Lewis et al., 1976), who likewise used it. The interrater reliability achieved using the Beavers-Timberlawn, have been modest at best in previous work. Wampler, Halverson, and Moore (1986) found .70 reliability, which was higher than Lewis et at., (1976) but lower than Green, Kolevzon, and Volsler (1985). The interrater reliabilities are low, as was the case in the present study. In addition, the homogenous character of the sample also may have affected the correlation coefficient. Still, using this statistic gave a benchmark figure to assess the coders on their level of accuracy and inter-coder agreement during training (Hartmann & Gardner, 1981; Haynes, 1978b). If reliability can be checked during training, then the results should have better accuracy in actual coding. In future research, coders might utilize consensus coding to increase the levels of reliability or simplify the code.

Global Versus Single Measure Issue

Another methodological issue which arose was whether the global measure might be just as useful and less time consuming to utilize, than the entire Beavers-Timberlawn Family Evaluation Scale. Since the Global Health-Pathology Scale reflected the same pattern as the Beavers-Timberlawn Family Evaluation Scale, an argument may be developed to justify using only the global measure and not bothering with the other subscales. However, as this researcher coded the data, the opportunity to assess the families on various subscales took on greater importance. It gave the coder criteria for an objective global assessment, which is more accurate than the global measurement by itself. A global measure separated from the other subscales would tend to be more subjective.

Recommendations For Future Research

The present study provided the basis for the researcher to generate the following recommendations for future research:

1. Refine the scoring procedures on the DAS.
2. Incorporate a more precise assessment of physiological control.

3. Further clarify which issues of diabetic management are more likely influenced by family interaction than others.

4. Refine the relationship between physiological, metabolic and adjustment measures of management.

5. Broaden the sample to include a wider range of family functioning and various levels of physiological control.

6. Retain the use of Beavers-Timberlawn Scale, but refine the training so the coders take responsibility for time spent learning the code.

The hypotheses which were generated from this study include:

1. There is a positive relationship on both the global and subscale scores of the Beavers-Timberlawn Family Evaluation Scale and the global and subscales of family measures of diabetic management.

2. There is a positive relationship on both the global and subscale scores of the Beavers-Timberlawn Family Evaluation Scale and the overall and subscale scores of the Diabetic Adjustment Scale.

3. There is no relationship on both the global and subscale scores of the Beavers-Timberlawn Family Evaluation Scales and diabetic management as measured by the diabetic adolescent's perception of

being out of control in a given week.

Practical Significance

Presently there are many different groups working with families with diabetic adolescents. The Canadian Diabetic Association in Edmonton, for example, is one such group that does enrichment programs for families with diabetes. If in fact the relationship between healthy family interaction and good diabetic management can be demonstrated, this may provide a more solid foundation for family programming. The suggestion that there is variability among even healthy families is also important. Families often need assurance that there are many different ways to develop effective patterns of functioning. Such information, if substantiated or further research, needs to be integrated into the educational programs already established to help families. Doctors working with diabetic families could use this information to enlist the family, as an adjunct to any medical treatment plan. Lastly, this study has demonstrated that family therapists can use the Beavers-Timberlawn Family Evaluation Scale to aid in evaluating families, since it can detect differences in families. The scale, however, does need training to enhance reliability. Hopefully, research of this kind will contribute to comprehensive health plans for adolescent members, which recognize the important contribution of the family.

REFERENCES

Ahlfield, J. E., Soler, N. G., & Marcus, S. D. (1983). Adolescent diabetes mellitus: Parent and child perspectives of the effect of the disease on family and social interactions. Diabetes Care, 6, 393-398.

Anderson, B., & Auslander, W. (1980). Research on diabetes management and the family: A critique. Diabetes Care, 3, 698-702.

Anderson, J.M. (1981). The social construction of illness experience: families with a chronically-ill child. Journal of Advanced Nursing, 6, 427-434.

Baker, L., & Lyen, K.R. (1981). Laying the foundation for juvenile diabetes management. Drug Therapy, 4, 63-73.

Banion, C.R., Mileds, M. S., & Carter, M.C. (1983). Problems of mothers in management of children with diabetes. Diabetes Care, 6, 548-551.

Beavers, W.R. (1976). A theoretical basis for family evaluation. In J.M. Lewis, W.R. Beavers, J.T. Gossett, & V.A. Phillips (Eds.), No Single Thread (pp. 46-82). New York: Bruner/Mazel.

Beavers, W.R. (1977). Psychotherapy and growth: A family systems perspective. New York: Brunner/Mazel.

Beavers, W.R., & Voeller, M.N. (1983). Family models: Comparing and contrasting the Olson circumplex model with the Beavers system model. Family Process, 22, 85-98.

Beavers, W.R. (1986). Power in families: A significant concept. Family Therapy News, May-June, p.4.

Beck, A. (1967). Depression - cause and treatment. Philadelphia: University of Pennsylvania Press.

Bloom, A., & Ireland, J. (1980). A colour atlas of diabetes. London: Wolfe Medical Publications Limited.

Breehn, J. G. (1977). Effects of chronic illness on the family. The Journal of Family Practice,9, 1057-1060.

Burton, L. (1975). The family life of sick children. London: Routledge & Kegan Paul.

Cerreto, M.C. & Mendlowitz, (1983). The relationship of family functioning to metabolic control. (abstract). Southern Society for Pediatric Research.

Cerreto, M.C., & Travis, L.B. (1984). Implications of psychological and family factors in the treatment of diabetes. Pediatric Clinics of North America, 31, 689-710.

Crain, A.J., Sussman, M.B., & Weil, W.B. (1966). Family interaction, diabetes, sibling relationships. International Journal of Social Psychiatry, 12, 35-43.

Coupey, S. & Cohen, M. (1984). Special considerations with a chronic illness. Pediatric Clinics of North America, 31, 211-220.

Deford, F. A. (1983). The life of a child. New York: Viking Press.

Dorland's Illustrated Medical Dictionary. (1974). (26th ed.). Toronto: W.B. Saunders Company.

Grass, A M., Hermann, L., & Shapiro, R. (1983). Children with diabetes. Behavior Modification, 17, 151-164.

Grey, M.J., Genel, M., Tamborlane, W.V. (1980). Psychosocial adjustment of latency-aged diabetics: Determinants and relationship to control. Pediatrics, 65, 69-73.

Greydanus, D.E., & Hofmann, A.D. (1979). Psychological factors in diabetes mellitus. American Journal of Disturbed Children, 133, 1061-1066.

Gwinn, R.B., Olex, N., Whitman, C.K. Crawford, P. (1984). Management problems in dealing with an adolescent diabetic. The Journal of Family Practice, 18, 207-222.

Haley, J. (1972). Critical overview of present status of family interaction research. In J.L. Framo (Ed.), Family interaction: a dialogue between family researchers and family therapists. (13-39). New York: Springer.

Hartmann, D.P. & Gardner, W. (1981). Considerations in assessing reliability of observations. In E.E. Filsinger & R.A. Lewis (Eds.), Assessing marriage, (pp.184-196). Beverly Hills: Sage Pub.

Hauser, S.T., Jacobson, D.W., Wertlieb, D., Brink, S., & Wentworth, S. (1985). The contribution of family environment to perceived competence and illness adjustment in diabetic and acutely Ill adolescents. Family Relations, 34, 99-108.

Haynes, S. (1978a). Validity and statistical analysis of observation data. In S. Haynes, Principles of behavioral assessment. (pp. 166-198). New York: Gardner.

Haynes, S. (1978b). Reliability and interobserver agreement in behavioral observation. In S. Haynes, Principles of behavioral assessment, (pp. 137-165). New York: Gardner.

Hinkle, D.E., Wiersma, W., Jurs, S.G. (1979). Applied statistics for the behavioral sciences. (pp.84-87). Dallas: Houghton Mifflin Co.

Hobbs, N., Perrin, J.M., & Ireys, H.T. (1985). Chronically ill children and their families. San Francisco: Jossey-Bass Pub.

Hoette, S.J. (1983). The adolescent with diabetes mellitus. Nursing Clinics of North America, 18, 763-776.

Hollingshead, A.B. (1965). Four factor index of social status. (working paper). New Haven, CT: Yale University. Department of Sociology.

Jacobson, A.M., & Leibovich, J.B. (1984). Issues in diabetes mellitus. Psychosomatics, 25, 7-14.

Johnson, S. B., & Rosenbloom, A.L. (1982). Behavioral aspects of diabetes mellitus in childhood and adolescence. Psychiatric Clinics of North America, 5, 357-369.

Keane, C.B. (1979). Essentials of medical-surgical nursing. Toronto: W.B. Saunders Co.

Khurana, R.C., & White, P. (1970). Attitudes of the diabetic child and his parents toward his illness. Postgrade Medicine, 48, 72-76.

Kieren, D. & Hurlbut, N. (1985). Final report: Problem solving interaction in families with and without a diabetic adolescent (SSHRC 410-84-0256). Edmonton: University of Alberta. Department of Family Studies.

Kieren, D., Hurlbut, N., Lehman, D., & Gora, R. (1985). Family revealed difference instrument (RDI). Edmonton: Department of Family Studies mimeographed.

Klusa, Y., Habblick, B.F., & Abernathy, T.J. (1983). Diabetes in children: family responses and control. Psychosomatics, 24, 367-372.

Koski, M.L., & Kumento, A. (1977). The interrelationship between diabetic control and family life. In Z. Laron (Ed.) Pediatrics and adolescent endocrinology, (pp. 41-45). Switzerland: S. Karzers Basil.

Kraemer, S. (1982). Ill children have family crises too. The Practitioner, 226, 720-723.

Lennard, N.L. & Bernstein, A. (1969). Patterns in human interaction. San Francisco: Jossey-Boss, Inc.

Lewis, J.M., Beavers, W.R., Gossett, J.T., & Phillips, V.A. (1976). No single thread. New York: Bruner/Mazel.

Lund, D. (1974). Eric. New York: Lippincott.

Marteau, T., & Greene, S. (1984). The diagnosis of diabetes mellitus in a child. The Practitioner, 228, 173-179.

Mikkelsen, C., Waehter, E., & Crittenden, M. (1978). Cystic fibrosis: A family challenge. Children Today, July- Aug., 22-26.

Minuchin, S., & Barcai, A. (1975). "Therapeutically induced family crisis," in S. Minuchin, (Ed.), Process in group and family process. Cambridge, Mass.: Harvard University Press.

Minuchin, S., Baker, L., Rosman, B.L., Liebman, R., Milman, L., & Todd, T.C. (1975). A conceptual model of psychosomatic illness in children. General Psychiatry, 32, 1031-1038.

Olson, D., Larsen, A. & McCubbin, H. (1982). Family strengths. In D. Olson, H. McCubbin, H. Barnes, A. Larson, M. Muxon, & M. Wilson, (Eds.). Family inventories: Inventories used in a national survey of families across the family lifecycle. St. Paul, MN: University of Minnesota.

Olson, D., Porter, J. & Bell, R. (1983). Faces II. In D.O. Olson, H. McCubbin, H. Barnes, A. Larsen, M. Muxen, & M. Wilson, (Eds.), Families: What makes them work. (pp. 247-248). Beverly Hills, Ca: Sage.

Olson, D., Russell, C., & Sprenkle, D. (1983). Circumplex model of marital and family systems: VI theoretical update. Family Process, 22, 69-84.

Olson, D., & Ryder, R. (1970). Inventory of marital conflict: An experimental interaction procedure. Journal of Marriage and the Family, 32, 443-448.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton: Princeton University Press.

Ross, S., Hunt, J. & Lillie, D. (1983). Aiming for good control in diabetes. Toronto: CDA.

Sargent, J., & Baker, L. (1983). Behavior and diabetes care. Primary Care, 10, 503-594.

Satterwhite, B.B. (1978). Impact of chronic illness on child and family: an overview based on five surveys with implications for management. International Journal of Rehabilitative Research, 1, 7-17.

Simonds, J.F. (1979). Emotions and compliance in diabetic children. Psychosomatics, 20, 544-551.

Speer, D.C. (1970). Family systems: Morphostasis and morphogenesis, or is homeostasis enough? Family Process, 9, 259-278.

Statistics Canada (1980). Hospital morbidity. Ottawa, 116-117.

Stein, R.E.K. & Reissman, C. (1980). The development of an impact-on-family scale: Preliminary findings. Medical Care, 18, 465-472.

Sullivan, B.J. (1979a). Adjustment in diabetic adolescent girls: 1. Development of the Diabetic Adjustment Scale. Psychosomatic Medicine, 41, 119-126.

Sullivan, B.J. (1979b). Adjustment in diabetic adolescent girls: II. Adjustment, self-esteem and depression. Psychosomatic Medicine, 41, 127-138.

Tattersall, R.B. (1981). Psychiatric aspects of diabetes - a physician's view. British Journal of Psychiatry, 139, 485-493.

Tattersall, R.B. & Lowe, J. (1981). Diabetes in adolescence. Diabetologia 20, 517-523.

Turkat, I.D. (1982) Glycosylated hemoglobin levels in anxious and nonanxious diabetic patients. Psychosomatics, 23, 1056-1058.

Wampler, K., Halverson, C. & Moore, J. (1986). The Georgia family Q sort: A new observational measure of family functioning. Paper to be presented at 1986 NCFR Preconference Theory and Methodology Workshop, Nov., 1986.

White, K., Kolman, M.L., Wexler, P., Polin, G., & Winter, R.J. (1984). Unstable diabetes and unstable families: a psychosocial evaluation of diabetic children with recurrent ketoacidoses. Pediatrics, 73, 749-755.

Wishner, W.J., & O'Brien, M.D. (1978). Diabetes and the family. Medical Clinics of North America, 62, 849-856.

Wyngaarden, J.B., & Smith, L.H. (Eds.). (1985). Textbook of Medicine. Toronto: W.B. Saunders Co.

Appendix A

Research Instruments

1. Beavers-Timberlawn Evaluation Scale
2. Revealed Difference Technique
3. Diabetic Adjustment Scale
4. Diabetic Control Question
5. Letter to Sample
6. Copyright Permission

University of Alberta
Edmonton

Canada T6G 2H1

Department of Family Studies
Faculty of Home Economics

801 General Services Building, Telephone (403) 432-5771

October 9, 1986
Received 10/16/86

Ms. Natalie Gilman
Brunner/Mazel, Inc.
Box 419
Larchmont, New York 10538

Dear Natalie:

Re: Copyright Permission

The purpose of this letter is to request copyright permission to print the Beavers-Timberlawn Family Evaluation Scale (Lewis, Beavers, Gossett, & Phillips, 1976) in my Masters Thesis.

Dr. Beaver's office has given verbal consent to use the scale in the study as well.

Please send your response by Perolator Courier to the following address: Dixie Lehman, BOx 387, High Prairie, AB TOG 1E0. PH. 523-4815.

Sincerely,

Dixie Lehman

Dixie Lehman

10/16/86 Permission is granted to reproduce the Beavers-Timberlawn Family Evaluation Scale from No Single Thread by Lewis, permission fee of $20.00 payable to Brunner/Mazel, Inc. Please give full credit to the original source in accordance with standard editorial practice.

Natalie Gilman
Permission Editor
Brunner/Mazel

Family Process, Inc

149 East 78th Street, New York, New York 10021
(212) 861 6059

Editor
CARLOS E. SLUZKI M.D.
Pittsfield, Massachusetts

Business Manager
JUDITH LIEB A.C.S.W.
New York, New York

Board of Directors and Editors
LYMAN C. WYNNE M.D. Ph.D.
President and Chairman
Rochester, New York

MICHAEL GOLDSTEIN Ph.D.
Vice President
Los Angeles, California

MARGARET T. SINGER Ph.D.
Secretary-Treasurer
Berkeley, California

EDGAR H. AUERSWALD M.D.
Oahu, Hawaii

PEGGY PAPP
New York, New York

[illegible] Ph.D.
[illegible]

M. DUNCAN STANTON Ph.D.
Rochester, New York

HELM STIERLIN
Heidelberg, W. Germany

CARL WHITAKER M.D.
Madison, Wisconsin

October 16, 1986

Ms. Dixie Lehman
Box 387
High Prairie
Alberta TOH 1E0
Canada

Dear Ms. Lehman,

This letter constitutes permission to use the Beavers Model in your Masters Thesis as per your letter of October 9, 1986.

Sincerely,

Judith Lieb

(Mrs.) Judith Lieb
Business Manager

APPENDIX A

I. BEAVERS-TIMBERLAWN FAMILY EVALUATION SCALE*

Family ____________

Session ____________

Rater ____________

Date ____________

Instructions: The following scales were designed to assess the family functioning on continua representing interactional aspects of being a family. Therefore, it is important that you consider the entire range of each scale when you make your ratings. Please try to respond on the basis of the videotape data alone, scoring according to what you see and hear, rather than what you imagine might occur elsewhere.

I. FAMILY AFFECT

A. Expressiveness: Rate the degree to which this family system is characterized by open expression of feelings.

1 1.5 2 2.5 3 3.5 4 4.5 5

Open, direct expression of feelings	Direct expression of feelings despite some discomfort	Obvious restriction in the expressions of some feelings	Although some feelings are expressed there is masking of most feelings	No expression of feelings

B. Mood and Tone: Rate the feeling tone of this family's interaction.

1 1.5 2 2.5 3 3.5 4 4.5 5

Usually warm, affectionate, humorous and optimistic	Polite, without impressive warmth or affection; or frequently hostile with times of pleasure	Overtly hostile	Depressed	Cynical hopeless and pessimistic

*Copyright permission granted.(See letter in Appendix A)

C. Conflict: Rate the degree of seemingly unresolved conflict.

1	1.5	2	2.5	3	3.5	4	4.5	5
Severe conflict with severe impairment of group functioning		Definite conflict with moderate impairment of group functioning		Definite conflict, with slight impairment of group functioning		Some evidence of conflict, without impairment of group functioning		Little, or no, conflict

D. Empathy: Rate the degree of sensitivity to, and understanding of, each other's feelings within the family.

1	1.5	2	2.5	3	3.5	4	4.5	5
Consistent empathic responsiveness		For the most part, an empathic responsiveness with one another, despite obvious resistance		Attempted empathetic involvement, but failed to maintain it		Absence of any empathic responsiveness		Grossly inappropriate responses to feelings

II. GOALS

Goal-Directed Negotiation: Rate this family's overall efficiency in negotiation and problem solving.

1	1.5	2	2.5	3	3.5	4	4.5	5
Extremely efficient		Good				Poor		Extremely inefficient

III. AUTONOMY

A. Communication of Self-Concept: Rate this family as to the clarity of disclosure of feelings and thoughts. This is not a rating of the intensity of feelings, but rather of clarity of expression of individual thoughts and feelings.

1 1.5 2 2.5 3 3.5 4 4.5 5

Very clear	Somewhat vague and hidden	Hardly anyone is ever clear

B. Responsibility: Rate the degree to which the family members take responsibility for their own past, present, and future actions.

1 1.5 2 2.5 3 3.5 4 4.5 5

Members regularly are able to voice responsibility for individual actions	Members sometimes voice responsibility for individual actions but tactics also include sometimes blaming others, speaking in 3rd person or plural	Members rarely, if ever, voice responsibility for individual actions

C. Invasiveness: Rate the degree to which the members speak for one another, or make "mind reading" statements.

1 1.5 2 2.5 3 3.5 4 4.5 5

Many invasions	Occasional invasions	No evidence of invasions

D. Permeability: Rate the degree to which members are open, receptive and permeable to the statements of other family members.

1	1.5	2	2.5	3	3.5	4	4.5	5
Very open		Moderately open				Members frequently unreceptive		Members unreceptive

IV. STRUCTURE OF THE FAMILY

A. Overt Power: Based on the entire tape, check the term that best describes your general impression of the power structure of this family.

1	1.5	2	2.5	3	3.5	4	4.5	5
Chaos		Marked dominance		Moderate dominance		Led		Egalitarian
Leaderless: no one has enough power to structure the interaction.		Control is close to absolute. No negotiation; dominance and submission are the rule.		Control is close to absolute. Some negotiation, but dominance and submission are the rule.		Tendency toward dominance and submission, but most of the interaction is through respectful negotiation.		Leadership is shared between parents, changing with the nature of the interaction.

If 2 to 4, indicate:

Who is #1 in power: Father....... Mother....... Child (specify).................................

Who is #2 in power: Father....... Mother....... Child (specify).................................

B. Parental Coalitions: Check the terms that best describe the relationship structure in this family.

1	1.5	2	2.5	3	3.5	4	4.5	5
Parent-child coalition				Weak parental coalition				Strong parental coalition

C. Closeness

1	1.5	2	2.5	3	3.5	4	4.5	5
Amorphous, vague and indistinct boundaries among members				Isolation, distancing				Closeness with distinct boundaries among members

D. The power structure, or "pecking order" in this family is:

1	1.5	2	2.5	3	3.5	4	4.5	5
Hard to determine		Relatively hard to determine				Relatively easy to determine		Quite easy to determine

V. MYTHOLOGY

Every family has a mythology; that is, a concept of how it functions as a group. Rate the degree to which this family's mythology seems congruent with reality.

1	1.5	2	2.5	3	3.5	4	4.5	5
Very congruent		Mostly congruent				Somewhat incongruent		Very incongruent

VI. Management of Diabetes: Make your rating on the following scales, immediately after viewing the tape.

A. Knowledge about Diabetes

1 1.5	2 2.5	3 3.5	4 4.5	5
seems very aware of various aspects of disease with high interest	seemed aware of disease and somewhat interested	knows about disease but seemed uninvolved	appeared to not care about disease	appeared ignorant of disease

B. Empathy to Diabetic Adolescent

1 1.5	2 2.5	3 3.5	4 4.5	5
Consistent empathic response at a feeling level with one another	For the most part, an empathic response at a feeling level with one another despite obvious resistence	Attempted empathic response, but failed to maintain it	Absence of any observable empathic response	Grossly inappropriate response

C. Acceptance of Disease by Family

1 1.5 2 2.5 3 3.5 4 4.5 5

Discuss openly the implications of the disease within their nuclear family	Discussed implications of disease rather reluctantly	Appeared apathetic about the disease	Begrudge having a child with diabetes	Deny the implications of disease within their family

D. Overall Coping Ability: Rate your impression of this family's ability to cope with the management of diabetes.

1 1.5 2 2.5 3 3.5 4 4.5 5

Good coping ability	Fair coping ability	Poor coping ability

VII. GLOBAL HEALTH-PATHOLOGY STUDY

Circle the number of the point on the following scale which best describes this family's health or pathology.

10 9 8 7 6 5 4 3 2 1

Most Pathological	Healthiest

Instructions for the Family - Problem Solving Tasks

You will now be asked to discuss some real cases in which families like yours are having ordinary day to day problems. Just like problems in your family, there are often several different points of view.

You will have to decide these things.

1) First - What the problem really is?

2) Second - Tell us if this type of problem has ever happened to you in your family.

3) Third - Who is most responsible for the problem? We realize that all persons in a conflict are somewhat responsible, but we want you to decide who is most responsible. Choose only one. Then you should decide on the solution to the problem. We have given you three possible solutions. None are perfect, pick the one you think is most acceptable to you.

4) Last - We also want you to tell us who should have the final say in this type of problem. Choose the person you think should have more of a say, even if you think several persons should have some influence.

Please answer the questions by yourself.

Instructions for Session II

Revealed Difference Technique

Last month we asked each of you to give us your individual ideas to solving nine common problems in families with adolescents. We have picked out three which most of you said had happened and one or more of you individually disagreed with the others about some part of the problem. Here is a copy of these three. We want you to take ten minutes for each situation and come to some family agreement about how it should be handled. That means you have [illegible] minutes total. You can write your family answers on this sheet. After 8 minutes I will remind you so you can finish up the first situation and go on to the next. Are there any questions?

SITUATIONS

1A Bob, age 15, and Chuck, age 15, are good friends. They have gone to school together since kindergarten. Bob's parents had always liked Chuck but they have heard from a neighbor that Chuck was picked up by the police last week for drinking. They want Bob to stop seeing Chuck because he might be a bad influence on him. Bob thinks his parents don't understand. He's old enough to choose his own friends. He tells his parents that they are treating him like a baby and refuses to talk about it any more.

2A Kevin, age 13, has been invited to a party at Jane's house. She is a classmate. There will be about twenty kids there. Jane's parents won't be home but her older sister will supervise. They plan to have pizza and sit around and talk. His parents say no, saying he is too young. He tries to explain why he wants to go; an argument develops and his parents say "That's that!"

3A Marvin's, (age 14), father has been offered a job in a town five hundred miles away. He must leave in two weeks. School will be out in three months. Marv doesn't want to change schools and leave his friends. He is very upset. His best friend will let him stay at his house. His parents don't think they have the time to make the arrangements to let him stay behind.

4A Jay, a 13 year old diabetic, has been invited to sleep at a friend's house. Dad and Mom have never allowed Jay to spend the night without them, fearing that his insulin might not be given properly. Jay wants to go and his parents are hesitant.

5A There is a really good movie on T.V. that Jeff, age 13 wants to watch. At supper he had just announced how much homework his teachers had piled on for tomorrow. The movie is one he has been wanting to see for quite awhile and is on from 7:00 to 9:30. These are the hours he and his family have set aside to do homework. The family does not own a video recorder. Jeff insists on watching the show. His parents insist he does his homework.

6A Bruce, age 17, has been keeping a journal for the past two years. He writes his private thoughts and feelings down in the journal. One of his parents went into Bruce's room to get something and found the journal. They found it interesting and read several pages. When Bruce came home, he noticed that the journal had been moved, so someone had been in his room.

7A Brian, age 16 is going out to a show with a group of his friends tomorrow night. They want to go to the late show and out for something to eat afterwards. All of Brian's friends don't have to be in until 1:00, but Brian's curfew is 12:00. Brian wants to stay out until 1:00.

8A Kelley, age 15, is involved in many activities. He is out for basketball with practices every night. Piano lessons also demand alot of time. The youth club meets several times a week. When he is at home, he just wants to relax. However, his parents would like him to help around the house by doing his part as a family member.

9A The Clutier family has two children. Oliver, age 17 has diabetes and he has a sister age 10. Mr. Clutier is a contractor who works irregular hours. Ms. Clutier has been a homemaker for ten years and has been around to do alot of things for the family. She has decided to return to work as a nurse in the local hospital. This will mean alot of changes for the family: no rides, and using the bus more, sharing roles at home. Mr. Clutier doesn't think it will affect him much. Ms. Clutier is looking forward to the change. The kids aren't sure they will like the changes.

Answer Form-A-6

M Adol - Dial.

Code No. ____

INDIVIDUAL ANSWER FORM

PROBLEM SITUATION	WHAT IS THE PROBLEM?	HAS THIS EVER HAPPENED IN YOUR FAMILY?	WHO IS MOST RESPONSIBLE			WHAT SHOULD THEY DO?	WHO SHOULD MAKE FINAL DECISION?			
			MOTHER	FATHER	CHILD		MOTHER	FATHER	CHILD	BOTH PARENTS
1A Conflict regarding friends	A. Bob's decison to keep Chuck as a friend. B. Deciding how much independence Bob should have.	A. Yes B. No				A. Bob should stop seeing Chuck. B. The family should discuss it more. C. Bob should make his own decison about friends.				
2A Going to the party	A. Kevin and his parents aren't communicating. B. Jane's parents will not be home.	A. Yes B. No				A. Kevin should keep trying to persuade them. B. Kevin should take their answer and forget it. C. Parents volunteer to take Kevin to a movie of his choice.				
3A The move	A. Marvin's reaction to leaving his friends. B. Handling the family move.	A. Yes B. No				A. Somehow arrangements should be made for Marvin to stay with his friends. B. Marvin should go with his family. C. The father should go alone until school is over.				

Code No. ____

PROBLEM SITUATION	WHAT IS THE PROBLEM?	HAS THIS EVER HAPPENED IN YOUR FAMILY?	WHO IS MOST RESPONSIBLE			WHAT SHOULD THEY DO?	WHO SHOULD MAKE FINAL DECISION?			
			MOTHER	FATHER	CHILD		MOTHER	FATHER	CHILD	BOTH PARENTS
4A Managing diabetic routine	A. Allowing to take care of his own diabetic routine. B. Deciding how much independence Jay can have.	A. Yes B. No				A. Jay can't go. B. Discuss the daily ritual together and let him go. C. He can go but he has to come home to have his insulin.				
5A Homework	A. Homework hours are too rigid. B. Deciding whether to watch the movie or not.	A. Yes B. No				A. Figure out another way to see the movie. B. Jeff should do his homework. C. Jeff should do homework while watching the movie.				
6A Privacy	A. Maintaining family member's privacy. B. Not telling about reading his diary.	A. Yes B. No				A. Establish family rules about privacy. B. Bruce should try to share more about himself with his parents. C. Parent should apologize for reading the diary and not telling him.				

M Adol - Diab.

Code No. ______

PROBLEM SITUATION	WHAT IS THE PROBLEM?	HAS THIS EVER HAPPENED IN YOUR FAMILY?	WHO IS MOST RESPONSIBLE			WHAT SHOULD THEY DO?	WHO SHOULD MAKE FINAL DECISION?			
			MOTHER	FATHER	CHILD		MOTHER	FATHER	CHILD	BOTH PARENTS
7A Hours	A. Brian doesn't know what to do about going out. B. Brian's family curfew conflicts with his friends.	A. Yes B. No				A. Brian decides not to go. B. Let him go just this once. C. Parents will pick Brian up at 12:30.				
8A Household Tasks	A. Kelley is over-involved in activities outside [illegible] home. B. Sharing responsibilities at home.	A. Yes B. No				A. Work out a family work schedule. B. Parents tell him to drop basketball. C. Kelley rethinks the time his outside activities take.				
9A Mom goes back to work	A. Adjusting family tasks. B. Accepting mothers decision to return to work.	A. Yes B. No				A. Mother should reorganize the household tasks. B. Family should convince mother to stay home till the children finish school. C. Family could decide how to handle the decision and the tasks.				

Name ______________________________

Date ______________________________

Date of Birth __________________________

Please respond to the following statements by writing the number that best indicates how you feel on the line at the right. This is not a test. There are no right or wrong answers. Please answer honestly, according to the way you feel right now.

X = Does not apply
1 = Never
2 = Once in a while
3 = Sometimes
4 = Most of the time
5 = Always

1. I think diabetes is a serious illness. ____
2. I control my diabetes myself. ____
3. I tell my teachers I have diabetes. ____
4. I think I have too many dents and bumps on my body. ____
5. I talk to my nondiabetic friends about my diabetes. ____
6. My brothers and sisters tease me about having diabetes. ____
7. I think my diabetes is getting worse. ____
8. I wish I were more independent. ____
9. I think I would enjoy school more if I didn't have diabetes. ____

10. I try to cover up the bumpy areas on my body with my clothes ___

X = Does not apply
1 = Never
2 = Once in a while
3 = Sometimes
4 = Most of the time
5 = Always

11. I tell my friends at home that I have diabetes. ___

12. I think my parents are more concerned about my diabetes than about me. ___

13. I get embarassed when I have to refuse food. ___

14. I wish I could run away. ___

15. I have to go to the bathroom more than the other students at school. ___

16. I think I'm as good-looking as most other kids. ___

17. My friends at home deliberately tempt me to eat foods I shouldn't eat. ___

18. My parents expect too much of me. ___

19. I would rather eat something I shouldn't than tell people I have diabetes. ___

20. I would rather have my parents control my diabetes for me. ___

21. I daydream at school. ___

22. I wish I looked different than I do. ___

23. I enjoy eating with my friends. ___

X = Does not apply
1 = Never
2 = Once in a while
3 = Sometimes
4 = Most of the time
5 = Always

24. I feel like no one pays attention to me at home. ___

25. I think people with diabetes shouldn't get married. ___

26. My parents act like diabetes is THEIR disease, not MINE. ___

27. School work is easy for me. ___

28. I have trouble sleeping. ___

29. My nondiabetic friends understand me. ___

30. My parents embarass me. ___

31. I get mad at myself when I have insulin reactions. ___

32. My mother is too careful or protective of me. ___

33. I have fun at school. ___

34. I feel tired----. ___

35. My friends at home tease me about my diabetes. ___

36. I feel like my parents punish me too much. ___

37. I would rather not tell people when I'm having a reaction. ___

38. My father is too careful or protective of me. ____

39. I do well in school. ____

40. I have too many insulin reactions. ____

X = Does not apply
1 = Never
2 = Once in a while
3 = Sometimes
4 = Most of the time
5 = Always

41. I think my nondiabetic friends would like me better if I didn't have diabetes either. ____

42. I talk to my parents about my diabetes----. ____

43. I wish I didn't have diabetes. ____

44. People who have diabetes get too many responsibilities before they are ready for them. ____

45. I have fights with the other kids in school. ____

46. I feel like I'n not hungry----. ____

47. It's harder to make friends when you have diabetes. ____

48. My parents act like they love me----. ____

49. I fake my urine test reports----. ____

50. I take part in figuring out my own meals. ____

51. I get discouraged in school. ____

52. I feel like I'm "in control" as far as my diabetes is concerned ___

53. I wish I had more friends. ___

54. I get angry at my mother----. ___

55. I feel like not taking my insulin. ___

X = Does not apply
1 = Never
2 = Once in a while
3 = Sometimes
4 = Most of the time
5 = Always

56. I give myself my own insulin. ___

57. I wish my teachers knew more about diabetes. ___

58. I'm afraid I'll get very sick before I'm very old. ___

59. I play with kids who are younger than me. ___

60. I get angry at my father----. ___

61. When I'm angry, I forget to take my insulin. ___

62. On sick days when I have a cold or the flu, I manage my diabetes myself. ___

63. I get in trouble in school. ___

64. I tell people when I think I'm having a reaction. ___

65. Other kids pick on me. ___

66. I wish my father knew more about diabetes. ___

67. When I'm mad, I eat more than usual. ____

68. I wish I wasn't fat. ____

DIABETIC CONTROL QUESTION

Circle the correct response.

How often have you fallen on either side of the acceptable range (for the method you use to measure) in the past week?

a) never

b) rarely

c) often

d) very often

e) always

Nov. 27, 1985

Dear

Are you surprised to get a letter from the University? To satisfy your curiosity, read on!

This letter is in regards to the research project which your family participated in last summer. During the last interview, we asked you to complete a questionnaire about diabetes. For my research project, to complete my masters degree, I will be looking at part of that data. To be most useful however, I need a little bit more information from you. Therefore, some of these questions will sound familiar and some will be new.

Would you please complete the enclosed form by following the directions at the top of the page? When you are finished, go over your answers to make sure you have answered each question. Then please return it to me in the enclosed envelope. Your answers will be used only for research purposes and thus kept confidential.

Please return the completed form by December 10th or earlier. Thank you for your help.

Sincerely,

Dixie Lehman

BLANK PAGE

BLANK PAGE

Appendix B

Training Manual

1. Step wise Procedure
2. Glossary of Terms and Description of Categories
3. Detailed Description of Categories
4. Tests on Content Codes

APPENDIX B

TRAINING MANUAL FOR CODERS

I. STEP WISE PROCEDURE

Training Session 1 (2 hours)

1. Meet with both coders and distribute training manuals.
2. Explain procedures of the training, a brief overview of the study, and discuss confidentiality.
3. Go through each section of training manual. Discuss each part and answer any questions.
4. Instruct Coders that tests will be mailed one week prior to the next session. A 90% accuracy score must be obtained for training to proceed.

Training Session 2 (1 hour)

1. The 90% accuracy was not obtained by either coder by this session.
2. Discussion and clarification of problem areas in understanding the terms on the test.

Training Session 3 (2.5 hours)

1. Review the test and discuss problem areas. Check for 90% accuracy.
2. Procedure for Coding tapes:
    a) View the tape (10 minutes minimum)
    b) View tape again while glancing at the scale
    c) Rate the Family

d) Discuss any questions
e) View second tape for 10 minutes while glancing at the scale
f) Rate the Family
g) Decide which method was best
h) Review the Glossary and Detailed Descriptions
i) Break for 20 minutes
j) Proceed with tape 3 and 4
k) End of family tape - last ten minutes of Diabetic Section - Check for problems

Coding (2.5 hours)

1. Review those terms that were difficult.

2. View Family 1 for 10 minutes while glancing at the scale (tapes were randomly selected for order).
3. Rate the family.

4. View Family 5 while glancing at the scale.

5. Rate the family.

6. Review the Glossary and Detailed Descriptions.

7. Break for 10 minutes.

8. View Family 2 while glancing at the scale.

9. Rate the family.

10. View Family 3 while glancing at the scale.

11. Rate the family.

12. View Family 4 while glancing at the scale.

13. Rate the family.

14. Thank the Coders for Participation

II. GLOSSARY OF TERMS AND DESCRIPTION OF CATEGORIES

(Lewis, Beavers, Gossett, & Phillips, 1976)

I. FAMILY AFFECT

A. Expressiveness: Rate the degree to which this family system is characterized by open expression of feelings.

1	1.5	2	2.5	3	3.5	4	4.5	5
Open, direct expression of feelings		Direct expression of feelings despite some discomfort		Obvious restriction in the expressions of some feelings		Although some feelings are expressed there is masking of most feelings		No expression of feelings

Expressiveness - measures the degree to which the family system encouraged the open communication of affect. To further explain, in terms of family interaction, high expressiveness reports interactions which are characterized by warmth. Members are able to express their individual needs clearly, yet recognize the limitations of others to meet those needs. Quality of affect is not measured; only the openness of expression.

B. Mood and Tone: Rate the feeling tone of this family's interaction.

1	1.5	2	2.5	3	3.5	4	4.5	5
Usually warm, affectionate, humorous and optimistic		Polite, without impressive warmth or affection; or frequently hostile with times of pleasure		Overtly hostile		Depressed		Cynical hopeless and pessimistic

Mood and Tone - refers to the overall family system mood of the family interaction. The family system may vary from a warm, optimistic feeling tone to hostile, depressed and hopeless moods.

C. Conflict: Rate the degree of seemingly unresolved conflict.

1	1.5	2	2.5	3	3.5	4	4.5	5
Severe conflict with severe impairment of group functioning		Definite conflict with moderate impairment of group functioning		Definite conflict, with slight impairment of group functioning		Some evidence of conflict, without impairment of group functioning		Little, or no, conflict

Conflict - involves two factors. First is to determine if conflict is present. The second factor is to determine the effect of the conflict upon the functioning of the family.

D. Empathy: Rate the degree of sensitivity to, and understanding of, each other's feelings within the family.

1	1.5	2	2.5	3	3.5	4	4.5	5
Consistent empathic responsiveness		For the most part, an empathic responsiveness with one another, despite obvious resistance		Attempted empathetic involvement, but failed to maintain it		Absence of any empathic responsiveness		Grossly inappropriate responses to feelings

Empathy - the degree of sensitivity to, and understanding of, each other's feelings within this family and to communicate these feelings. The scale moves from consistent awareness and responsiveness to occasional, absent, and at the extreme, grossly inappropriate responses to affect.

II. GOALS

Goal-Directed Negotiation: Rate this family's overall efficiency in negotiation and problem solving.

1	1.5	2	2.5	3	3.5	4	4.5	5
Extremely efficient		Good				Poor		Extremely inefficient

Goal-Directed Negotiation - This scale rated the effectiveness of the family's negotiations or problem solving. For example, a family could have a strong pattern of dominant-submission and although they could arrive at a solution to a task, no negotiations occurred. Therefore, in terms of this scale, they would be extremely inefficient negotiators.

III. AUTONOMY

A. Communication of Self-Concept: Rate this family as to the clarity of disclosure of feelings and thoughts. This is not a rating of the intensity of feelings, but rather of clarity of expression of individual thoughts and feelings.

1	1.5	2	2.5	3	3.5	4	4.5	5
Very clear				Somewhat vague and hidden				Hardly anyone is ever clear

Communication of Self-Concept - is a family system characteristic evaluating the autonomy of the individual. This scale measures the degree to which the family nourishes, or discourages, clear communication of feelings and thoughts. The important aspect of this scale is the quality of the clarity of disclosure.

B. Responsibility: Rate the degree to which the family members take responsibility for their own past, present, and future actions.

1	1.5	2	2.5	3	3.5	4	4.5	5
Members regularly are able to voice responsibility for individual actions				Members sometimes voice responsibility for individual actions but tactics also include sometimes blaming others, speaking in 3rd person or plural				Members rarely, if ever, voice responsibility for individual actions

Responsibility - this scale measures the degree to which the family system reflected family member's acceptance of responsibility for their own thoughts, feelings and actions. At one end families may avoid any communicated responsibility. However, at the other end, families may frequently use 'I will' or 'I feel' statements.

C. Invasiveness: Rate the degree to which the members speak for one another, or make "mind reading" statements.

1	1.5	2	2.5	3	3.5	4	4.5	5
Many invasions				Occasional invasions				No evidence of invasions

Invasiveness - this scale rates the extent to which a family encourages, or tolerates, family members to speak for one another. Many invasions, or speaking for another ("What you really feel is...", "John, you are not hungry") does not enhance the development of autonomy.

D. Permeability: Rate the degree to which members are open, receptive and permeable to the statements of other family members.

1	1.5	2	2.5	3	3.5	4	4.5	5
Very open		Moderately open				Members frequently unreceptive		Members unreceptive

Permeability - this scale measures the degree to which a family encourages the acknowledgment of the stated feelings, thoughts, and behaviors of its members. Impermeable families would fail to respond to a member who repeatedly tried to be heard. Moving the other direction on the scale, openness is the greater a family attempts to listen to the thoughts, feelings and behaviors of each member.

IV. STRUCTURE OF THE FAMILY

A. Overt Power: Based on the entire tape, check the term that best describes your general impression of the power structure of this family.

1 1.5 2 2.5 3 3.5 4 4.5 5

Chaos	Marked dominance	Moderate dominance	Led	Egalitarian
Leaderless: no one has enough power to structure the interaction.	Control is close to absolute. No negotiation; dominance and submission are the rule.	Control is close to absolute. Some negotiation, but dominance and submission are the rule.	Tendency toward dominance and submission, but most of the interaction is through respectful negotiation.	Leadership is shared between parents, changing with the nature of the interaction.

If 2 to 4, indicate:

Who is #1 in power: Father....... Mother....... Child (specify)................................

Who is #2 in power: Father....... Mother....... Child (specify)................................

Overt Power - this scale measures the basic power structure of the total family system. The way in which the family dealt with power is the organizing principle of this scale. The scale uses an entropy model of moving from chaos to rigidity to flexibility. An important element in determining the rating is respectful negotiation or problem solving.

B. Parental Coalitions: Check the terms that best describe the relationship structure in this family.

1	1.5	2	2.5	3	3.5	4	4.5	5
Parent-child coalition				Weak parental coalition				Strong parental coalition

Parental Coalitions - this scale asks the rater to make a judgment regarding the strongest coalition observed in the family. The clinical and research data suggest the nature of the parental coalition is an important factor in the overall health of the family.

C. Closeness

1	1.5	2	2.5	3	3.5	4	4.5	5
Amorphous, vague and indistinct boundaries among members				Isolation, distancing				Closeness with distinct boundaries among members

Closeness - this rating scale involves two variables: the presence or absence of boundaries between individuals in the family; and the degree of closeness. These two variables reflect the concept of ego boundaries: "One must be separate in order to be close."

A family system that reflected vague, unclear boundaries were at one extreme; in the middle are those families in which the separateness of the individuals was clear, but interpersonally distanced; and at the other end of the scale were families with distinct boundaries and demonstrated closeness.

D. The power structure, or "pecking order" in this family is:

1	1.5	2	2.5	3	3.5	4	4.5	5
Hard to determine		Relatively hard to determine				Relatively easy to determine		Quite easy to determine

Power Structure - this scale reflects the rater, rather than the family. Circle the number that best reflects your feelings about rating the power structure.

V. MYTHOLOGY

Every family has a mythology; that is, a concept of how it functions as a group. Rate the degree to which this family's mythology seems congruent with reality.

1	1.5	2	2.5	3	3.5	4	4.5	5
Very congruent		Mostly congruent				Somewhat incongruent		Very incongruent

Mythology - this scale rates a family on the degree to which the family's concept of itself was congruent with the rater's appraisal of family behavior. Families which may act and talk as if their family was 'normal,' despite the underlying conflict, pain and/or despair should be rated at one extreme. At the other end would be a family who, independent of the level of family functioning, saw themselves as they were seen by the raters.

VI. Management of Diabetes: Make your rating on the following scales, immediately after viewing the tape.

A. Knowledge about Diabetes (a family score)

1 1.5	2 2.5	3 3.5	4 4.5	5
seems very aware of various aspects of disease with high interest	seemed aware of disease and somewhat interested	knows about disease but seemed uninvolved	appeared to not care about disease	appeared ignorant of disease

Knowledge about Diabetes - measures the awareness of the basic understanding of the disease. The family may vary from a high awareness, to being rather ignorant of the disease.

B. Empathy to Diabetic Adolescent (parents)

1 1.5	2 2.5	3 3.5	4 4.5	5
Consistent empathic response at a feeling level with one another	For the most part, an empathic response at a feeling level with one another despite obvious resistence	Attempted empathic response, but failed to maintain it	Absence of any observable empathic response	Grossly inappropriate response

Empathy to Diabetic Adolescent - refers to the willingness of the parents to be empathetic to the adolescents feelings regarding the disease.

C. Acceptance of Disease by Family

1 1.5	2 2.5	3 3.5	4 4.5	5
Discuss openly the implications of the disease within their nuclear family	Discussed implications of disease rather reluctantly	Appeared apathetic about the disease	Begrudge having a child with diabetes	Deny the implications of disease within their family

Acceptance of Disease by Family - measures how the family accepts the presence of the disease and its implications.

D. Overall Coping Ability: Rate your impression of this family's ability to cope with the management of diabetes.

1	1.5	2	2.5	3	3.5	4	4.5	5
Good coping ability				Fair coping ability				Poor coping ability

Overall Coping Ability - a general score for the family's ability to cope with the different aspects of the management of diabetes.

VII GLOBAL HEALTH-PATHOLOGY STUDY

Circle the number of the point on the following scale which best describes this family's health or pathology.

10	9	8	7	6	5	4	3	2	1
Most Pathological									Healthiest

Pathology - this scale measures the general health and pathology of the family system. After rating the five other categories, give your overall rating of this family.

III. DETAILED DESCRIPTION OF CATEGORIES

The detailed descriptions are designed to specifically provide a clearer picture of the scales by giving examples of each category.

1. FAMILY AFFECT

A. Expressiveness

1 - 1.5 open, direct expression. eg. Family members directly express themselves to a striking degree.

2 - 2.5 direct some discomfort. eg. Their words are direct, but possibly their body language expresses an uncomfortableness.

3 - 3.5 obvious restriction in the expression of some feelings. eg. These family members constrict their emotional side.

4 - 4.5 masking of most feelings.

5 no expression of feelings. eg. No affirmation to each other, or family members repress their affect.

B. Mood or Tone

1 - 1.5 usually warm, humorous and optimistic. eg. A positive, glowing, fun atmosphere prevails in this family.

2 - 2.5 polite, without much warmth; some hostility. eg. Family members are somewhat stiff with one another.

3 - 3.5 overtly hostile. eg. Family members have a subdued mood without open hostility.

4 - 4.5 depressed.

5 hopeless and pessimistic. eg. A negative attitude prevails in this family.

C. Conflict

1 - 1.5 feelings of tenseness [illegible] members do not freely express themse[illegible] (Some members do [illegible]k).

2 - 2.5 [illegible]ss is present and family member's [illegible]ssion is strained. eg. A strong undercurrent of conflict is felt as this family interacts.

3 - 3.5 tenseness, yet family's expression is barely hindered. eg. The tenseness is felt, but the family members continue to express themselves quite freely.

4 - 4.5 the family does not agree with one another and differences of opinion are allowed to be expressed. eg. A trace of conflict is felt, but family member's expressions are not hindered.

5 The family easily agrees with one another. eg. There is a supportiveness of one another as negative feelings are expressed.

D. Empathy

1 - 1.5 Consistent empathetic responsiveness. eg.

	listening attentively to the one speaking, with eyes directed toward the speaker.
2 - 2.5	Empathetic responsiveness with resistance eg. listening to the one speaking, but eyes are wondering.
3 - 3.5	Attempted empathy, but failed to maintain it. eg. Tries to listen but allows mind to wonder.
4 - 4.5	Absence of empathetic responsiveness. eg. feeling of coldness to one another.
5	Grossly inappropriate responses to feelings. eg. A pervasive feeling of cynicism, sneering and deprecating attitudes.

II. GOALS

Goal Directed Negotiation

1 - 1.5	Extremely efficient. eg. Good discussion by all family members and arrival at a solution by staying on target.
2 - 2.5	Good. eg: All family members discussed, but discussion waffled around before coming to a solution.
3 - 3.5	Medium. eg. Discussion and then hurried through to a solution.
4 - 4.5	Poor. eg. Discussion went off course and no one seemed to pull it back until a solution was quickly made.
5	Extremely inefficient. eg. lots of discussion,

but no solution.

III. AUTONOMY

A. Communication of Self-Concept

1 - 1.5	Very clear. eg. Family members feel comfortable with uncertainty, ambivalence and disagreement. Each member is visible and known,
2 - 2.5	Less clear. eg. There are blurred boundaries between members.
3 - 3.5	Somewhat vague and hidden. eg. Statements about each other's behavior are often and risk-free. eg. "You're wasting our time, John," and "You're always interrupting.",
4 - 4.5	Vague. eg. In trying to understand the family, communication seems unclear.
5	Hardly anyone is ever clear. eg. Listening to the family gives the hearer a sense of confusion. Lots of question-asking, evasions and shifts of meaning, diffuse attacks on others and sarcasm or ridicule.

B. Responsibility

1 - 1.5	Voice responsibility for actions. eg. Many "I" statements are heard. "I feel,' 'I want.'
2 - 2.5	Sometimes voice responsibility for actions.

3 - 3.5	Sometimes take responsibility but includes blaming and speaking in 3rd person, or plural. eg. Family members scapegoat, but may change the one who is "it." Control of each other is prevalent.
4 - 4.5	Little responsibility for actions; more blaming and speaking in 3rd person or plural.
5	Rarely voice responsibility for own actions. eg. There is a definite failure of members to take responsibility for feelings, past actions and for future goals.

C. Invasiveness

1 - 1.5	Many invasions. Family members often talk for one another and show little respect for another's experiences. (May even double bind).
2 - 2.5	Frequent invasions.
3 - 3.5	Occasional invasions - once in awhile. However, there is an attempt to limit and bring every family member's inner life into agreement with an invisible referee.
4 - 4.5	Almost never invade
5	No evidence of invasion. Each family member is allowed to speak for themselves. eg. Family members have a sensitivity and respect for other's thoughts and feelings.

D. Permeability (Receptivity).

1 - 1.5 Very open. eg. Receptivity to each other.

2 - 2.5 Moderately open. eg. family member listens for awhile and then interrupts by talking over another family member.

3 - 3.5 Somewhat open and somewhat closed - In listening to the family, they seem neither open or closed.

4 - 4.5 Frequently unreceptive. eg. Family members try several times before they are heard.

5 Unreceptive to one another. eg. Everyone talks at once.

IV. STRUCTURE OF THE FAMILY (based on entire tape)

A. Overt Power

1 - 1.5 Chaos - leaderless. eg. The conversations seem to move in several directions.

2 - 2.5 Marked dominance; control is close to absolute. eg. Father is in charge.

3 - 3.5 Moderate dominance. Some negotiation, but dominance/submission is the rule. eg. Family members can discuss, but Father has the final say. (Authoritarian parenting style with a depressive, compulsive atmoshphere stressing no spontaneity

4 - 4.5 Led. Tendency toward dominance/submission, but family has good interaction among each other. eg. Father may initiate the discussion, but allows each one to contribute.

5	Egalitarian. Both parents have equal power and flexibly share it.

B. Parental Coalitions

1 - 1.5	Parent-child. eg. Mother and child continually agree against the father's opinion.
2 - 2.5	Sometimes parent-child.
3 - 3.5	Weak parental coalition. eg. Parent sometimes sides with child, sometimes with other parent.
4 - 4.5	Firmer parental coalition. eg. Parents seem to be in charge, but allow child to have some power.
5	Strong parental coalition. Clear boundary between parents [illegible].

C. Closeness

1 - 1.5	Vague boundaries among members. eg. No intergenerational distinctives; parents and children are the same.
2 - 2.5	Little separateness, but closed emotionally to each other.
3 - 3.5	Isolation. eg. each person is closed off by themselves; rugged individualism.
4 - 4.5	Separateness among members, but with a little warmth.
5	Closeness, but with distinct boundaries. eg. There is a sense of individualness among members, but a genuine warmth too.

D. Power Structure (reflects rater's feelings about the family)

1 - 1.5	Hard to determine. Difficult to assess who is in charge. eg. possibly no one is in charge.
2 - 2.5	Relatively hard to determine.
3 - 3.5	At times hard to determine; at other times easy to determine.
4 - 4.5	Relatively easy to determine.
5	Quite easy to determine. eg. Obviously shared or one dominant member.

V. MYTHOLOGY

1 - 1.5	Very congruent. eg. Family sees itself the same as the rater. Myth provides a center for shared meanings.
2 - 2.5	Mostly congruent
3 - 3.5	Difficult to determine one way or the other. Family may be concerned with social appropriateness and then behavior is watched and controlled or may see themselves as second class citizens and unworthy of respect or social power. The behavior is fairly congruent, but behavior is not "appropriate." eg. Lack of awareness of emotional pain.
4 - 4.5	Somewhat incongruent. eg. Something about how this family presents itself is not righ[illegible]
5	Very incongruent. eg. The family says one

thing and the therapist senses another.

IV. MANAGEMENT OF DIABETES

A. Knowledge About Disease

1 - 1.5	High awareness and interest about the di[illegible]e. eg. Desire to learn all about the diseas[illegible]
2 - 2.5	Somewhat interested and aware. eg. [illegible]mily had a nonchalance attitude but were aware of the facts about the disease.
3 - 3.5	Knowledgable about the disease, but uninvolved. eg. Family members knew about the disease, but separated themselves from the disease management.
4 - 4.5	Appeared to not care about the disease. eg. Seemed to be apathetic toward the facts, or the management, of the disease.
5	Ignorant of disease. Did not know anything about the di[illegible]se and did not care to learn.

B. Empathy to Diabetic Adolescent

1 - 1.5	Consistent, empathetic response. eg. Family members offered emotional support for the diabetic member.
2 - 2.5	Some resistance toward empathetic response.
3 - 3.5	Attempted empathy, but failed to maintain it. eg. Try to be supportive, but are not consistent.
4 - 4.5	Absence of empathetic response.

5	Grossly inappropriate response. eg. The expectations of the diabetic member are unrealistic for their stage of development.

C. Acceptance of Disease by Family

1 - 1.5	Discuss openly the implications of the disease. eg. Family members can discuss freely and clearly the influences of the disease on their family.
2 - 2.5	Reluctantly discuss implications of the disease.
3 - 3.5	Appeared apathetic toward disease. eg. Family members do not care about the disease.
4 - 4.5	Begrudge having a child with diabetes. eg. Family members feel angry that diabetes is in their family.
5	Deny the implications of the disease. eg. Family members repress any influences and act as if the child does not have diabetes.

D. Overall Coping Ability (Circle the number that best describes the family's coping ability.)

VII. GLOBAL HEALTH-PATHOLOGY

(Circle the number that best describes this family's global health-pathology.)

IV. TEST ON CONTENT CODE

Give each of the following a rating.

1. Expressiveness

Answer

If a family was usually open ______

If a family masks most feelings ______

If a family expresses no feelings ______

2. Conflict

A family has no underlying conflict ______

A family has some conflict, but does not seem to influence functioning ______

3. Communication of Self-Concept

Family members express themselves clearly ______

Family members are very ambiguous in expressing themselves ______

4. Overt Power

Control is close to absolute ______

There is no leader ______

There is egalitarian leadership ______

5. Closeness

Family members have distinct boundaries ______

Family members are distant from each other ______

6. Mythology

The family was very congruent ______

The family was somewhat incongruent ______

7. Acceptance of Disease

The family begrudges the disease in their family ______

Family members deny diabetes changes their family ______

8. Mood and Tone

Family members are polite ______

Family members are pessimistic and hopeless ______

9. Goals

The family members are extremely efficient negotiators ______

The family are poor negotiators ______

10. Knowledge about Diabetes

Family members are aware but do not get involved with the disease ______

Family members are only somewhat interested in the disease ______

11. Empathy

Family members had inappropriate responses to feelings ______

Family members had no empathetic responsiveness ______

12. Responsibility

Family members take responsibility for their own actions ______

Members sometimes take responsiblity for own actions, but like to blame others ______

13. Parental Coalitions

Parents have a strong coalition ______

Parent-child coalition is the strongest ______

14. Empathy to Diabetic Adolescent

Obvious resistence towards one another but give empathetic responses ______

No empathetic responses were given ______

15. Permeability

Family members are very open to one another ______

Members are frequently unresponsive
to one another ______

16. Power Structure

It is easy to determine ______
It is relatively hard to determine ______

17. Overall Coping Ability

The family had a fair coping ability ______
The family had good coping ability ______

18. Invasiveness

Family members speak for themselves ______
Family members have occasional
invasions in conversations ______

Answers on Content Code

1. 1 - 1.5
   4 - 4.5
   5

2. 5
   4 - 4.5

3. 1 - 1.5
   5

4. 3 - 3.5
   1 - 1.5
   5

5. 5
   3 - 3.5

6. 1 - 1.5

8. 2 - 2.5
   5

9. 1 - 1.5
   4 - 4.5

10. 3 - 3.5
    2 - 2.5

11. 5
    4 - 4.5

12. 1 - 1.5
    3 - 3.5

13. 5

15. 1 - 1.5
    4 - 4.5

16. 4 - 4.5
    2 - 2.5

17. 3 - 3.5
    1 - 1.5

18. 5
    3 - 3.5

4 - 4.5

7. 4 - 4.5

5

1 - 1.5

14. 2 - 2.5

4 - 4.5

Test on Terms

MATCHING

Match each term to the best definition by placing the letter of the term on the line.

1. ___ Evaluating the autonomy of the individual
2. ___ The degree the family encouraged the open communication of affect.
3. ___ How the family receives the disease
4. ___ Concept of how the family functions as a group
5. ___ Presence or absence of boundaries between individuals
6. ___ Feeling tone of family's interactions
7. ___ Family's overall efficiency in problem solving

A. Expressiveness

B. Mythology

C. Global Health-Pathology Scale

D. Communication of Self-concept

E. Responsibility

F. Acceptance of Disease by family

G. Empathy to Diabetic Adolescent

8. ___ Overall rating of a family

9. ___ Degree of unresolved conflict

10. ___ Degree family members speak for one another

11. ___ Parents relating to Adolescent diabetic's feelings

12. ___ General Score for the family's ability to cope with the management of diabetes.

13. ___ "Pecking order"

14. ___ Openness and receptiveness to the statements of other family members

15. ___ Relationship structure in this family

16. ___ Degree of sensitivity to, and understanding of, each other's feelings within this family

17. ___ Basic power structure of the total family system

18. ___ Awareness of the basic understanding of the disease

H. Closeness

I. Power Structure

J. Invasiveness

[illegible]al-Directed Negotiation

L. Parental Coalitions

M. Conflict

N. Overt power

O. Permeability

P. Overall Coping Ability

Q. Mood and Tone

R. Empathy

19. ___ Degree to which family members take responsibility for their own past, present and future actions.

S. Knowledge about Diabetes

ANSWERS ON MATCHING

1. D

2. A

3. F

4. B

5. H

6. Q

7. K

8. C

9. M

10. J

11. G

12. P

13. I

14. O

15. L

16. R

17. N

18. S

19. E