

A STUDY OF BODY IMAGE IN
ADOLESCENT DIABETICS IN RELATION TO
THE AGE OF ONSET

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BY
CAROL ANNE GATES

HOUSTON, TEXAS

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Texas Woman's University

Denton, Texas

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We hereby recommend that the thesis prepared under
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be accepted as fulfilling this part of the requirements for the Degree of
Master of Science

Committee:

Marlene L. McClure
Chairman
Lucas
Patricia P. Smith

Accepted:

Mary Evelyn Huey
Dean of Graduate Studies

TABLE OF CONTENTS

Chapter

I. Introduction.....	1
Statement of Problem	
Purposes of Study	
Assumptions	
Definition of Terms	
Limitations	
Justification of Study	
II. Review of Literature.....	12
III. Methodology.....	30
Data Collection	
Method of Data Analysis	
IV. Analysis and Interpretation of Findings.....	40
Characteristics of the Sample	
Comparison of Diabetics and Nondiabetics in the Perception of Their Body	
The Diabetic's Perception of His Body in Relation to the Age of Onset	
Comparison of Body Image of Diabetics and Nondiabetics According to Socioeconomic Class	
V. Summary, Conclusions, and Recommendations.....	69
Conclusions	
Recommendations	
Appendixes.....	75
Bibliography.....	99

LIST OF TABLES

Table

1. Years of Education Completed by the Heads of the Households for the Lower- and Middle-Class Groups.....41
2. Comparison of Four Groups of Adolescents by Race and Socioeconomic Class.....42
3. Comparison of Two Groups of Adolescent Diabetics in Relation to Other Family Members with Diabetes.....43
4. Comparison of Four Groups of Diabetic and Nondiabetic Adolescents by Age.....44
5. Comparison of Two Groups of Adolescent Diabetics by Age of Onset in Years.....45
6. Comparison of Diabetics and Nondiabetics on Their Ratings of the Concepts "ME" and "MY BEST FRIEND".....46
7. Comparison of Diabetics' and Nondiabetics' Ratings of Four Factors in Relation to Both Concepts.....49
8. Comparison of Twenty Diabetics' Ratings of Two Concepts in Relation to the Age of Onset.....51
9. Comparison of Twenty Diabetics' Ratings of Two Concepts on Four Factors in Relation to the Age of Onset.....53

10.	Comparison of Lower-Class and Middle-Class Diabetics and Nondiabetics in Relation to the Concepts "ME" and "MY BEST FRIEND".....	56
11.	Comparison of Lower-Class Diabetics and Nondiabetics with the Four Factors for the Concepts "ME" and "MY BEST FRIEND".....	58
12.	Comparison of Middle-Class Diabetics and Nondiabetics with the Four Factors for the Concepts "ME" and "MY BEST FRIEND".....	61
13.	Comparison of the Concepts "ME" and "MY BEST FRIEND" in Relation to the Current Age of Forty Adolescents.....	63
14.	Comparison of the Concepts "ME" and "MY BEST FRIEND" with the Current Age of Diabetics and Nondiabetics.....	65
15.	Comparison of the Concepts "ME" and "MY BEST FRIEND" with the Current Age Groups in the Lower- and Middle- Socioeconomic Classes.....	67

CHAPTER I

INTRODUCTION

It was evident from the literature that adolescence is a period of time in an individual's life when numerous bodily changes occur. The various physical changes of height, weight, and body build and the growth and development of the sex organs and the secondary sex characteristics produce a change in the adolescent's view of his body, not only in its appearance but also in its use. The adolescent perceives his body as being useful and purposeful, or as a handicap in what he wishes to do. Thus, a significant consequence of the adolescent's growth, change, and increase in feelings is an intense focus of attention on his body.¹ The bodily changes that occur during adolescence may not be as important as the significance that the adolescent and the people around him attribute to them. He will depend on others' responses to let him know if his body significantly contributes to his self-esteem. Therefore, the adolescent's bodily traits are linked with his view of himself.²

¹Mary O. Dempsey, "The Development of Body Image in the Adolescent," Nursing Clinics of North America 7 (December 1972): 610-611.

²Ibid., p. 612.

The psychological and social consequences of a chronic illness, such as diabetes mellitus, and the changes in body image in the adolescent serve as conflicting forces for the adolescent with diabetes. According to King,

Reaction to illness is in part an individual psychological phenomenon based on adjustment to the anxiety induced by fear of death, of mutilation, or of reduced function.³

At the same time, however, reaction to an illness is a social phenomenon. The pattern of interrelationships between the ill person and the people surrounding him are affected, especially the family. Illness often disrupts the demands associated with social roles. King stated that the reactions to illness, individual and social, are not separated from each other.⁴

Reactions to an illness are also known to vary within lower- and middle-socioeconomic classes. According to Rainwater, the lower-socioeconomic class perceive their bodies as injuring or incapacitating them in some way. When the lower-class discuss illness, they communicate alienation from their bodies. They differ in this respect

³Stanley H. King. "Social Psychological Factors in Illness," in Handbook of Medical Sociology, eds. Howard S. Freeman, Sol Levine, and Leo G. Reeder (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 119.

⁴Ibid.

from the middle-socioeconomic class who identify with their bodies and strive toward a cure of illness. The lower-class, according to Rainwater, have a low self-evaluation, but the middle-class, however, emphasize a high value and worth of the self and of the body.⁵

The adolescent, as with other people of all ages having a chronic illness, has varied psychologic reactions which are dependent upon his illness, age of onset, and the emotional support he receives.⁶ Chronic illness, when viewed as an impairment of health, often prevents the person from engaging in his normal or usual activities.⁷ Leonard stated that any individual who has a chronic illness segregates himself from others or is segregated from others by society. He is often regarded as being different and not capable of accomplishing the demands made upon him.⁸

⁵Lee Rainwater, "The Lower Class," in Among the People: Encounters with the Poor, eds. Irwin Deutscher and Elizabeth J. Thompson (New York: Basic Books, Inc., 1968), pp. 262-263.

⁶Fernando J. deCastro and Ursula T. Rolfe, The Pediatric Nurse Practitioner (St. Louis: C. V. Mosby Company, 1972), p. 137.

⁷Beverly J. Leonard, "Body Image Changes in Chronic Illness," Nursing Clinics of North America 7 (December 1972): 687.

⁸Ibid., p. 690.

The chronic illness selected for this research study was diabetes mellitus because diabetes does have many long-range effects on an individual's body image and adolescence is a period of significant bodily changes. According to Sussman, the onset of diabetes is an emotional crisis whether it is diagnosed before the age of sixteen (juvenile onset) or at a later age. The individual's response to the disease is determined closely by his age at the time of onset. Sussman stated it is probable that the later the age of onset, the greater the patient's capability of coping with the demands of his disease. It is known, however, that the arrival of adolescence is a period of emotional adjustments. With the difficult transfer from childhood to adulthood, the added emotional burden of a chronic illness, such as diabetes, will make this transition a more difficult one.⁹ It, thus, appeared apparent that the age of onset in the adolescent diabetic could have an effect on the adolescent's body perception since he is now concerned with his body and its image upon himself and others. According to Swift et al. :

Self-percept, dependence-independence balance,
and overall psychiatric classification

⁹Karl E. Sussman, ed., Juvenile-Type Diabetes and Its Complications (Springfield, Illinois: Charles C. Thomas, 1971), pp. 424-425.

are all significantly associated with control. The children who perceive themselves as damaged and mutilated persons...are unable to maintain satisfactory regulation of the diabetes.¹⁰

Statement of Problem

The adolescent's perception of himself and the continuous appraisal by himself and others of his changing body influence the adolescent's point of view in relation to health problems and required therapeutic regimens.¹¹ It was evident from the literature that a chronic illness significantly affects the adolescent's image of his body, which is going through major changes at this period in his life. The significance of the age of onset cannot be overlooked because it may affect the adolescent's view of his body during a time when he is not only going through a transition from childhood to adulthood but also a time when he is confronted with the physical and psychosocial problems of a chronic illness. This study was therefore concerned with the effects of diabetes upon the adolescent's body image in relation to the age of onset that diabetes occurred.

¹⁰Charles R. Swift, Frances Seidman, and Harry Stein, "Adjustment Problems in Juvenile Diabetes," Psychosomatic Medicine 29 (1967): 567.

¹¹Irene Riddle, "Nursing Intervention to Promote Body Image Integrity in Children," Nursing Clinics of North America 7 (December 1972): 659.

Purposes of Study

The purposes for conducting this study were: 1) to determine how the adolescent diabetic perceived his body when he was faced with a chronic illness; 2) to determine if the age of onset of diabetes affected the adolescent's body image, and if so, in what significant way; and 3) to determine how adolescents of two socioeconomic classes differed in their body images when those who had diabetes mellitus were compared to those who did not have any signs of illness.

Assumptions

This study was based on several assumptions and they included: 1) Adolescence is a period of time in an individual's life when numerous bodily changes occur. 2) The concept of body image in the adolescent cannot be considered without initially realizing that any individual has had many experiences with his body by the time he reaches adolescence, and thus the changes of adolescence are superimposed on these previous experiences.¹² 3) An individual with a chronic illness often segregates himself

¹²Dempsey, "The Development of Body Image in the Adolescent," p. 609.

from others or is segregated from others by society.¹³

4) The individual adolescent's reaction to the onset of a chronic illness will largely be dependent upon the degree of maturity and responsibility he has developed as an individual.¹⁴ 5) Although illness constitutes a deviant state for the individual, it creates patterned expectations which define those behaviors appropriate to his new state. These behaviors are concerned with the individual and those specific persons who interact with him.¹⁵ 6) Lower-socio-economic people perceive the body as dangerous and in some way incapacitating them. They express a sense of alienation from their bodies and tend to have a low self-evaluation.¹⁶ 7) Middle-socioeconomic people emphasize a high value and worth of the self and of the body. Identification with the body is characteristic of this socioeconomic class.¹⁷

¹³Leonard, "Body Image Changes in Chronic Illness," p. 690.

¹⁴Sussman, Juvenile-Type Diabetes and Its Complications, p. 425.

¹⁵Gene G. Kassebaum and Barbara O. Baumann, "Dimensions of the Sick Role in Chronic Illness," in Patients, Physicians, and Illness, ed. E. Gartly Jaco (New York: Free Press, 1972), p. 141.

¹⁶Rainwater, "The Lower Class," pp. 262-263.

¹⁷Ibid.

Definition of Terms

For the purpose of this study, the following terms were defined: 1) Adolescence represented those psychosocial and physical maturation processes initiated by the stage of puberty and ending with the accomplishment of young adulthood.¹⁸ Adolescence involves emancipation from parents and other adults, the acquisition of skills for future independence, the development of a heterosexual role, and the establishment of a stable, positive adult self-identity.¹⁹ For the purpose of this study, adolescence referred to the age period twelve to seventeen years. 2) Body image referred to the conscious and unconscious picture that an individual has of his body at any period of time.²⁰ 3) Chronic illness referred to an impairment in health that demands an extended period of medical attention. It may or may not be obviously disabling. The disability results from an impairment in the biologic, physiologic, or social effectiveness of an individual and prevents the

¹⁸Lawrence H. Schwartz and Jane Linker Schwartz, The Psychodynamics of Patient Care (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 196.

¹⁹Louis L. Fine, "What's a Normal Adolescent?," Clinical Pediatrics 12 (January 1973): 2.

²⁰Schwartz, The Psychodynamics of Patient Care, p. 404.

pursuit of his normal activities.²¹ The chronic illness focused upon in this study was diabetes mellitus. 4) Age of onset referred to the period of time in an individual's life when the awareness of a disease process was first recollected by the individual. For this study, age of onset referred to the age at which the first signs or symptoms of diabetes had been recalled by the adolescent. 5) Lower-socioeconomic class, for this study, referred to the head of the household as a) having graduated from high school or having partial college training, and b) working in a skilled or semiskilled job. 6) Middle-socioeconomic class, for this study, referred to the head of the household as a) having graduated from college or having graduate professional training, and b) being owners of small independent businesses or professionals. 7) Adolescents without any signs of illness referred to those individuals who were not acutely ill or did not have a chronic illness of long duration. The individual might, however, have had an illness which was transitory in nature.

Limitations

Because of the limited time during which this study

²¹Leonard, "Body Image Changes in Chronic Illness," p. 687.

was to be conducted, there were no broad generalizations that could be formulated in relation to the adolescent diabetic and body image. It was recognized by the researcher that the age of onset was only one variable that may have an effect on the adolescent's body image; there were possibly many others which were not explored in this study.

Justification of Study

It seemed apparent that the nurse could significantly contribute to the adolescent diabetic's management of the psychosocial consequences of adolescence and diabetes. The nurse should be able to assess the psychosocial influences that diabetes has upon the adolescent's perception of his body. During the transition from childhood to adulthood the adolescent should be given emotional support through encouragement, acceptance of failures, recognition of anxieties, and assistance in recognizing and using societal adjustment processes.²² The nurse often has unrealistic expectations for adolescents in the control of a health problem.²³

²²Lovick C. Miller, "Short-Term Therapy with Adolescents, " in Crisis Intervention: Selected Readings, ed. Howard J. Parad (New York: Family Service Association of America, 1965), p. 166.

²³Riddle, "Nursing Intervention to Promote Body Image Integrity in Children," p. 659.

For the health professional, a chronic illness, such as diabetes, serves as a continuous reminder of his inability to cure the patient; thus, he becomes discouraged and frustrated with the patient and those people close to him.²⁴

According to Bettelheim, "Rightly or wrongly, the public image of the nurse is that of an efficient and obedient helper of the physician, who shows little concern for the emotional needs of the patient."²⁵ Esther Lucile Brown stated that there are times when physicians and nurses believe that had the patient been given the opportunity to express his feelings initially, or had they jointly discussed the planning and coordination of patients' care, time may have been saved and the patient's recovery progressed more rapidly.²⁶

²⁴deCastro, The Pediatric Nurse Practitioner, p. 137.

²⁵Bruno Bettelheim, "To Nurse and to Nurture," in The Psychodynamics of Patient Care, Lawrence H. Schwartz and Jane Linker Schwartz (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1972), p. 20.

²⁶Esther Lucile Brown, "Meeting Patients' Psychosocial Needs in the General Hospital," in Social Interaction and Patient Care, eds. James K. Skipper and Robert C. Leonard (Philadelphia: J. B. Lippincott Company, 1965), p. 15.

CHAPTER II

REVIEW OF LITERATURE

For the adolescent with diabetes mellitus, the changes in body image in adolescence and the psychological and social consequences of chronic illness serve as conflicting forces. According to King, reaction to an illness is both a psychological and a social phenomenon. Psychologically, reaction to an illness is based on adjustment to anxiety that may be induced by fear of mutilation or of reduced function. Sociologically, illness causes a disruption in the demands associated with social roles. Interrelationships between the ill person and the people around him are affected, especially the family system.²⁷

According to Rainwater, reaction to an illness varies within the lower- and middle-socioeconomic classes. For the lower-class people, the world is perceived as a dangerous place. There is also a tendency for the lower-class to view the body as potentially dangerous. Thus, they perceive their bodies as injuring or incapacitating them in some way.

²⁷King, "Social Psychological Factors in Illness," p. 119.

When the lower-class discuss illness, they often communicate alienation from their bodies. They express a sense of distance from the illness processes in their bodies. They differ in this respect from middle-class people who are found to identify with their bodies and to strive toward a cure of physical illnesses. With this tendency of the lower-class to view the body as potentially dangerous, there develops a poor differentiation of bodily parts and function.

An additional general characteristic of lower-class persons is low self-evaluation. There are difficulties in the maintenance of a secure self-esteem. They, thus, develop the attitude of viewing themselves as being unworthy. This tendency to think of themselves as unworthy is generalized to their bodies.

In contrast to the lower-class, the middle-class emphasize a high value and worth of the self and of the body. For the middle-class person, illness or lowered bodily functioning is regarded as an insult to the body and the self. This insult cannot be tolerated and is remedied as soon as possible.

Lower-class people have a tendency to develop negative images of their children as being "bad" and/or "unsuccessful." According to Rainwater, this appears

inevitable when one realizes the lower-class conception of themselves and of the world. Lower-class parents are apparently indifferent to obvious physical illnesses their children may have. Any program of treatment which relies on the parents' careful observation or supervision of children's illnesses is more likely to fail than in middle-class people. This is due to the lower-class parents having a greater tolerance for their children's physical malfunctioning.

Whenever impaired functioning is designated as a "normal" state of the body and of the self, the expectations of what an individual can and cannot do are immensely modified. It is likely, according to Rainwater, for the individual "to counter claims on the part of other individuals by pointing to his physical condition."²⁸

Simmons, Rosenberg, F., and Rosenberg, M. conducted a cross-sectional study in order to determine whether adolescence is a period of disturbance for the self-image of the child and, if so, at what age of adolescence and under what social conditions is the disturbance the greatest. Four dimensions of the self-image were measured. The first dimension was self-consciousness which referred to the

²⁸Rainwater, "The Lower Class," pp. 262-266.

prominence of the self to the individual. The second dimension of the self-image was stability. If one must take account of himself as a significant part of a situation and if he is unsure of what he is like, then he is deprived of a basis for action and decision. The third dimension was self-esteem which referred to the individual's global positive or negative attitude toward himself. The fourth dimension referred to the perceived self although it is not an integral part of the phenomenal self.²⁹

The data for the analysis were collected from 1,917 public school children in grades three through twelve. The sample was sixty-three percent Negro and consisted heavily of the working class. Indexes were developed to measure the four dimensions of the self-image through the use of the Guttman Scale.³⁰

The findings indicated that the early adolescents, especially those between twelve and thirteen, when compared to children in the eight to eleven age group, exhibited heightened self-consciousness, greater instability of the

²⁹Roberta G. Simmons, Florence Rosenberg, and Morris Rosenberg, "Disturbance in the Self-Image at Adolescence," American Sociological Review 38 (October 1973): 553-555.

³⁰Ibid., p. 555.

self-image, a slightly lower self-esteem, and a more negative "perceived self", which referred to a less favorable view of the opinions held of them by significant others. To summarize, the findings indicated a general pattern of self-image disturbance in early adolescence.³¹ The researchers suggested however that the child's environment might have had a stronger effect than his age in producing these changes. The children who had entered junior high school appeared to be more disturbed in their self-image than their age-peers still in elementary school. It should also be noted that the transition from junior to senior high school did not significantly affect the self-image of the children.³² Thus, transition into junior high school at puberty is a significant event for the child. He moves from an environment where the teacher is a parent-surrogate to a more impersonal environment. The child is expected to behave more independently and more responsibly.³³

During the transition from childhood to adulthood, the adolescent reaches a stage in his development where he is

³¹Simmons, Rosenberg, F., and Rosenberg, M., "Disturbance in the Self-Image at Adolescence," pp. 556-560.

³²Ibid., pp. 560-564.

³³Ibid., p. 565.

attaining the capacity to both visually and mentally represent specific relationships, fears, wishes, threats, and injuries as occurring to the self. As the adolescent's mental life becomes more complex, he is able to conceive or imagine the functions and actions of his body in addition to desired or feared happenings to his body. Thus, alterations in bodily function, bodily feeling, and bodily form are believed to have an effect on the adolescent's body image.³⁴

Kaufman and Hersher, in a study of diabetic teenagers, illustrated the relationship of physical illness to changes in body image. Kaufman and Hersher studied five diabetic teenagers ranging from thirteen to nineteen years of age as part of a continued study of self-representation and body image. Information was gathered by means of interviewing techniques which were designed to derive fantasy material and drawings of the teenagers' illness and internal bodily function. Through the use of drawings, the teenagers reproduced a sample of their body image--a visual representation of what they thought of themselves. All of the subjects had been well-educated by their physicians and

³⁴Richard V. Kaufman and Betsy Hersher, "Body Image Change in Teen-Age Diabetics," Pediatrics 48 (July 1971): 123-124.

nurses about their problems and management and had received programmed instruction on a teaching machine.³⁵

The data revealed that in all of the subjects, there were underlying distortions of their knowledge of the disease process. Illness was seen as the result of external deprivation, or of internal abnormalities and deficiencies, such as a lacking of part of the pancreas, blockage within the pancreas, or dilatation of the stomach. The subjects, by drawing what the illness meant to them rather than what they knew about the pathophysiological processes, described themselves as feeling seriously damaged by the diabetes.³⁶ The central role of visual components in body image construction was seen as one link between changes in physical health and body image.³⁷

Swift, Seidman, and Stein, in a comparative and correlational study of fifty juvenile diabetics and fifty individually matched controls, found that greater pathological body image existed in the juvenile diabetics on

³⁵Kaufman and Hersher, "Body Image Change in Teen-Age Diabetics," p. 124.

³⁶Ibid., p. 123.

³⁷Ibid., p. 128.

independently scored test data.³⁸ The experimental subjects, obtained from clinics and private physicians in two urban centers of New Jersey, as well as from a camp for diabetics that serves the entire state, encompassed the entire socioeconomic range of the population and the subjects ranged from seven to seventeen years of age with equal numbers of males and females. The control subjects were obtained from public and parochial schools in Trenton, New Jersey and encompassed the range of age, socioeconomic status, and sex distribution comparable to the diabetic sample. Both black and white children were included in the study but were not equally represented. The socioeconomic status of the control subjects was matched on information from the parents' education and occupation.³⁹ Evaluation included psychiatric interview, psychological testing, interviews in the home with parents, and medical rating of diabetic control for the diabetic subjects.⁴⁰ Interviews were identical for both groups except the controls were not asked any questions

³⁸Charles R. Swift, Frances Seidman, and Harry Stein, "Adjustment Problems in Juvenile Diabetes," Psychosomatic Medicine 29 (1967): 555.

³⁹Ibid., pp. 557-558.

⁴⁰Ibid., p. 555.

relating to diabetes. In addition, for the diabetic sample, inquiry was made on the subjects' thoughts and feelings of their illness, attitudes toward the various diabetic routines, and the relationship of diabetes to their social adjustment and future.⁴¹

It was found that better control of the diabetes was associated with families with higher incomes. Another finding of this study was that both the earlier the age of onset and the longer the duration of the illness, the less the ability to regulate the diabetes. It is of importance to note that since the controls of this study were normal persons without any evidence of chronic illness, the results cannot be restricted to only diabetes but may represent the effects of chronic illness.

In this study, self-percept and dependence-independence were found to be significantly associated with regulation of the disease process. An adequate self-percept and dependence-independence were most closely associated with acceptance of the disease by the patient, home adjustment, and emotional tone of the home. Juvenile diabetics who perceive themselves as damaged and mutilated persons are unable to maintain satisfactory control of the diabetes.

⁴¹Ibid., p. 558.

The fact that the diabetic is different is too often denied and there is an excess of energy used in assuring him that he is "no different."⁴²

A ten to twenty year survey of forty-three diabetic patients was conducted by Fischer and Dolger during which time the behavior and psychological problems of the patients were observed from childhood through adolescence and early adulthood. According to Fischer and Dolger, in the transition from childhood and adolescence to adult life, normal children show temporary alterations in their behavior. These behavior alterations are more prominent in diabetic children due to the medical regimen to which they must adhere and due to specific psychic and physical factors associated with the diabetes.⁴³

The majority of the children in the study were from poor to lower-middle class families with thirty-four of the children attending the outpatient department at the Mount Sinai Hospital and nine of the children being private patients. The age of onset of diabetes in all of the

⁴²Swift, Seidman, and Stein, "Adjustment Problems in Juvenile Diabetes," pp. 564-568.

⁴³Alfred E. Fischer and Henry Dolger, "Behavior and Psychologic Problems of Young Diabetic Patients," Archives of Internal Medicine 78 (December 1946): 711.

patients was twelve years of age or younger. Twenty patients were continually observed for at least ten years and twenty-three patients for fifteen to twenty years. Family and social histories were investigated and contacts with the family were maintained throughout the study.⁴⁴

The findings of this study revealed that the general factors influencing the behavior of the diabetic children were similar to those found in other chronic illnesses.⁴⁵ Many of the diabetic children refused to take food to school because it emphasized their feeling of "difference." They were also forced to refuse to participate in competitive sports, and this increased their feeling of "difference." It was not always possible for the children to receive an adequate diet which permitted maximum exercise and was also associated with good diabetic control.⁴⁶

The majority of the adolescents were greatly resentful of others' awareness of their condition. This was found to be true especially among the girls for whom adolescence is already a more difficult period of transition and adjustment. Some of the boys, after being discharged from the military service, became embarrassed when asked

⁴⁴Ibid., pp. 711-713.

⁴⁵Ibid., p. 713.

⁴⁶Ibid., p. 716.

why they were not in military uniform although, as a group, they were like other outwardly healthy-looking boys. However, as adult life approached, the adjustments and behavior of the majority of the patients improved.⁴⁷

This study by Fischer and Dolger also revealed no relationship between either the age of onset of the diabetes or its duration and the type of behavior. No consistent difference in the degree of personality change could be found between those who had developed diabetes in early childhood (before six years of age) and those who had developed it between six and twelve years of age.⁴⁸

In a study by Collier, Jr., and Etzwiler, a high correlation of knowledge levels between juvenile diabetics and their parents was revealed. One hundred and twenty-nine juvenile diabetics from fifty-eight junior and senior high schools in the Minneapolis-St. Paul area and their parents were given a thirty-four item test to evaluate their knowledge of diabetes and to determine any significant

⁴⁷Fischer and Dolger, "Behavior and Psychologic Problems of Young Diabetic Patients," p. 717.

⁴⁸Ibid., p. 718.

differences in understanding.⁴⁹ Primarily, juvenile diabetics want to be able to have an enjoyable life as they endure this chronic disease and hope that minimal impairment will be made upon their daily activities. The most effective control for any individual juvenile diabetic can be accomplished only by a well-educated and properly motivated patient and his family in cooperation with a knowledgeable and interested physician.⁵⁰

Benoliel, in a study on the emergence of a diabetic's identity during the transition into adolescence, attempted to investigate the psychosocial meaning of chronic illnesses that occur in childhood and adolescence. Diabetes mellitus was selected as the chronic illness for intensive study.⁵¹ In the study, the four criteria that were used for selecting the nine sample families were socioeconomic status, number of parents living in the home, number of

⁴⁹Boy N. Collier, Jr. and Donnell D. Etzwiler, "Comparative Study of Diabetes Knowledge among Juvenile Diabetics and Their Parents," Diabetes 20 (January 1971): 51.

⁵⁰Ibid., p. 57.

⁵¹Jeanne Quint Benoliel, "The Developing Diabetic Identity: A Study of Family Influence," in Communicating Nursing Research: Methodological Issues in Research, ed. Majorie V. Batey (Boulder, Colorado: Western Interstate Commission for Higher Education), September, 1970, pp. 14-15.

diabetics living in the home, and years since onset of diabetes. Information was gathered by semi-structured interviews with the diabetics and their families, medical records, interviews with health professionals and adult diabetics, and participant observation in an urban medical center and at a diabetic camp in the High Sierras. Three socioeconomic levels--middle class, lower-middle class, and working class--were represented in the final sample. Benoliel used Hollingshead's Index of Social Position Scores to establish the social class of the families.⁵²

The concept "social visibility" was used to refer to the "obviousness" of a specific illness in regard to public awareness. The selection of this concept was related to the main concerns that are experienced by adolescents in today's society. Diabetes, in general, is characterized, by Benoliel, as having low social visibility, in that it is not as observable to the public as physical disfigurements or disabling handicaps.⁵³ Success in keeping low social visibility requires self-control and self-maintenance by the diabetic and depends upon knowledge of the disease, its treatment, and its controllability. When a person is informed that he has diabetes, it marks the initiation of a

⁵²Ibid., pp. 19-21.

⁵³Ibid., p. 15.

transition from the status of "normal" person to "non-normal" person. For the adolescent diabetic a negatively valued status is given to him during his difficult transition from childhood into adulthood.⁵⁴

The attitudes and the actions of parents are the most significant components that affect the social environment in which the adolescent begins to understand the personal and social meanings of being a diabetic. The data revealed four parental styles of functioning--protective, adaptive, manipulative, and abdicative. The "protective style" was characterized by the parent performing the diabetic procedures and maintaining strict control over the child's time and activity. The "adaptive style" was characterized by emphasis on the child performing the diabetic procedures, with age- and sex-graded control over the child's time and activity fostered rather than diabetes-determined control. The "manipulative style" was characterized by the manner which was utilized for performing the procedures, and usually some of the requirements required by the diabetic became a source of tension between the parent and child. The "abdicative style" was characterized by the parent who was only externally involved in carrying out the

⁵⁴Ibid., pp. 16-17.

therapeutic plan and in supervising the child's activity. The differences in parental style that were found in this study appeared to be related to tensions in family relationships. In two of the homes, the fathers' adaptive style counterbalanced the mothers' protective or manipulative styles. In a third family the father's abdicative style combined with the mother's protective-manipulative style to create an environment in which the child (diabetic) became the central figure in which the father (a diabetic) was inconsistently protective and the mother often used manipulation.⁵⁵

According to Sussman, the onset of diabetes has specific effects on the individual regardless of the reactions of his parents. The individual's response to the disease is determined by his age at the time of onset but differences of opinions exist as to what effect the age of onset has on the adolescent's personality. With the difficult transfer from childhood to adulthood, the added emotional burden of a chronic illness, such as diabetes, will make this transition a more difficult process.⁵⁶

⁵⁵Benoliel, "The Developing Diabetic Identity: A Study of Family Influence," p. 24.

⁵⁶Sussman, Juvenile-Type Diabetes and Its Complications, pp. 424-425.

Because there may be limitations to the activities of juvenile diabetics, the adolescent diabetic has increased feelings of inadequacy and of being different. He also feels the disease is a stigma. Thus, the adolescent diabetic may be more significantly concerned about his body, adequacy, sex, marriage, and vocational achievement than the adolescent who is not burdened with a chronic illness.⁵⁷

In a study by Bohan an evaluation of age and sex differences in self-concept was conducted on fourth, sixth, eighth, and tenth grade pupils from public schools. The subjects were predominantly from middle class white-collar and professional families.

The data were collected and analyzed separately for boys and girls in order to evaluate sex differences in self-concept and in changes in self-concept with age. The Coopersmith Self-Esteem Inventory was utilized in the study to measure the self-concept of the subjects.⁵⁸

The findings of both sex and age comparisons revealed significantly lower self-concept scores for tenth grade girls than for any comparison group. Other age and sex comparisons

⁵⁷Sussman, Juvenile-Type Diabetes and Its Complications, p. 429.

⁵⁸Janis S. Bohan, "Age and Sex Differences in Self-Concept," Adolescence 8 (Fall 1973): 379-380.

were not significant. This significantly lower self-concept among adolescent girls suggests that significant factors may be involved in the adolescent girl's self-perception. Bohan indicated that sex role development and a re-evaluation of self might explain why adolescent girls exhibited a lower self-concept. According to Bohan, "the adolescent girl accepts and incorporates society's evaluation of her role as inferior, and so values herself less."⁵⁹ In conclusion, the adolescent girls in the study had lower self-concepts than the younger girls and differed from the adolescent boys "since adolescence is the period of the most intense evaluation of roles as well as the apex of sex-role development."⁶⁰

⁵⁹Ibid., pp. 382-383.

⁶⁰Ibid., p. 383.

CHAPTER III

METHODOLOGY

A chronic illness, such as diabetes mellitus, has been emphasized in the literature as significantly affecting the adolescent's image of his body. The significance of the age of onset cannot be overlooked because it may affect the adolescent's view of his body at a time when he is not only progressing from childhood to adulthood but also a time when he is confronted with the physical and psychosocial problems of a chronic illness. The researcher was, therefore, focusing her attention on how the adolescent's body image was affected by diabetes in relation to its age of onset.

The purposes of this study, as previously stated, were: 1) to determine how the adolescent diabetic perceived his body when he was faced with a chronic illness; 2) to determine if the age of onset of diabetes affected the adolescent's body image, and if so, in what significant way; and 3) to determine how adolescents of two socioeconomic classes differed in their body images when those who had diabetes mellitus were compared to those who did not have any signs of illness.

The descriptive nonexperimental design was utilized

to study the adolescent diabetic's image of his body. The target population consisted of: female adolescents of lower- and middle-socioeconomic families, ranging from twelve to seventeen years of age, who resided in the Houston vicinity, and were diagnosed as having diabetes mellitus. Parallel groups from lower- and middle-socioeconomic families were used for a more accurate assessment of the adolescent diabetic's body image. These parallel groups consisted of adolescents without any signs of illness.

The criteria used for the selection of the study groups were the following: 1) The adolescent diabetics must have ranged between twelve and seventeen years of age; 2) The adolescent diabetics must have been females; 3) They must have resided in the Houston vicinity; and 4) The adolescents must have been diagnosed as having diabetes mellitus.

The criteria used for the selection of the parallel groups were the following: 1) The adolescents must have ranged between twelve and seventeen years of age; 2) The adolescents must have been females; 3) They must have resided in the Houston vicinity; and 4) The adolescents must not have had any signs of illness.

The study groups included ten female adolescent diabetics from lower-socioeconomic families and ten female

adolescent diabetics from middle-socioeconomic families. The lower-class adolescent diabetics were selected by the convenience method at a local outpatient metabolic clinic due to the clinic's limited number of diabetics meeting the criteria for selection. The middle-class adolescent diabetics were selected randomly from the caseload of a local private physician.

The parallel groups included ten female adolescents without any signs of illness from lower-socioeconomic families and ten female adolescents without any signs of illness from middle-socioeconomic families. The lower- and middle-socioeconomic adolescents were selected by the convenience method from the membership of a local family life educational organization.

The basic indicators which were used to establish the socioeconomic class of the adolescents' families were the occupation and the years of education of the head of the household, which were used in Hollingshead's Index of Social Position. The Index of Social Position was developed by Hollingshead for the purpose of estimating the positions individuals occupy in the status structure of the community. In the study conducted by Hollingshead and Redlich in 1948 on the interrelations between social class and mental illness in an urbanized community, a higher

association was obtained when a combination of residence, education, and occupation was correlated with judged class position. However, only a slightly lower association was obtained when the judged class position was correlated with a combination of any two of the three variables such as residence and occupation or education and occupation.⁶¹

Data Collection

The tool that was used in this study to determine the effects of adolescence and diabetes on the adolescent's body image in relation to the age of onset was the semantic differential which was devised through research on the development of an objective measure of meaning.

The semantic differential is "a combination of controlled association and scaling procedures."⁶² The subject is provided a concept to be differentiated and a set of bipolar scales characterized by the use of adjectives. His only task is to indicate for each item the direction of his association and its intensity on a seven-step scale. The sample of descriptive polar terms should

⁶¹August B. Hollingshead and Fredrick C. Redlich, Social Class and Mental Illness (New York: John Wiley and Sons, Inc., 1958), pp. 393-394.

⁶²Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1958), p. 20.

be as representative as possible of all the ways in which meaningful judgments can differ, but it should also be small in size in order to be efficient in practice.⁶³

The semantic differential is not a "test" having a definite set of items and a specific score. It is essentially a very general way of obtaining a specific type of information.⁶⁴ Factor analysis of the semantic differential has shown that most of the emotional meaning attached to words falls into one of three dimensions: evaluation (good/bad); potency (strong/weak); or activity (active/passive).⁶⁵

The concepts used in the semantic differential should be selected so as to reflect considerable individual differences. The concepts selected should also have a single, unitary meaning for the individual and should be familiar to all of the subjects.⁶⁶

⁶³Ibid.

⁶⁴Ibid., p. 76.

⁶⁵Elizabeth Hall, "The Poetry of the Semantic Differential," Psychology Today, November, 1973, p. 58.

⁶⁶Osgood, Suci, and Tannenbaum, The Measurement of Meaning, pp. 78-79.

The semantic differential, as a data collecting tool, is objective in nature. The procedures of measurement are explicit and are capable of being replicated. If two investigators are presented the identical collection of check-marks and they follow the rules, both must result in the same meanings of concepts. Although the interpretation of these results is a subjective matter, the "procedures completely eliminate the idiosyncrasies of the investigator in arriving at the final index of meaning, and this is the essence of objectivity."⁶⁷

In relation to reliability, studies indicate that for individual subjects a shift of more than two scale units represents a significant difference in meaning, and a shift of more than 1.00 to 1.50 scale units in factor score is significant, depending upon the particular factor. For group data, differences in measured meaning of one-half of a scale unit are significant at the five per cent level. The literature suggests that these levels of reliability should be satisfactory for most applications of the measuring instrument.⁶⁸

Since the semantic differential is used as an

⁶⁷Osgood, Suci, and Tannenbaum, The Measurement of Meaning, p. 125-126.

⁶⁸Ibid., p. 328.

instrument for measuring meaning, there should be a correlation of the semantic differential scores with an independent criterion of meaning. There is, however, no commonly accepted quantitative criterion of meaning. "Face validity" is, therefore, used in evaluating the semantic differential.⁶⁹ There is little question about the general face validity of the differential because there is obvious differentiation among concepts.⁷⁰

In relation to the sensitivity of the semantic differential, sets of closely similar, but different, word meanings are taken, and it can be shown that "the distinctions made by the semantic differential correspond to those made independently by language users."⁷¹

Although the semantic differential has been used infrequently in the study of body image, it would appear to be a relevant tool for its study because of the large variety of meanings of the concept of body image. A study conducted by Plutchik, Conte, and Weiner employed the semantic differential to determine the connotative meanings of the word "head" for seven study groups ranging from

⁶⁹Ibid., p. 140.

⁷⁰Ibid., p. 328.

⁷¹Ibid., p. 166.

geriatric patients to university students. The semantic differential was composed of twenty-three pairs of adjectives with eleven representing the "evaluative" category, five representing the "potency" category, and seven representing the "activity" category.⁷²

A significant finding of this study was that the oldest group differed little from the youngest groups. They viewed their "head" as more pleasurable, good, and active than did the other groups. Therefore, it did not appear that the older one became, the more distorted was one's body image.

An additional finding was that one of the groups, comprised chiefly of schizophrenic patients, scored consistently low on all three factors (evaluative, potency, and activity). This revealed that this group had the greatest number of bodily discomforts and worries. That the head was seen as bad, sick, and weak would, therefore, appear to be in accord with previous findings showing body image impairment in schizophrenics.

The finding that the evaluative and activity factors were inversely related to bodily worries and

⁷²Robert Plutchik, Hope Conte, and M. Bakur Weiner, "Body Feelings as Measured by the Semantic Differential," Proceedings, 80th Annual Convention, American Psychological Association, 1972, p. 669.

discomforts would suggest that the connotative meaning an individual attaches to his body becomes more negative in character as the number of his bodily worries and discomforts increases. According to Plutchik, Conte, and Weiner, the findings of this study lend construct validity to all three measures of body image.⁷³

In this study, the semantic differential was used to determine how the adolescent diabetic perceived his body when given a specific concept and a set of bipolar adjectival scales. Both the study groups and the parallel groups were given the identical concepts and scales. (See Appendixes A and B.)

The concepts and scales were pre-tested on two adolescent diabetics from both the lower- and middle-socioeconomic classes in order to: 1) determine if the concepts and scales were sufficiently discriminate; and 2) determine if the selected method for data analysis was appropriate for the data that was obtained.

Method of Data Analysis

The scores obtained from the semantic differential data are simply the numbers one through seven as assigned

⁷³Plutchik, Conte, and Weiner, "Body Feelings as Measured by the Semantic Differential," p. 670.

to the adjectival pairs of each concept.⁷⁴ The fifteen adjectival pairs for the two concepts were assigned one of the numbers, and the scores of each pair were obtained from the subject's check on the seven-point scale. The numerical values assigned to the adjectival pairs of each concept ranged from one to seven with the lowest value being one and the highest value being seven.

The data collected by the semantic differential was analyzed through the use of descriptive statistics. The researcher regarded the data collected as being on the interval scale; therefore, the measures of central tendency were used--namely the mean and the standard deviation.⁷⁵

⁷⁴Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 572.

⁷⁵John T. Roscoe, Fundamental Research Statistics for the Behavioral Sciences (New York: Holt, Rinehart and Winston, Inc., 1969), p. 42.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF FINDINGS

The purposes of this study were threefold: 1) to determine how the adolescent diabetic perceived his body when he was faced with a chronic illness; 2) to determine if the age of onset of diabetes affected the adolescent's body image, and if so, in what significant way; and 3) to determine how adolescents of two socioeconomic classes differed in their body images when those who had diabetes mellitus were compared to those who did not have any signs of illness.

Characteristics of the Sample

Examination of family characteristics of the two socioeconomic groups of adolescents included in the study revealed the following. The occupations of the heads of the households were in accord with those commonly associated with the lower- and middle-socioeconomic classes. The majority of the lower-class were skilled workers, and most of the middle-class were professionals. (See Appendix J.)

With respect to years of education completed by the heads of the households, the mean number of years for the

lower-socioeconomic group was 11.55 with a range of six while the mean and range for the middle-socioeconomic group was 15.30 and five, respectively, as illustrated in Table 1.

TABLE 1
YEARS OF EDUCATION COMPLETED BY THE HEADS
OF THE HOUSEHOLDS FOR THE LOWER-
AND MIDDLE-CLASS GROUPS

Socioeconomic Class	\bar{X}	Range
Lower-class Diabetics	11.9	5
Lower-class Nondiabetics	11.2	6
Middle-class Diabetics	16.0	5
Middle-class Nondiabetics	14.6	3

The four groups of adolescents in the study consisted of two major races: 1) Caucasian, and 2) Black. Table 2 shows the comparison of the four groups of adolescents by race.

TABLE 2

COMPARISON OF FOUR GROUPS OF ADOLESCENTS
BY RACE AND SOCIOECONOMIC CLASS

Socioeconomic Class	Caucasian	Black
Lower-class Diabetics	7	3
Lower-class Nondiabetics	3	7
Middle-class Diabetics	10	0
Middle-class Nondiabetics	<u>10</u>	<u>0</u>
	N=30	N=10

Inspection of Table 2 revealed an unequal number of adolescents according to race. All of the middle-class diabetics and non-diabetics were Caucasian. The majority of lower-class diabetics were Caucasian whereas the majority of nondiabetics were Black.

With respect to other family members with diabetes, few diabetics from the lower-class included in the group were from families with a history of diabetes whereas a majority of the adolescents in the middle-class came from families with another family member with diabetes, as illustrated in Table 3.

TABLE 3

COMPARISON OF TWO GROUPS OF ADOLESCENT DIABETICS
IN RELATION TO OTHER FAMILY MEMBERS
WITH DIABETES

Socioeconomic Class	Family History of Diabetes	
	Yes	No
Lower-class Diabetics	3	7
Middle-class Diabetics	<u>7</u>	<u>3</u>
	N=10	N=10

In respect to characteristics of individuals included in the study, the age of the adolescents of the four groups studied ranged from twelve to seventeen years. The stated age of each adolescent was confirmed by the parent(s). Comparison of the four groups of adolescents by age is displayed in Table 4.

TABLE 4

COMPARISON OF FOUR GROUPS OF DIABETIC AND
NONDIABETIC ADOLESCENTS BY AGE

Socioeconomic Class	Age Interval	
	12-14	15-17
Lower-class Diabetics	5	5
Lower-class Nondiabetics	2	8
Middle-class Diabetics	3	7
Middle-class Nondiabetics	<u>10</u>	<u>0</u>
	N=20	N=20

Inspection of Table 4 revealed an unequal distribution of adolescents according to age, with the exception of the lower-class diabetic group. It was noted that all of the subjects in the middle-class nondiabetic group ranged from twelve to fourteen years of age.

The mean age of onset of diabetes for the lower-socioeconomic group was 9 years while the mean age of onset for the middle-socioeconomic group was 8.7 years. In determining the age of onset of diabetes, both the adolescent and the parents(s) were questioned by the researcher. The comparison of the two groups of adolescent diabetics by age of onset in years is presented in Table 5.

TABLE 5
COMPARISON OF TWO GROUPS OF ADOLESCENT
DIABETICS BY AGE OF ONSET IN YEARS

Age of Onset in Years	Lower-class	Middle-class
4-8	3	4
9-13	<u>7</u>	<u>6</u>
	N=10	N=10

Inspection of Table 5 indicated that the majority of the adolescents, both lower- and middle-class, recollected that the first symptoms of diabetes appeared between the ages of nine and thirteen years.

Comparison of Diabetics and Nondiabetics
in the Perception of Their Body

The literature suggested that a chronic illness, such as diabetes, may significantly affect the adolescent's image of his body which is going through various changes at this period of time in his life. Thus, the first purpose of this study was to determine how the adolescent diabetic perceived his body when he was faced with a chronic illness.

In the sample under study, the adolescent diabetics and non-diabetics were asked to rate the concept

"ME" and the concept "MY BEST FRIEND" against a set of fifteen bipolar adjectival pairs. The means and standard deviations were computed for both groups from the total scores of the fifteen adjectives for each concept. (See Appendix K.) Table 6 shows the comparison of the diabetics and non-diabetics on their ratings of the concepts "ME" and "MY BEST FRIEND."

TABLE 6
COMPARISON OF DIABETICS AND NONDIABETICS
ON THEIR RATINGS OF THE CONCEPTS
"ME" AND "MY BEST FRIEND"

	N	Concept "ME"		Concept "MY BEST FRIEND"	
		\bar{X}	S.D.	\bar{X}	S.D.
Diabetics	20	72.75	9.49	72.9	11.05
Nondiabetics	20	77.80	9.72	78.1	10.36

The data reveal that the diabetics did not tend to rate the concepts "ME" and "MY BEST FRIEND" differently but there was a greater variability in the diabetics' rating of the concept "MY BEST FRIEND." Similarly, the diabetics and the nondiabetics, as a group, rated themselves no differently than they rated their best friend. There was an appreciable difference between the diabetics'

and the nondiabetics' ratings on the concept "ME." The diabetics, thus, perceived their body less favorably than the nondiabetics as revealed in their ratings of the concept "ME." The nondiabetics had a more positive body image as a whole than the diabetics. This supported the previous findings in the literature that a chronic illness may affect the adolescent's body image.

To further analyze the diabetics' body image as measured by the semantic differential, the means and standard deviations were computed for the four factors of the semantic differential utilized in the study. (See Appendix K.) The evaluative factor included scales which were evaluative in nature such as good/bad, complete/incomplete, and healthy/sick. This factor had been used by others to determine the value of the concept being rated. The potency factor included scales characteristic of power or "toughness" such as strong/weak and hard/soft. The activity factor included scales which were active in nature such as active/passive. The stability factor included scales which reflected varying or unvarying characteristics such as stable/changeable.⁷⁶

⁷⁶Osgood, Suci, and Tannenbaum, The Measurement of Meaning, pp. 62-63.

With respect to the four factors of the semantic differential utilized in the study, the diabetics did not rate the concepts "ME" and "MY BEST FRIEND" differently, as illustrated in Table 7. A similar trend is noted with respect to the nondiabetics in the sense that they did not rate the concept "ME" differently from "MY BEST FRIEND" to any appreciable degree.

TABLE 7
COMPARISON OF DIABETICS' AND NONDIABETICS' RATINGS OF FOUR
FACTORS IN RELATION TO BOTH CONCEPTS

	N	Concept "ME"			Concept "MY BEST FRIEND"		
		Factor	\bar{X}	S.D.	Factor	\bar{X}	S.D.
Diabetics	20	Evaluative	32.5	6.27	Evaluative	32.8	6.76
		Potency	21.0	3.12	Potency	20.3	4.63
		Activity	6.1	1.10	Activity	5.6	1.79
		Stability	13.3	3.26	Stability	13.1	3.78
Nondiabetics	20	Evaluative	34.8	4.16	Evaluative	35.7	5.00
		Potency	21.5	3.86	Potency	21.5	3.68
		Activity	6.3	1.56	Activity	6.4	1.53
		Stability	15.2	3.97	Stability	14.8	3.88

Further inspection of Table 7 revealed that the nondiabetics rated the concepts "ME" and "MY BEST FRIEND" higher on the evaluative and stability factors than the diabetics. This again supported the findings in the literature that suggested the adolescent may have a lower body image when confronted with a chronic illness and the transition from childhood to adulthood. It is noted that the nondiabetics rated the concept "MY BEST FRIEND" slightly higher than the concept "ME" on the evaluative factor.

The Diabetic's Perception of His Body
in Relation to the Age of Onset

The literature suggested that the adolescent's response to a chronic illness is determined by his age at the time of onset of diabetes but varied opinions exist as to the effect of the illness on the adolescent's personality. Therefore, the second purpose of this study was to determine if the age of onset of diabetes affected the adolescent's body image, and if so, in what significant way.

In the sample under study, the means and standard deviations on the ratings of both concepts were computed for the twenty diabetics according to age of onset, as shown in Table 8.

TABLE 8

COMPARISON OF TWENTY DIABETICS' RATINGS OF
TWO CONCEPTS IN RELATION TO
THE AGE OF ONSET

Age of Onset	N	Concept "ME"		Concept "MY BEST FRIEND"	
		\bar{X}	S.D.	\bar{X}	S.D.
4-8	7	71.6	10.72	71.8	15.32
9-13	13	73.4	9.15	73.5	8.68

The data summarized in Table 8 indicate that the diabetics with the age of onset of four to eight years did not rate the concepts "ME" and "MY BEST FRIEND" differently although there was a greater variability in their ratings of the concept "MY BEST FRIEND." The diabetics with the onset of nine to thirteen years also showed no difference in their ratings of the two concepts. It is noted that the ratings of diabetics with the early onset of disease reflected a less favorable body image, as measured by the semantic differential, while the scores of diabetics with the later onset showed a more favorable body image. However, this may have been the result of the small

number of diabetics in the four to eight age of onset group.

The evaluative, potency, activity, and stability factors were also studied to see if there were a difference in the ratings of the two concepts in relation to the age of onset. The data are illustrated in Table 9.

TABLE 9

COMPARISON OF TWENTY DIABETICS' RATINGS OF TWO CONCEPTS ON
FOUR FACTORS IN RELATION TO THE AGE OF ONSET

Age of Onset	N	Concept "ME"			Concept "MY BEST FRIEND"		
		Factor	\bar{X}	S.D.	Factor	\bar{X}	S.D.
4-8	7	Evaluative	33.1	7.15	Evaluative	32.6	7.39
		Potency	20.0	2.65	Potency	19.9	5.67
		Activity	6.1	1.21	Activity	5.0	2.24
		Stability	13.1	4.53	Stability	14.4	3.87
9-13	13	Evaluative	32.6	6.24	Evaluative	34.8	5.45
		Potency	21.5	3.33	Potency	20.5	4.22
		Activity	6.0	1.08	Activity	5.8	1.52
		Stability	13.3	2.56	Stability	12.4	3.69

Inspection of Table 9 revealed that the diabetics in the four to eight onset group evaluated the concept "ME" slightly higher than they did the concept "MY BEST FRIEND" on the evaluative and activity factors. They also were slightly higher on the evaluative factor than the nine to thirteen onset group was in terms of the self. The nine to thirteen onset group, however, rated themselves somewhat lower in the evaluative sphere than they rated the concept "MY BEST FRIEND." In contrast, the group of diabetics whose age of onset was nine to thirteen years rated themselves higher on the potency factor than did the four to eight onset group in rating themselves on the concept "ME." In all of the other items there were no appreciable differences. Due to the small number of subjects in the two socioeconomic classes when compared by age of onset, no further comparisons could be made with respect to age of onset.

Comparison of Body Image of Diabetics and
Nondiabetics According to
Socioeconomic Class

According to the literature the lower-class tend to have a low self-evaluation while the middle-class emphasize a high value and worth of the self and the body. Therefore, the third purpose for conducting this study was to

determine how adolescents of two socioeconomic classes differed in their body images when those who had diabetes mellitus were compared to those who did not have any signs of illness.

In the sample under study, the diabetics and nondiabetics of the two socioeconomic classes were compared with respect to their ratings of the concepts "ME" and "MY BEST FRIEND." The means and standard deviations for each group are presented in Table 10.

TABLE 10

COMPARISON OF LOWER-CLASS AND MIDDLE-CLASS DIABETICS AND
NONDIABETICS IN RELATION TO THE CONCEPTS "ME" AND
"MY BEST FRIEND"

		N	Concept "ME"		Concept "MY BEST FRIEND"	
			\bar{X}	S.D.	\bar{X}	S.D.
Lower Class	Diabetics	10	71.1	9.43	73.6	9.39
	Nondiabetics	10	84.8	6.45	83.5	9.79
Middle Class	Diabetics	10	74.4	9.00	72.2	11.96
	Nondiabetics	10	70.8	6.08	72.7	7.07

The data in Table 10 reveal that the lower-class diabetics perceived themselves somewhat less favorably than they viewed their best friend and the lower-class non-diabetics perceived themselves slightly higher than their best friend but with a greater variability for the concept "MY BEST FRIEND." The reverse is noted for the middle-class diabetics who rated the concept "ME" more favorably than the concept "MY BEST FRIEND," and further, the middle-class nondiabetics rated the concept "ME" lower than the concept "MY BEST FRIEND."

In comparing the diabetics' and nondiabetics' ratings according to class, the middle-class diabetics' scores showed that they viewed themselves more favorably than did the lower-class diabetics. However, when the nondiabetics were compared according to lower- and middle-class, the reverse was true. The lower-class nondiabetics viewed themselves higher than did the middle-class non-diabetics.

The evaluative, potency, activity, and stability factors were studied in the lower-class diabetics and non-diabetics for the two concepts. Table 11 compares the lower-class diabetics and nondiabetics on the four factors for the concepts "ME" and "MY BEST FRIEND."

TABLE 11

COMPARISON OF LOWER-CLASS DIABETICS AND NONDIABETICS WITH THE
FOUR FACTORS FOR THE CONCEPTS "ME" AND "MY BEST FRIEND"

	N	Concept "ME"			Concept "MY BEST FRIEND"		
		Factor	\bar{X}	S.D.	Factor	\bar{X}	S.D.
Lower Class Diabetics	10	Evaluative	31.2	7.05	Evaluative	33.6	7.48
		Potency	21.1	2.93	Potency	21.0	4.02
		Activity	6.2	.96	Activity	6.2	1.25
		Stability	12.2	3.25	Stability	12.8	3.54
Lower Class Nondiabetics	10	Evaluative	37.7	2.65	Evaluative	37.3	4.71
		Potency	24.1	2.66	Potency	23.4	2.80
		Activity	6.4	1.80	Activity	6.3	1.79
		Stability	16.6	4.10	Stability	16.5	3.53

The data summarized in Table 11 indicate that the lower-class diabetics rated themselves lower on the evaluative factor on the concept "ME" than on the concept "MY BEST FRIEND" suggesting that they viewed themselves somewhat less favorably than they viewed their best friend. The lower-class nondiabetics rated themselves essentially the same as they rated their best friend on all four factors.

When the diabetics and nondiabetics in the lower-class were compared, there was a sharp difference between the way the diabetics viewed themselves as contrasted to the nondiabetics and the concept of self. Thus, the diabetic viewed himself less favorably with respect to the concept "MY BEST FRIEND" and also in the way the non-diabetic viewed himself.

It is noted that the lower-class diabetics rated themselves and their best friend lower than the lower-class nondiabetics in the evaluative, potency, and stability factors. This suggested that the lower-class diabetics perceived themselves and their best friend as being less healthy, less good, less strong, and less stable.

As noted earlier in Table 7, the diabetics as a group made no appreciable differentiation in the concepts

"ME" and "MY BEST FRIEND." In examining the lower-class diabetics separately, however, they rated the evaluative factor higher on the concept "MY BEST FRIEND" than on the concept "ME" with no appreciable differences on any of the other factors. The lower-class nondiabetics again rated the concepts "ME" and "MY BEST FRIEND" higher than the diabetics on the evaluative, potency, and stability factors with no essential differences on their ratings of the four factors between the concepts "ME" and "MY BEST FRIEND."

The four factors were also studied in the middle-class diabetics and nondiabetics for the two concepts. Table 12 illustrates the comparison of the middle-class diabetics and nondiabetics with the four factors for the two concepts.

TABLE 12

COMPARISON OF MIDDLE-CLASS DIABETICS AND NONDIABETICS WITH THE
FOUR FACTORS FOR THE CONCEPTS "ME" AND "MY BEST FRIEND"

	N	Concept "ME"			Concept "MY BEST FRIEND"		
		Factor	\bar{X}	S.D.	Factor	\bar{X}	S.D.
Middle Class Diabetics	10	Evaluative	33.8	4.64	Evaluative	34.4	5.62
		Potency	20.4	3.07	Potency	19.5	4.84
		Activity	5.9	1.14	Activity	4.9	1.92
		Stability	14.3	2.72	Stability	13.4	3.80
Middle Class Nondiabetics	10	Evaluative	31.9	3.18	Evaluative	34.1	4.75
		Potency	18.8	2.82	Potency	19.6	3.44
		Activity	6.2	1.23	Activity	6.0	1.25
		Stability	13.9	3.25	Stability	13.0	3.33

Inspection of Table 12 showed that the middle-class diabetics rated themselves slightly higher than their best friend on the potency, activity, and stability factors. In comparing the middle-class diabetics with the non-diabetics, it was noted that the diabetics rated themselves higher on the evaluative, potency, and stability factors than the nondiabetics. Thus, they viewed themselves more positively as being good, healthy, complete, sociable, strong, and stable.

In comparing the findings of diabetics and non-diabetics according to socioeconomic class, the middle-class diabetics, who had been under the care of a private physician, in contrast to the lower-class diabetics, had a sharper increase in the scores on the concept "ME" as compared with the concept "MY BEST FRIEND." Thus, the middle-class diabetics perceived themselves higher. The reverse was noted for the middle-class nondiabetics who rated themselves considerably lower than their best friend and also rated themselves considerably lower on the concept "ME" than the diabetics. Thus, when the diabetics in the lower- and middle-classes were compared with each other, there was an appreciable difference between the ratings of the concept "ME" in the middle-class diabetics as contrasted with the diabetics in the lower-class.

It was noted earlier that in the middle-class nondiabetic group, all of the adolescents were in the lower-age group whereas in the middle-class diabetic group, the majority of the adolescents were in the higher-age group. In the lower-class nondiabetic group, the majority of the adolescents were in the higher-age group with the lower-class diabetics being equally distributed according to age. This then raised the question as to whether or not current age affected the adolescent's body image in a favorable or unfavorable direction.

In respect to the current age of the sample, the means and standard deviations were computed for the ratings of the concepts "ME" and "MY BEST FRIEND" in the two age intervals, as illustrated in Table 13.

TABLE 13

COMPARISON OF THE CONCEPTS "ME" AND "MY BEST FRIEND"
IN RELATION TO THE CURRENT AGE OF
FORTY ADOLESCENTS

Current Age	N	Concept "ME"		Concept "MY BEST FRIEND"	
		\bar{X}	S.D.	\bar{X}	S.D.
12-14	20	72.2	8.88	74.1	8.64
15-17	20	78.4	9.96	76.9	12.81

The data in Table 13 revealed that the younger-age group rated the concept "ME" lower than the concept "MY BEST FRIEND" while the older-age group rated the concept "ME" higher than the concept "MY BEST FRIEND." It is noted that the younger-age group rated both concepts somewhat lower than the older-age group suggesting that there was an appreciable difference between the way the younger-age group rated themselves compared to the older-age group. This finding strongly suggested that current age might have been a significant factor in the differences found in the adolescents' body image, as measured by the semantic differential.

The concepts "ME" and "MY BEST FRIEND" were also studied in respect to the age groups with comparison of the diabetics and nondiabetics. The data are illustrated in the following table.

TABLE 14

COMPARISON OF THE CONCEPTS "ME" AND "MY BEST FRIEND" WITH THE
CURRENT AGE OF DIABETICS AND NONDIABETICS

Current Age		N	Concept "ME"		Concept "MY BEST FRIEND"	
			\bar{X}	S.D.	\bar{X}	S.D.
12-14	Diabetics	8	70.5	9.80	73.6	10.17
	Nondiabetics	12	73.3	8.46	72.8	6.30
15-17	Diabetics	12	74.3	9.39	72.4	12.03
	Nondiabetics	8	83.6	7.65	83.6	11.59

Inspection of Table 14 indicated that the younger diabetics rated the concept "ME" lower than the younger nondiabetics but rated the concept "MY BEST FRIEND" higher than the younger nondiabetics. The older diabetics rated both concepts lower than the older nondiabetics. The younger diabetics rated the concept "ME" lower than the older diabetics but rated "MY BEST FRIEND" higher than the older diabetics. Thus, this suggested that the current age and the fact of diabetes combined to have a joint effect. The older nondiabetics rated both concepts much higher than the younger nondiabetics.

The two concepts were also studied according to the age groups with comparison of the two socioeconomic classes. Table 15 presents the data in respect to the lower- and middle-socioeconomic classes.

TABLE 15

COMPARISON OF THE CONCEPTS "ME" AND "MY BEST FRIEND" WITH THE
CURRENT AGE GROUPS IN THE LOWER- AND MIDDLE-SOCIO-
ECONOMIC CLASSES

Socioeconomic Class	Current Age	N	Concept "ME"		Concept "MY BEST FRIEND"	
			\bar{X}	S.D.	\bar{X}	S.D.
Lower-class	12-14	7	72.4	12.34	74.6	11.41
	15-17	13	80.9	9.13	80.7	10.72
Middle-class	12-14	13	72.0	7.06	73.9	7.28
	15-17	7	75.0	10.31	69.9	14.26

The data summarized in Table 15 indicate that the lower-class, younger-age group rated the concepts "ME" and "MY BEST FRIEND" much lower than the older-age group. A similar trend was noted in the middle-class group but the difference was not as prominent. It is noted that the lower-class, older-age group rated both concepts significantly higher than the middle-class, older-age group, but this might have been attributed to the unequal number in the older-age groups.

No comparisons of diabetic adolescents' response to the two concepts were made with respect to race due to the small number of Caucasian and Black adolescents in the sample. (See Table 2.) No attempt was made to further analyze possible differences in the perception of diabetics from families with a history of diabetes because of the unequal number in each socioeconomic class.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

It was evident from the literature that the psychological and social consequences of a chronic illness, such as diabetes mellitus, and the changes in body image in the adolescent serve as conflicting forces for the adolescent with diabetes. It, thus, appeared apparent that the age of onset in the adolescent diabetic could have an effect upon the adolescent's body perception since he is now concerned with his body and its image upon himself and others. This study was therefore concerned with the effects of diabetes upon the adolescent's body image in relation to the age of onset that diabetes occurred.

The purpose of this study included three aspects: 1) to determine how the adolescent diabetic perceived his body when he was faced with a chronic illness; 2) to determine if the age of onset of diabetes affected the adolescent's body image, and if so, in what significant way; and 3) to determine how adolescents of two socio-economic classes differed in their body images when those who had diabetes mellitus were compared to those who did not have any signs of illness.

A descriptive survey of ten lower-class female adolescent diabetics selected by the convenience method at an outpatient metabolic clinic and ten middle-class female adolescent diabetics selected randomly from the caseload of a private physician was utilized to study the effects of diabetes upon the adolescent's body image in relation to the age of onset. Two parallel groups consisting of ten lower-class and ten middle-class female adolescents without any signs of illness were utilized for a more accurate assessment of the adolescent diabetic's body image. The parallel groups were selected by the convenience method from the membership of a family life educational organization.

The semantic differential was used to determine how the adolescent diabetic perceived his body when given a specific concept and a set of bipolar adjectival scales. Both the diabetics and nondiabetics were given the identical concepts and scales.

An analysis of the data revealed that, in the groups under study, the diabetics had a lower body image, as measured by the semantic differential, than the nondiabetics. There was an appreciable difference between the diabetics' and nondiabetics' ratings on the concept "ME." With respect to the four factors (evaluative,

potency, activity, and stability) utilized in the analysis, the diabetics as a group did not rate themselves higher than the nondiabetics in any of the four factors under each concept.

The data were also analyzed in regard to the age of onset and socioeconomic class. The diabetics with an early age of onset of disease had a less favorable body image as compared to the diabetics with a later age of onset of disease, who showed a more favorable body image. In respect to the four factors, the diabetics with an early age of onset rated themselves slightly higher on the evaluative factor than the diabetics with a later age of onset. In contrast, the diabetics with a later age of onset rated themselves higher on the potency factor than the diabetics with an early age of onset.

According to socioeconomic class, the lower-class diabetics had a lower body image than the nondiabetics in the lower-class. The middle-class diabetics, however, perceived themselves higher than the middle-class non-diabetic group and also higher than the lower-class diabetic group. In regard to the four factors, the lower-class diabetics rated themselves lower than the lower-class nondiabetics in the evaluative, potency, and stability factors. The middle-class diabetics rated themselves and

their best friend higher than the middle-class nondiabetics in the evaluative and potency factors. In the comparison of the lower- and middle-class diabetics, there was an appreciable difference between the ratings of the concept "ME" in the middle-class diabetics as contrasted with the lower-class diabetics.

In respect to current age, the older diabetics rated both concepts lower than the older nondiabetics indicating a lower body image, as measured by the semantic differential. The younger diabetics viewed themselves lower than the nondiabetics but viewed their best friend higher than the nondiabetics. The lower-class, younger-age group rated both concepts lower than the older-age group in the same class. The middle-class for both age groups rated each concept similarly but the difference was less prominent as in the lower-class. The lower-class, older-age group viewed themselves and their best friend significantly higher than the middle-class, older-age group, but this might have been attributable to the unequal number of adolescents in the older-age groups.

The sample included an unequal representation of Caucasian and Black groups of adolescents in the study. Therefore, no definite comparison as to these findings was warranted.

The number of adolescent diabetics with other family members was unequally represented also. Thus, no definite comparison as to these findings was warranted.

Conclusions

Several conclusions could be made as a result of this study. 1) The results of the study indicated that the adolescent diabetics had a less favorable body image, as measured by the semantic differential, than the adolescent nondiabetics, which supported the findings of recent studies. 2) The adolescent diabetics with an early age of onset had a less favorable body image when compared to the adolescent diabetics with a later age of onset who were found to have a more positive body image, which is in accord with the findings of recent research studies. 3) In respect to socioeconomic class, the middle-class adolescent diabetics had a more positive body image, as measured by the semantic differential, than the lower-class adolescent diabetics. 4) The lower-class diabetics had a lower body image than the nondiabetics in the same class while the middle-class diabetics had a higher body image than the nondiabetics in the same class. 5) The adolescent diabetics with a current age between twelve and fourteen years were found to have a lower body image as compared to the diabetics with a current

age between fifteen and seventeen years.

Recommendations

Several recommendations for further research evolved from this study. 1) It is recommended that the study be replicated with a larger sample size and with all subjects being selected randomly. 2) It is suggested that the study include a larger Caucasian and Black sample to determine if there are differences in the adolescent diabetic's body image associated with race. 3) It is proposed that a study be designed to determine if the body image of male adolescent diabetics varies in any way from the body image of female adolescent diabetics. 4) It is suggested that a comparison be made of the body image of the adolescent diabetics who utilize health services with those who do not. 5) It is recommended that further refinement of the tool utilized to measure the adolescent's body image be made so as to improve the sensitivity of the tool.

APPENDIXES

fair : : X : . unfair

or

fair _ : _ : X : _ : _ : _ unfair

If you feel that fair or unfair does not in any way describe your meaning of SCHOOL, please place your mark as follows:

fair__ : __ : __ : __ X : __ : __ : __ unfair

REMEMBER: 1) Place your marks in the middle of spaces:

__ : __ : X : __ : X : __
This Not This

2) Be sure you mark each set of adjectives--do not omit any.

3) Never put more than one mark on a set of the adjectives.

This fair__ : __ : X : __ : __ : __ : __ unfair
Not This fair__ : X : __ : __ : X : __ : __ unfair

Sometimes you may feel as though you have had the same item before. This will not be the case, so do not look back and forth through the items. Do not try to remember how you marked similar items earlier.

You may now begin. Please do not turn the page until you have completed this page.

ME

- 1) good __:__:__:__:__:__bad
- 2) incomplete__:__:__:__:__:__complete
- 3) beautiful __:__:__:__:__:__ugly
- 4) sick __:__:__:__:__:__healthy
- 5) weak __:__:__:__:__:__strong
- 6) successful__:__:__:__:__:__unsuccessful
- 7) serious __:__:__:__:__:__humorous
- 8) soft __:__:__:__:__:__hard
- 9) free __:__:__:__:__:__constrained
- 10) passive __:__:__:__:__:__active
- 11) stable __:__:__:__:__:__changeable
- 12) unusual __:__:__:__:__:__usual
- 13) sociable __:__:__:__:__:__unsociable
- 14) mature __:__:__:__:__:__youthful
- 15) formed __:__:__:__:__:__formless

You may now turn to the next page but do not refer back to this page to see how you marked the adjectives. Thank you.

REMEMBER: Do not refer back to the other page.

MY BEST FRIEND

- 1) good __:__:__:__:__:__bad
- 2) incomplete __:__:__:__:__:__complete
- 3) beautiful __:__:__:__:__:__ugly
- 4) sick __:__:__:__:__:__healthy
- 5) weak __:__:__:__:__:__strong
- 6) successful __:__:__:__:__:__unsuccessful
- 7) serious __:__:__:__:__:__humorous
- 8) soft __:__:__:__:__:__hard
- 9) free __:__:__:__:__:__constrained
- 10) passive __:__:__:__:__:__active
- 11) stable __:__:__:__:__:__changeable
- 12) unusual __:__:__:__:__:__usual
- 13) sociable __:__:__:__:__:__unsociable
- 14) mature __:__:__:__:__:__youthful
- 15) formed __:__:__:__:__:__formless

You have completed the form. Thank you for your cooperation.

Age _____ Race _____
Occupation of head of household _____
Years of education of head of household _____

On the following pages, you will find some words and beneath them a set of adjectives, such as fair and unfair. Here is how you are to use these adjectives:

fair X: : : : : unfair
 or

fair : : : : :X unfair

fair ___ : X: ___ : ___ : ___ : ___ : ___ unfair
or

fair : : : :X : unfair

$\text{fair} _ : _ : X : _ : _ : _ : _ \text{unfair}$

or

fair : : : : X: : unfair

If you feel that fair or unfair does not in any way describe your meaning of SCHOOL, please place your mark as follows:

fair__ : __ : __ : __ X : __ : __ : __ unfair

REMEMBER: 1) Place your marks in the middle of spaces:

__ : __ : X : __ : X : __
This Not This

2) Be sure you mark each set of adjectives--do not omit any.

3) Never put more than one mark on a set of the adjectives.

This fair__ : __ : X : __ : __ : __ : __ unfair
Not This fair__ : X : __ : __ : X : __ : __ unfair

Sometimes you may feel as though you have had the same item before. This will not be the case, so do not look back and forth through the items. Do not try to remember how you marked similar items earlier.

You may now begin. Please do not turn the page until you have completed this page.

ME

- 1) good __:__:__:__:__:__bad
- 2) incomplete __:__:__:__:__:__complete
- 3) beautiful __:__:__:__:__:__ugly
- 4) sick __:__:__:__:__:__healthy
- 5) weak __:__:__:__:__:__strong
- 6) successful __:__:__:__:__:__unsuccessful
- 7) serious __:__:__:__:__:__humorous
- 8) soft __:__:__:__:__:__hard
- 9) free __:__:__:__:__:__constrained
- 10) passive __:__:__:__:__:__active
- 11) stable __:__:__:__:__:__changeable
- 12) unusual __:__:__:__:__:__usual
- 13) sociable __:__:__:__:__:__unsociable
- 14) mature __:__:__:__:__:__youthful
- 15) formed __:__:__:__:__:__formless

You may now turn to the next page but do not refer back to this page to see how you marked the adjectives. Thank you.

REMEMBER: Do not refer back to the other page.

MY BEST FRIEND

- 1) good __:__:__:__:__:__ bad
- 2) incomplete __:__:__:__:__:__ complete
- 3) beautiful __:__:__:__:__:__ ugly
- 4) sick __:__:__:__:__:__ healthy
- 5) weak __:__:__:__:__:__ strong
- 6) successful __:__:__:__:__:__ unsuccessful
- 7) serious __:__:__:__:__:__ humorous
- 8) soft __:__:__:__:__:__ hard
- 9) free __:__:__:__:__:__ constrained
- 10) passive __:__:__:__:__:__ active
- 11) stable __:__:__:__:__:__ changeable
- 12) unusual __:__:__:__:__:__ usual
- 13) sociable __:__:__:__:__:__ unsociable
- 14) mature __:__:__:__:__:__ youthful
- 15) formed __:__:__:__:__:__ formless

You have completed the form. Thank you for your cooperation.

APPENDIX C.

PATIENT'S BILL OF RIGHTS FOR RESEARCH STUDY

Each patient will be given an explanation of the purposes of the research study. The patients will be informed that the study is being conducted to gain a better understanding of their feelings of diabetes and how it has affected them and their daily life. An offer to answer any inquiries concerning the research procedures will be made. Each patient will be instructed that she may withdraw consent and to discontinue participation at any time during the research study. Written consent will be obtained from the parent(s) of the patients; the patients, however, will have the right to refuse consent.

Each patient will be expected to complete personal information data and a written form only (semantic differential form). There are no foreseeable risks to be encountered by the participants in the study. No physical activity or laboratory procedures will be conducted on the participants.

Each patient will be informed by written consent that confidentiality and security of all data will be assured. Personal information which will be needed by the patient will be limited only to that essential to the

research study. All obsolete or depleted data will be destroyed.

APPENDIX D.

PARENT CONSENT FORM FOR STUDY GROUPS

I, Carol Anne Gates, am a student in the Maternal-Child Health Nursing program in the Graduate School of Nursing at Texas Woman's University in Houston, Texas. I am currently conducting a research study on the effects of diabetes upon the adolescent diabetic's feelings of himself. I would appreciate your child's participation in this study. She will be informed that she may refuse to consent and may discontinue participation at any time. Your child will be expected to complete a written form only. No physical procedures or other activities will be conducted. All personal information obtained for this study will be kept confidential.

I, _____, do hereby give my permission for _____ to participate in a research study on the effects of diabetes upon the adolescent's feelings of himself. I understand that she may refuse to consent and discontinue participation at any time. I further understand that she will only be expected to complete a written form and that no physical procedures or activities will be conducted. I clearly understand

that all personal information obtained for this study will be kept confidential.

APPENDIX E.

PARENT CONSENT FORM FOR PARALLEL GROUPS

I, Carol Anne Gates, am a student in the Maternal-Child Health Nursing program in the Graduate School of Nursing at Texas Woman's University in Houston, Texas. I am currently conducting a research study on the effects of diabetes upon the adolescent diabetic's feelings of himself. In the study I am using the adolescent who does not have any signs of illness to better assess the adolescent diabetic. I would appreciate your child's participation in this study. She will be informed that she may refuse to consent and may discontinue participation at any time. Your child will be expected to complete a written form only. No physical procedures or other activities will be conducted. All personal information obtained for this study will be kept confidential.

I, _____, do hereby give my permission for _____ to participate in a research study on the effects of diabetes upon the adolescent's feelings of himself. I understand that she will be used to better assess the adolescent diabetic and

that she may refuse to consent and discontinue participation at any time. I further understand that she will only be expected to complete a written form and that no physical procedures or activities will be conducted. I clearly understand that all personal information obtained for this study will be kept confidential.

90

APPENDIX F.

Texas Children's Hospital

AGENCY PERMISSION FORM

Operated jointly with St. Luke's Episcopal Hospital
and Texas Heart Institute in the Texas Medical Center



CLINICAL RESEARCH CENTER
4-South
March 12, 1974

Ms. Carol Anne Gates
Texas Woman's University
College of Nursing Graduate Program
Houston, Texas

Dear Ms. Gates:

Permission has been granted by the Texas Children's Hospital Committee on Clinical Investigation and Publications to utilize the facilities of Texas Children's Hospital for the purpose of carrying out your proposal entitled "A Study of Body Image in Adolescent Diabetics in Relation to the Age of Onset".

We understand that any publication resulting from this research will include acknowledgement of Texas Children's Hospital.

Sincerely,

George W. Clayton, M.D.
Chairman

Committee on Clinical Investigation
and Publications

GWC/kkm

APPENDIX G.

PHYSICIAN'S CONSENT FORM

I, L. Leiphwa Hill, grant to Carol Anne Gates, a student enrolled in the Maternal-Child Health Nursing program leading to a Master's Degree at Texas Woman's University in Houston, Texas, my permission to utilize my private patients who are periodically seen at Texas Children's Hospital in Houston, Texas in order to study the effects of diabetes mellitus upon the adolescent's body image in relation to the age of onset that diabetes has occurred. I understand that each patient will have the right to refuse consent to participate and to discontinue participation in the study at any time. I further understand that each patient will only be expected to complete a written form and that no physical procedures or other activities will be conducted on the patients.

Date 3-13-74

Signature of Physician L. Leiphwa Hill

APPENDIX H.

PHYSICIAN'S CONSENT FORM

I, L. Leighton Hill, grant to Carol Anne Gates, a student enrolled in the Maternal-Child Health Nursing program leading to a Master's Degree at Texas Woman's University in Houston, Texas, my permission to utilize the patients of the Metabolic Outpatient Clinic at Texas Children's Hospital in Houston, Texas in order to study the effects of diabetes mellitus upon the adolescent's body image in relation to the age of onset that diabetes has occurred. I understand that each patient will have the right to refuse consent to participate and to discontinue participation in the study at any time. I further understand that each patient will only be expected to complete a written form and that no physical procedures or other activities will be conducted on the patients.

Date 3-13-74

Signature of Physician L. Leighton Hill

APPENDIX F.

AUTHORIZATION OF RESEARCH STUDY

I, Carol Anne Gates, am a student currently enrolled in the Maternal-Child Health Nursing Graduate program at Texas Woman's University in Houston, Texas. I am currently conducting a research study on the effects of diabetes upon the adolescent's body image in relation to the age of onset that diabetes has occurred. Permission to conduct this research study has been granted to me by the Maternal-Child Health Nursing Graduate program at Texas Woman's University and by Dr. L. Leighton Hill of Houston, Texas. I have been granted approval by Texas Woman's University and by Dr. L. Leighton Hill to visit the adolescents with diabetes and their parents in the home in order to conduct this research study.

Marlene L. McClure, Texas Woman's University

Signature of Faculty Advisor, Texas Woman's University

L. Leighton Hill, MD

Signature of Physician

APPENDIX J.

DEMOGRAPHIC CHARACTERISTICS OF FOUR STUDY GROUPS

I. Lower-Class Adolescent Diabetics

Adolescent	Age of Adolescent in Years	Race	Occupation of Head of Household	Years of Education of Head of Household	Age of Onset of Diabetes in Years	Other Family Members With Diabetes
#1	12	Caucasian	Construction Worker	12	8	No
2	13	Caucasian	Self-employed	12	11	No
3	13	Black	Vocational Nurse	14	9	Yes
4	14	Caucasian	Inspector	12	9	No
5	14	Black	Unemployed	10	6	No
6	15	Caucasian	Vocational Teacher	14	9	Yes
7	16	Caucasian	Assistant Manager of Restaurant	12	9	No
8	16	Black	City Sewer Operator	9	8	No
9	17	Caucasian	Meter Mechanic	11	11	No
10	17	Caucasian	Pipe Draftsman	13	10	Yes

APPENDIX J-Continued

II. Middle-Class Adolescent Diabetics

Adolescent	Age of Adolescent in Years	Race	Occupation of Head of Household	Years of Education of Head of Household	Age of Onset of Diabetes in Years	Other Family Members With Diabetes
#1	13	Caucasian	Manager of Insurance Company	18	5	Yes
2	13	Caucasian	Coach	16	9	No
3	14	Caucasian	Secretary	13	10	Yes
4	15	Caucasian	Engineer	16	6	No
5	15	Caucasian	Engineer	17	11	Yes
6	15	Caucasian	Bookkeeper	13	13	Yes
7	15	Caucasian	Engineer	16	4	Yes
8	16	Caucasian	Engineer	18	12	Yes
9	16	Caucasian	Systems Manager	17	5	Yes
10	17	Caucasian	Material Coordinator	16	12	No

APPENDIX J-Continued

III. Lower-Class Adolescent Nondiabetics

Adolescent	Age of Adolescent in Years	Race	Occupation of Head of Household	Years of Education of Head of Household
#1	13	Black	Mechanic	9
2	13	Black	Janitor	11
3	15	Black	Housewife	11
4	15	Black	Mechanic	8
5	15	Black	Vocational Teacher	14
6	15	Caucasian	Mechanic	10
7	16	Black	Mechanic	9
8	16	Caucasian	Vocational Teacher	14
9	16	Black	Owner of Janitorial Service	14
10	17	Caucasian	Construction Worker	12

APPENDIX J.-Continued

IV. Middle-Class Adolescent Nondiabetics

Adolescent	Age of Adolescent in Years	Race	Occupation of Head of Household	Years of Education of Head of Household
#1	13	Caucasian	Operations Manager of Firm	14
2	13	Caucasian	Office Manager	14
3	13	Caucasian	Geophysicist	16
4	14	Caucasian	Insurance Salesman	16
5	14	Caucasian	Contractor	16
6	14	Caucasian	Company Illustrator	15
7	14	Caucasian	Machinist	13
8	14	Caucasian	Public Accountant	16
9	14	Caucasian	Repair Foreman	13
10	14	Caucasian	Constructor	13

APPENDIX K.

MODEL FOR SCORING

Evaluative Factor

good	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	bad
incomplete	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	complete
beautiful	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	ugly
sick	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	healthy
successful	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	unsuccessful
sociable	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	unsociable

Potency Factor

weak	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	strong
serious	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	humorous
soft	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	hard
free	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	constrained
formed	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	formless

Activity Factor

passive	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	active
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Stability Factor

stable	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	changeable
unusual	<u>1</u> : <u>2</u> : <u>3</u> : <u>4</u> : <u>5</u> : <u>6</u> : <u>7</u>	usual
mature	<u>7</u> : <u>6</u> : <u>5</u> : <u>4</u> : <u>3</u> : <u>2</u> : <u>1</u>	youthful

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