SELF-CARE FACTORS IN DIABETES EDUCATION AS PERCEIVED BY DIABETIC PATIENTS

By

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BY DIABETIC PATIENTS

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CHAPTER I

INTRODUCTION

Diabetes educators have for sometime expressed great concern over the non-compliance of diabetics to their self-care regimens (Schlunegar, 1980; Wedman, 1981). This non-compliance was substantiated when Surwit and associates (1982) reported an average of 63 percent non-compliance by patients to various aspects of their self-care.

The educators' concern was justified and the non-compliance difficult to understand when Jackson (1982, p. 82) identified diabetes as ". . . being incurable, the third leading killer, the number one cause of blindness in the United States . . . it has decreased life expectancy and increased heart and kidney disease and strokes."

According to Glanz (1980, p. 791): "The increase in prevalence of diabetes by more than 50 percent between 1965 and 1973 highlights the seriousness of management problems."

The concern of the educators has led to the development of diagnostic skills, design of management regimens and recognition of the need for updated patient education. The education, however, has focused on the cognitive and psychomotor learning domains, with the dispensation of current information and development of skills; while, the affective domain, the psychosocial characteristics have not been included. Since the affective domain, as identified by Bloom and associates (1956),

determines the degree of compliance; Podolsky (1980), pointed out that more concentrated effort should be applied to this area and to the psychosocial characteristics of each patient.

Statement of Problem

The non-compliance of diabetic patients has led to a need to investigate their perception of diabetes education in relation to learning domains. There has been no research in this area in relation to patients' age and sex.

Purpose

The purpose of this study was to identify the diabetic patients' perceptions of diabetes education received in relation to the learning domains.

The questions this study answered were:

1. What are the patients' perceptions of the self-care factors?
2. What are the domains' levels of importance?
3. What are the patients' perceptions of their degrees of compliance?
4. Do differences exist between perceptions by age and sex?

Assumptions

Some of the assumptions made for this study were:

1. All diabetics' psychosocial adjustment has been ignored.
2. Psychosocial adjustment affects compliance to self-care regimens by diabetics.
3. Participants will answer the questionnaire truthfully.

Scope and Limitations

The limitation of this study was:

Only diabetics admitted to Tulsa area hospitals were included in the survey since no comprehensive patient list was available for the Tulsa area.

The scope of this study was:

Questionnaires were distributed in three of the six Tulsa area hospitals.

Definitions of Terms

Major terms as used in this study:

Affective Domain - The area dealing with changes in interests, attitudes and values; the development of adequate behaviors and adjustments.

Cognitive Domain - The area dealing with acquiring knowledge and developing intellectual skills.

Diabetes Education - The training and developing of the mind and character concerning the disease, diabetes; occuring both in a group setting and on an individual basis.

Diabetes Educator - A person who works to teach others the disease characteristics, treatment and coping mechanisms of diabetes; may come from a variety of educational backgrounds: physician, nurse, dietitian, social worker or psychological counselor.

Learning domains - Refers to the three domains of educational objectives: cognitive, psychomotor and affective; identified by Bloom and associates (1956).

Non-Compliance - Failure or refusal to comply, agree, accept or yield; unwillingness to act in accordance.

Psychological Adjustment - To mentally come to conformity with one's surroundings.

Psychosocial Characteristics - Qualities that pertain to the psychological development of the individual in relation to his social environment.

Self-Care Regimens - To give close attention to one's own interest or welfare in the regulation of a system of diet, exercise, etc.; for therapy or the maintenance or improvement of health.

Organization of the Study

In the introductory chapter, Chapter I, the study was described, the purpose and problem stated and the questions to be answered by the study were presented. Also, identified in Chapter I were the assumptions and limitations of the study and the definitions of terms utilized in the study. Chapter II contains a review of literature including definitions and the history of diabetes. Chapter III contains the methodology of the study including an interview of educators, selection of subjects, data gathering instrument, and collection and analysis of data. Chapter IV includes a presentation of the findings, while Chapter V includes the summary, conclusions and recommendations for practice and further research.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this study was to identify the diabetic patients' perceptions of diabetes education in relation to the learning domains. This chapter presents a review of selected publications related to the problem outlined in Chapter I. First, the chapter will present definitions and a brief history of Diabetes Mellitus. Second, will be presented a review of teaching methods and educational philosophies, as they relate to learning domains, found in selected current publications.

Definition of Diabetes Mellitus and History of Treatment

This section will provide selected definitions of Diabetes Mellitus. A brief history of the treatment of Diabetes will also be presented.

Diabetes Mellitus, termed by the Greeks and meaning "to pass through, "honeysweet" (Galloway, 1980, p. 1), was defined in a passage by Aretaeus The Cappadocian, A.D. 81-138, cited in Galloway (1980):

> Diabetes is a wonder affection, not very frequent among men, being a melting down of the flesh and limbs into urine. Its cause is of a cold and humid nature, as in dropsy. The course is the common one, namely, the kidneys and bladder; for the patients never stop making water, but the flow is incessant, as if from opening the aqueducts. The nature of the disease, then, is chronic,

> and it takes a long period to form; but the patient is short-lived, if the constitution of the disease be completely established; for the melting is rapid, the death speedy, moreover, life is disgusting and painful; thirst unquenchable; excessive drinking, which, however, is disproportionate to the large quantity of urine, for more urine is passed; and one cannot stop them either from drinking or making water. Or if for a time they abstain from drinking, their mouths become parched and their bodies dry; the viscera seem as if scorched up; they are affected with nausea, restlessness, and a burning thurst; and at no distant term they expire (p. 1).

More current definitions by Felig and Sherwin (1980), and Galloway (1980) presented Diabetes as a chronic systemic disease characterized by derangement of protein, fat and carbohydrate metabolism and by disorders in the metabolism of insulin with eventual complications affecting the structure and function of blood vessels and the nervous system. These definitions provided an adequate understanding of the grave outlook presented to those unfortunate enough to be diagnosed with diabetes.

Control of diabetes was from the beginning attempted with various dietary compositions. Ensinck (1979) identified the first recorded, some 2400 years ago, as a high carbohydrate diet consisting mainly of easily accessible grains and cereals. In the 1700's the high carbohydrate diet was cast aside, according to Wood (1972), in favor of a diet high in protein and animal fat and low in carbohydrate and glucose.

Ensinck (1979) pointed out that early in this century, shortly after the advent of insulin in 1921, Sansum (1926), Richardson (1929), Ellis (1934) and Rabinowitch (1935) presented documented studies advocating a revision to a high carbohydrate, low fat, low caloric diet. This, however, was ignored until the revision was reaffirmed by Singlh (1955), Kempner (1958), Ernest (1965) and Anderson (1968).

At this time a high carbohydrate, low fat and maintained low glucose diet was advocated. This delay in advocating a more liberal carbohydrate consumption was attributed by Ensinck (1979) to the preinsulin era. West and Kalbfleisch (1971) pointed out that carbohydrates were of concern prior to insulin and metabolism insufficient with resultant hyperglycemia. The preinsulin ketoacidosis was later proven to be due to poor protein and fat metabolism which remained detrimental with insulin therapy.

The advent of insulin, even with the dietary contradictions, brought about hope for survival beyond a few months and according to Lasagna (1978, p. 78), "began the modern era of diabetic therapy." The modern era, the last sixty years has, according to Lasagna, extended the life expectancy of tens of millions of diabetics to nearly normal. Information compiled by Rifkin (1981, p. 343) confirms the increased life expectancy as shown in Table I.

Lasagna (1978) pointed out that these decades have brought about worldwide research into the pathophysiology of the disease and the development of new treatments. In the 1930's we saw the development of new long-acting insulin; the 1950's, oral medication; the 1960's, kidney dialysis; and the 1970's, transplants of insulin-producing cells and insulin pumps. Along with these technical advances there has also been a recognized need for advances in the self-care of diabetic individuals. This recognized need has brought about the design of new treatment approaches.

TABLE I

AVERAGE LIFE EXPECTANCY OF DIABETICS BY SEX
IN THE UNITED STATES

Age	1976		2050	
(In Years)	Male	Female	Male	Female
0	66.6	73.7	68.2	75.5
10	58.4	65.2	59.8	67.0
20	48.9	55.8	50.3	57.5
30	40.1	46.5	41.4	48.1
40	32.0	37.8	33.2	39.1
50	24.2	29.2	25.3	30.3
60	16.9	21.6	17.8	22.6
70	10.9	15.4	11.5	16.1

Teaching Methods and Educational Philosophies of Health Care Professionals

This section presents teaching methods and educational philosophies on non-compliance by diabetes health care professionals. These methods and philosophies were taken from selected current medical and educational publications. Many of the diabetes health care professionals recognized the importance of Bloom and associates three domains of educational objectives; the cognitive, psychomotor and affective domains, as presented by Knowles (1973).

In setting teaching objectives, Sulway (1980, p. 108) showed recognition of Bloom's domains when he identified these three areas, "the educational process, the patients' attitudes and behavior, and the professionals' attitudes and skills level." With these criteria in mind, Sulway (1980, p. 110), developed a program format, "with a team approach, in non-threatening surroundings, utilizing the group process, learning by experience, and evaluation by the team and by the patient."

A more complete program guideline, utilizing the three domains, was presented by Podolsky (1980). Podolsky (1980, p. 73) identified diabetes program goals for diet therapy on a behavioral scale as, "(1) attaining desirable weight, (2) preventing hyperglycemia, (3) reducing risks of atherosclerosis, and (4) modifying diet to prevent diabetes related complications." While these goals fall into the cognitive and psychomotor domains, to assure compliance and attain these goals, Podolsky (1980, p. 77) pointed out, "(1) dietary regimens

must be devised and continuously modified to fit the patients' propensities, and (2) physicians must provide psychological reinforcement," bringing into light the affective domain. Mashock (1980) also identified the three areas essential for the educator to cover as the cognitive, psychomotor and affective domains. Mashock stated, "the affective area is, by far, one of the most difficult to address because it involves a change in the learner's attitude or feeling about a condition" (p. 37).

While many professionals realize the importance of Bloom's three domains of learning, some take only the cognitive and psychomotor areas into consideration i.e., those works presented by West (1973), Jones (1977), Drake (1980), and Dries (1980). In the design of such teaching plans, there was emphasized the amount of knowledge acquired and the skills developed by the patients. There was no concern exhibited for the emotional or social status of the patients.

Two sources of review, written by professionals with diabetes dealt with only the affective domain. The first, by Hoover (1980), began with an objection to the term compliance. Compliance by definition, as stated by Hoover (1980, p. 9), "yielding to a demand or request; acquiescence." It was stressed that if the patient wasn't acquiescent before diagnosis of diabetes that it is doubtful he would develop the characteristic along with the disease.

Reasons for lack of acceptance or non-compliance with self-care regimens were identified by Hoover as: personal priorities such as not appearing different, benefits including comfort and attention with hospitalization, economical factors including lack of money

to purchase supplies and food, and check-ups since many are uninsurable, lack of dietary choice of institutionalized, transportation for necessary food and supplies, and lack of hope, motivation and acceptance.

It was suggested, by Hoover (1980), that we allow the patient to make his own decisions when she stated:

> If you have described diabetes to the best of your ability and if you have explained in a manner that your patient fully understands what compliance to your instructions will and will not mean to his personal health, you have fulfilled your obligation to him. If he chooses to comply he will surely need your help, support and continued reinforcement. If he does not choose to accept what you propose, that is his right. Don't increase his burden by adding a load of non-compliant guilt to his decision (p. 12).

The second professional with diabetes, Jackson (1981), identified: fear, social stigma, legal consequences and burdensome routines as the most common negative feelings of diabetes. Fear, being the most frequent of the feelings, included not only those associated with the disease and the complications, but also as inept or unkind nursing care. Nurses often make diabetics feel abnormal or incompetent. They were accused of treating patients grudgingly or of becoming exasperated if preventable complications develop or if a patient seems uncooperative. Three methods, suggested by Jackson, of assisting patients in adjusting to their negative feelings are: to be a good listener, maintain a positive attitude and find community support.

The concepts presented by Hoover (1980) and Jackson (1981) stressed the importance of inclusion of the affective domain by health care professionals, and contributed the frequent deletion to the difficulty of assessing feelings. Glanz (1980, p. 794) supported

this concept by stating, "Research directed toward determining factors responsible for poor compliance tended to focus upon easily measured characteristics." According to Glanz (1980, p. 794), " . . . patient attitudes and motivations, social and family influences, and modifiable aspects of the regimen are productive dimensions for present intervention and future exploration."

The deletion of the affective domain was again stressed when Anderson (1982, p. 33) stated, "most programs only transmit knowledge and skills with little attention given to assessing and influencing attitudes." Disagreeing with that program guideline, Anderson (1982, p. 33) designed a program with an 'overall objective' of, "providing diabetics and their families the opportunity to develop the knowledge, skills and attitudes necessary for optimal self-care." The program was described as a 'participant-centered' program which emphasizes how people learn rather than what they learn. It includes a five-level scale used to assess patients' attitudes in terms of how they perceive they are responsible for their life experiences (Figure 1).

Anderson's patient-perception theory and the negative feelings identified by Jackson (1981) were verified by Guthrie (1982) in a description of the occurance of psychological crippling following the diagnosis of diabetes. The crippling, as pointed out by Guthrie, is due to denial, guilt, depression, bitterness, anger, fear of imagined or actual loss, loss of self-esteem, and fear of loss of

Levels of Personal Responsibility	
Level 1: Having diabetes is a disaster.	No responsibility, hopelessness, helplessness, powerlessness, and despair. "It's no use trying."
Level 2: Having diabetes is a burden.	Little responsibility. Anger, complaining, denial, blaming, and depersonalizing. "If it weren't for diabetes, I'd by OK."
Level 3: Having diabetes is a problem.	Partial responsibility. "I know it's up to me, but circumstances are holding me back."
Level 4: Having diabetes is a challenge.	Full verbal responsibility. "I know it's up to me, I'm going to do it."
Level 5: Having diabetes is an opportunity.	Total responsibility. "I'm doing it."

Source: R.M. Anderson, "Diabetes Patient Education: From Philosophy to Delivery," Diabetes Educator (1982).

Figure 1. Scale to Assess Responsibility for Life Experiences

interpersonal relationships.

Coping skills were suggested as a means for resolution and according to Guthrie (1982) included:

> 1) counseling to minimize but respect the seriousness of the disease, 2) education to help learn about treatment and complications, 3) guidance for support, 4) encouragement for independence, 5) information to clearly educate on limitations, 6) relaxation measures, 7) assistance in appropriate recognition and release of emotions, 8) prevention of a negative outlook, 9) support to improve self image, and 10) assistance in building psychological strength by preventing diabetes from becoming and excuse (p. 26).

Before an attempt can be made to assist patients witn coping, Davis (1981, p. 275) stated, "a comprehensive assessment of patient needs to provide data regarding the patient's current knowledge base, limitations, and readiness to learn" must be conducted. Upon conducting such a study, Davis identified three factors of importance as being: demographic, diabetes knowledge and psychosocial, with demogrpahic rating lowest in importance. Through the analysis of data from the study, Davis completed a list of educationally important patient characteristics within each factor (Figure 2).

Summary

The health care professionals cited in this chapter provided evidence of the need to evaluate the diabetes education recieved by patients in relation to learning domains. The importance placed on attitudes and behavior stressed the need to place more emphasis on the affective domain.

Factor	Characteristics of which the health provider should be aware:
Demographic	Patient's learning disabilities Dietary restrictions due to ethnic background Frequency and content of meals Patient's living situation (alone, with family, friend, etc.)
Diabetes knowledge	Patient's understanding of diabetes (e.g., pathophysiology, etiology) Patient's understanding of the relationship between diabetes and blood sugar regulation, urine testing, insulin, diet, exercise, health habits, and potential complications
Psychosocial	Health beliefs (e.g., patient perceptions about severity of diabetes, efficacy of diabetic regimen) Attitudes toward health providers Attitudes toward compliance Locus of control Readiness to learn about diabetes (e.g., interest in diabetes education) Stress and coping Adjustment to illness Social support

Source: W.K. Davis, "Factors Affecting the Educational Diagnosis of Diabetic Patients," Diabetes Care (1981).

Figure 2. Summary of Educationally Important Patient Characteristics

The importance of the affective domain and psychosocial characteristics was presented well by health care professionals such as Sulway, Podolsky, Glanz, Anderson, Guthrie and Davis. Other professionals, including Drake, Jones, Dries and West, have continued to emphasize only the knowledge and skills development, the cognitive and psychomotor domains.

Another group of professionals, those who themselves have diabetes, such as Hoover and Jackson, have provided a special insight into the needs of the individual with diabetes. They have, above all else, stressed the need to view the patient as an individual. They pointed out the importance of helping the patient adjust his life and emotions so that he might have the ability to learn to care for a lifetime disease that may present crippling complications.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify the diabetic patients' perceptions of diabetes education received in relation to the learning domains. To achieve this purpose five steps were followed as described in this chapter: (1) telephone interviews of educators were conducted, (2) the population was selected, (3) the data gathering instrument was devised, (4) the method of collecting data was identified, and (5) the statistical methods of analysis were presented.

Telephone Interview

Telephone interviews were conducted during the month of January, 1983, with the diabetes educators from the six Tulsa area hospitals. See Appendix A for a copy of the Telephone Interview Format. The interviews were conducted to (1) identify the educators' perceptions of their degree of assistance to patients in their psychosocial adjustment to diabetes, (2) to identify the areas of concentration of their program formats by learning domains, and (3) to determine the educators' interests in the study and willingness to assist in gathering the research data.

Selection of Sample

The sample utilized in this study was an accidental sample

(Key, 1982) and was selected based on availability. Since there was no comprehensive patient list of diabetics residing in the Tulsa area, the sample was comprised of adult diabetics (23 years of age and older), seen in three Tulsa area hospitals between January 24, 1983 and February 18, 1983. The three hospitals were selected from the six Tulsa area hospitals based on willingness of the educators.

Data Gathering Instrument

A questionnaire, consisting of four sections, was designed to: (1) gather demographic information for comparison of data, (2) determine the patients' perceptions of the self-care factors covered by educators in relation to diabetes, (3) identify the degree of importance placed on various aspects of diabetes self-care factors by patients, and (4) determine the degree of compliance of patients to their self-care regimens. The second, third and fourth parts of the questionnaire were designed to contain self-care factors from each of the three learning domains. The factors were randomly placed in each section and varied between sections. See Appendix B for a copy of the final version of the questionnaire.

The questionnaire was reviewed and discussed by the Tulsa Diabetes Educators at the January monthly meeting. It was critiqued for relevance of the questions to measure desired information and ease of understanding each question in each of the four sections. The suggestions were then analyzed and the questionnaire re-designed. The questionnaire was reviewed a second time by the three hospital educators assisting with the data gathering to make certain the information was clear and understandable.

The questionnaire was then field tested by five diabetics that were available through the American Diabetes Association. No need for a change in format was identified.

A cover letter to the questionnaire was written to explain the purpose and importance of the questionnaire. The cover letter also guaranteed anonymity and expressed appreciation for participation in the study. See Appendix C for a copy of the cover letter.

The questionnaires, cover letters and envelopes were then distributed to the three Tulsa area hospital diabetes educators. The educators were responsible for distributing the questionnaires to patients 23 years of age and older who were admitted to their institutions between January 24, 1983 and February 18, 1983.

Collection of Data

The educators were responsible for the collection of the questionnaires they distributed. The questionnaires were to be placed in the attached envelopes and sealed by the survey participants prior to collection. The questionnaires were then collected from each educator by February 21, 1983. The return rate was determined by the total number given each educator versus those returned.

Analysis of Data

Section 1 of the questionnaire, containing demographic information, utilized frequency counts and percentages for analysis by patient characteristics. Section 2 of the questionnaire was analyzed by mean values for each domain and for the overall data by age and sex. Section 3 was analyzed by mean value and by rank order. While in

Section 4, frequencies, mean values, rank order and percentage ratings were utilized for analysis of compliance.

CHAPTER IV

PRESENTATION OF FINDINGS

The content of this chapter is divided into six sections. The sections are presented in the following order: (1) results of telephone interviews, (2) response rates, (3) demographics of respondents, (4) perceived interest of professionals, (5) ranked importance of self-care factors, and (6) levels of compliance.

Results of Telephone Interviews

The telephone interviews conducted during January, 1983, with a diabetes educator from each of the six Tulsa area hospitals, revealed five of the six hospitals offering formal education programs. The programs provide education to their patients in the areas of concentration shown in Table II. The areas of concentration were separated into learning domains to show the educational emphasis.

The psychomotor domain contained three areas: diet therapy, medication routines and home monitoring, that all educators include in their program format. The cognitive domain contained two areas: learning objectives and complications that are included by all educators. There was no area within the affective domain included by all educators. There were, however, two areas within the affective domain: learning style and body image covered by only one educator and another area, psychological adjustment, included by two educators.

TABLE II

AREAS OF CONCENTRATION BY LEARNING DOMAINS
FOR TULSA AREA HOSPTIALS" DIABETES
EDUCATION PROGRAMS

LEARNING DOMAINS	Areas of Concentration	HOSPITALS One	Two	Three	Four	Five	Six
COGNITIVE	Formal Educ. Format	X	X		X	X	X
	History-Prev. Ed.	X		X		X	X
	What is Diabetes	X	X	X	X		X
	Learning Object.	X	X	X	X	X	X
	Special Problems	X	X				
	Complications	X	X	X	X	X	X
PSYCHOMOTOR	Diet Therapy	X	X	X	X	X	X
	Exercise	X	X		X		
	Medication	X	X	X	X	X	X
	Urine and Blood-Home monitoring	X	X	X	X	X	X
	Foot Care	X	X		X		
AFFECTIVE	Learning Style					X	
	Support Systems			X	X		X
	Psychological Adjust. (stress, coping, Acceptance		X			X	
	Body Image					X	
	Discharge Planning	X		X		X	X

Although not all programs provide depth in the affective domain, all educators expressed concern for their patients emotional and social adjustment and recognized the need for counseling. Various ideas were presented as to the health care discipline which should accept responsibility for the counseling to assist with these adjustments. The disciplines suggested were physicians, social workers, primary care nurses, diabetes educators, family counselors and support group leaders.

Four of the six educators felt they were not allowed adequate time during hospitalization to deal with more than immediate skills training. The remaining two educators felt that by initially dealing with the psychosocial adjustment of their patients, time was saved and learning objectives achieved more quickly.

Response Rates

The Diabetes Education Questionnaires were given to 39 patients between January 24, 1983 and February 18, 1983. Of the 39 questionnaires distributed at the three hospitals, 36 were returned. Only two of the returned questionnaires were not used due to completion of only the demographic information. This yielded an 87 percent response rate and was considered sufficient for this study.

Demographics of Respondents

The patients who participated in this study comprised a heterogenous group of diabetics. Variations existed in employment status, marital status, living arrangement and education level. However, for the purpose of this study only age and sex were considered. The

frequencies and percentages of each variable are shown in Table III.

The patients were divided into three age groups in an attempt to separate: (1) 23 - 34 years, the single and young married, (2) 35 - 64 years, the middle-aged, and (3) 65+ years, the retired. Of the respondents, 15 percent were between 23 and 34 years of age, 56 percent between 35 and 64 years of age and 29 percent were 65 years and older.

Of the 34 respondents who participated in the study, 38 percent were males and 62 percent females. The 23-34 age group contained two males and three females, the 35 - 64 age group contained eight males and 11 females, while, the 65+ age group contained three males and seven females.

The remaining demographic information's high percentages were: (1) employment status with 32 percent retired and 41 percent employed, (2) marital status with 61 percent married, (3) living arrangement with 68 percent living with families, and (4) educational level with 44 percent completing 10 - 12 years and 44 percent completing 13+ years.

Additional demographic information pertaining to diabetic status of the patient was obtained but was not utilized in this study. The frequencies and percentages are displayed in Table IV.

The age the participants were diagnosed varied widely with 29 percent diagnosed between 41 and 50 years of age and six percent diagnosed between 31 and 40 years of age. 94 percent stated they saw their doctor annually. 38 percent stated they checked both their urine and blood sugar, while only nine percent denied either method of glucose testing.

TABLE III

FREQUENCIES AND PERCENTAGES OF DEMOGRAPHIC INFORMATION BY PATIENT CHARACTERISTICS

Characteristics	Frequencies	Percentages
Age		
23-34 years	5	15
35-64 years	19	56
65+ year	10	29
Sex		
Male	13	38
Female	21	62
Employment Status		
Employed	14	41
Unemployed	2	6
Houseperson	6	18
Retired	11	32
Disabled	1	3
Marital Status		
Married	21	61
Divorced	6	18
Single	5	15
Widowed	2	6
Living Arrangement		
Alone	9	26
With friends	2	6
With family	23	68
Educational Level		
Grades (years) completed		
1 - 6	0	0
7 - 9	4	12
10-12	15	44
13+	15	44

TABLE IV

FREQUENCIES AND PERCENTAGES OF
DIABETES INFORMATION

Characteristics	Frequencies	Percentages
Age diagnosed with diabetes		
20	4	12
21-30	7	20
31-40	2	6
41-50	10	29
51-60	6	18
61+	5	15
See Doctor Annually		
Yes	32	94
No	2	6
Glucose Testing		
Blood	7	21
Urine	11	32
Both	13	38
Neither	3	9
Discussed diabetes (multiple answers encouraged)		
Doctor	32	94
Nurse	27	79
Diabetes Educator	23	68
Dietitian	25	74
Social Worker	2	6
Friend	15	44
Other Diabetics	18	53
Support Group	1	3
Counselor	1	3
Amer. Diab. Assoc.	4	12
Spouse	15	44
Family	21	62

In the final area dealing with discussion concerning diabetes, multiple answers were encouraged. 94 percent of the respondents discussed diabetes with their doctor, 79 percent with a nurse and only three percent with a support group or a counselor.

Perceived Interest of Professionals

In section 2 of the questionnaire, the participants were instructed to rate their perception of the degree of interest of professionals to self-care factors. A scale from 1 - 5 was provided with 1 correlating to never, 2 correlating to seldom, 3 to sometimes, 4 to usually and 5 to always. The self-care factors were divided into the three learning domains and are presented in Tables V, VI, and VII by mean values. The mean values for responses were figured by adding the total numbers by age and sex for each factor as determined by the scale, and dividing by the number of participants in each age and sex. The total means for factors by sex were obtained by multiplying each sex within each age group by the number of participants in that group and dividing by the total number of participants of that sex.

The range of the means in the cognitive domain was 1.5 to 4.7 with the lowest mean presented in the factor, concepts prior to diagnosis and with the highest mean presented in the factor, understanding complications. The average means by sex ranged from 2.5 to 3.2 and from 2.8 to 3.2 by age. These data are presented in Table V.

The range of the means in the psychomotor domain was 2.0 to 4.3 with the highest and lowest mean and the largest gap, 2.3, displayed in the factor, skin and foot care routines. The highest mean

was also displayed in the four factors: testing routines, weight management, medication routines, and meal planning. The average mean by sex ranged from a low of 3.1 to a high of 3.8 and from a range of 3.5 to 3.7 by age. The mean values for responses to interest of professionals to self-care factors as perceived by diabetics by age and sex are presented in Table VI.

The range of the means in the affective domain was from 1.0 to 4.7 with the lowest mean and the largest gap, 3.3, displayed in three factors: feelings about diabetes, participation in group support and family responses. The highest mean was displayed in the factor, diabetes influence on lifestyle. The average mean by sex ranged from a low of 2.1 to a high of 3.4 and from 2.3 to 2.8 by age. The mean values for responses to interest by professionals to self-care factors in the affective domain as perceived by diabetics by age and sex are presented in Table VII.

Following the analysis of Section 2, provided in Tables V, VI, and VII, is the overall mean values for responses to interest of professional to self-care factors by learning domains in Table VIII. The total means for each self-care factor were figured by multiplying the mean of each age and sex by the number of participants in that group. The numbers were then added to obtain one overall number and divided by the total number of participants. The average mean for sex was figured by adding the means and dividing by the number of factors in the domain.

TABLE V

MEAN VALUES FOR RESPONSES TO INTEREST OF PROFESSIONALS TO SELF-CARE FACTORS IN THE COGNITIVE DOMAIN AS PERCEIVED BY DIABETICS BY AGE AND SEX

Factors	Age 23-34 M N=2	Age 23-34 F N=3	Age 35-64 M N=8	Age 35-64 F N=11	Age 65+ M N=3	Age 65+ F N=5	Total Means For Factors by Sex M N=13	Total Means For Factors by Sex F N=19
12 Understanding Diabetes	3.5	4.7	2.5	3.4	3.3	3.0	2.8	3.5
16 Understanding Complications	2.5	3.7	4.0	3.9	4.3	3.4	3.8	3.7
24 Diabetes Concept Prior to Diagnosis	1.5	2.3	2.0	2.5	1.7	2.8	1.9	2.6
25 Understanding of current diabetes treatments	3.5	4.0	3.0	2.9	1.7	3.5	2.8	3.2
26 Self-care during illness, traveling and holidays	2.0	4.0	3.9	2.8	2.0	4.3	3.2	3.4
29 Diabetes Information	2.5	4.0	3.5	3.6	3.0	3.3	3.2	3.6
30 Recipes for meal planning	2.0	3.3	3.6	2.5	3.0	3.3	3.2	2.8
Average mean by sex	2.5	3.1	3.2	3.2	2.7	3.1		
Average mean by age	2.8		3.2		2.9			

TABLE VI

MEAN VALUES FOR RESPONSES TO INTEREST OF PROFESSIONALS TO SELF-CARE FACTORS IN THE PSYCHOMOTOR DOMAIN AS PERCEIVED BY DIABETICS BY AGE AND SEX

Factors	Age 23-34		Age 35-64		Age 65+		Total Means For Factors	
	M N=2	F N=3	M N=8	F N=11	M N=3	F N=5	M N=13	F N=19
13 Testing routines	3.0	4.3	3.9	2.9	3.3	3.2	3.6	3.2
15 Exercise routines	2.5	4.0	3.6	3.2	3.0	3.4	3.3	3.4
17 Medication routines	3.5	4.3	4.3	4.0	4.0	3.4	4.1	3.9
19 Weight management	3.0	4.0	3.3	3.9	4.3	3.8	3.5	3.9
20 Treatment for insulin reactions	4.0	3.7	3.5	3.5	3.0	2.5	3.5	3.3
22 Meal planning	4.0	3.7	3.9	3.6	2.3	4.3	3.6	3.8
28 Skin and foot care routines	2.0	4.0	3.9	3.1	3.3	4.3	3.5	3.6
Average mean by sex	3.1	4.0	3.8	3.5	3.3	3.6		
Average mean by age	3.6		3.7		3.5			

TABLE VII

MEAN VALUES FOR RESPONSES TO INTEREST OF PROFESSIONALS TO SELF-CARE FACTORS IN THE AFFECTIVE DOMAIN AS PERCEIVED BY DIABETICS BY AGE AND SEX

Factors	Age 23-34 M N=2	Age 23-34 F N=3	Age 35-64 M N=8	Age 35-64 F N=11	Age 65+ M N=3	Age 65+ F N=5	Total Means for Factors M N=13	Total Means for Factors F N=19
14 Diabetes' influence on lifestyle	3.0	4.7	3.3	3.2	3.3	1.4	3.3	3.0
18 Feelings about daily routines	3.0	3.7	4.0	3.6	2.3	2.8	3.5	3.4
21 Feeling about diabetes	2.5	4.3	2.4	2.8	1.0	2.5	2.1	3.0
23 Participation in group support	1.0	3.0	3.0	1.7	3.0	3.3	2.7	2.3
27 Family responses to diabetes	1.0	4.3	3.0	2.6	2.3	3.3	2.5	3.1
31 Community support services	1.5	1.7	2.1	1.8	1.7	1.3	1.9	1.7
32 Problems with employers or insurance	2.5	2.0	2.1	2.6	1.7	1.5	2.1	2.2
Average mean by sex	2.1	3.4	2.8	2.6	2.2	2.3		
Average mean by age	2.8		2.7		2.3			

The total means for factors in the cognitive domain ranged from 2.3 to 3.7 with the lowest mean displayed in the self-care factor, diabetes concept prior to diagnosis. The highest mean was displayed in the factor, understanding complications. The largest gap in means was 0.7 and was displayed in two factors: understanding diabetes and diabetes concept prior to diagnosis. The average mean ranged from 3.0 for males to 3.3 for females.

The total means for factors in the psychomotor domain ranged from 3.2 to 4.1 with the lowest mean displayed in testing routines and the highest mean displayed in medication routines. The largest gap in means was 0.4 and was displayed in the self-care factor, testing routines. There was no difference in the average mean for sex at a value of 3.6.

The means for the affective domain ranged from a lower level of 1.7 to an upper level of 3.5. The lowest mean was presented in the factor, community support service, while the highest mean was presented in the factor, feelings about daily routines. The largest gap was 0.9 and was displayed in feelings about diabetes. The average means were 2.6 for males and 2.7 for females. These data are presented in Table VIII.

Ranked Importance

Section 3 of the questionnaire instructed the participants to rank the self-care factors from 1 - 15 based on the level of importance they identified. Number 1 being most important, number 2 next, and number 15 being least important. The mean values for self-care factors as ranked from 1 - 15 by diabetic patients were divided into learning

TABLE VIII

OVERALL MEAN VALUES FOR RESPONSES TO INTEREST OF PROFESSIONALS TO SELF-CARE FACTORS BY LEARNING DOMAINS

Factors by Domains	Male N=13	Female N=19	Total Means For Factors
COGNITIVE			
12 Understanding Diabetes	2.8	3.5	3.2
16 Understanding Complications	3.8	3.7	3.7
24 Diabetes Concept Prior to Diagnosis	1.9	2.6	2.3
25 Understanding of Current Diabetes Treatment	2.8	3.2	3.0
26 Self-Care During Illness, Traveling and Holidays	3.2	3.4	3.3
29 Diabetes Information	3.2	3.6	3.4
30 Recipes for Meal Planning	3.2	2.8	3.0
Average Mean For Sex	3.0	3.3	
PSYCHOMOTOR			
13 Testing Routines	3.6	3.2	3.4
15 Exercise Routines	3.3	3.4	3.4
17 Medication Routines	4.1	3.9	4.0
19 Weight Management	3.5	3.9	3.7
20 Treatment for Insulin Reactions	3.6	3.8	3.7
22 Meal Planning	3.5	3.3	3.4
28 Skin and Foot Care Routines	3.5	3.6	3.6
Average Mean For Sex	3.6	3.6	

TABLE VIII (Continued)

Factors by Domains	Male N=13	Female N=19	Total Means For Factors
AFFECTIVE			
14 Diabetes' Influence on Lifestyle	3.3	3.0	3.1
18 Feelings about Daily Routines	3.5	3.4	3.4
21 Feeling about Diabetes	2.1	3.0	2.6
23 Participation in Group Support	2.7	2.3	2.5
27 Family responses to Diabetes	2.5	3.1	2.9
31 Community Support Services	1.9	1.7	1.8
32 Problems with employers or insurance	2.1	2.2	2.2
Average Mean for Sex	2.6	2.7	

domains by age and sex. The smallest number represented the most important. Mean values were figured by adding the total numbers by age and sex for each factor and dividing by the number of participants in each age group and sex. The means for each age group and sex were then added together and divided by the number of means to get the average means by age and sex. The total means for factors were figured by adding together the total points from each sex by age and dividing by the total number of participants.

The self-care factors in the cognitive domain ranged from a lower level of 15.0 to an upper level of 1.0. Understanding diabetes ranked highest with all six groups ranking it first. Techniques in management and understanding complications displayed the largest gaps, with 5.7. The average mean by sex ranged from a lower level of 9.6 to an upper level of 7.1, while, the average mean by age ranged from a lower level of 8.7 to an upper level of 8.4. The total means for factors ranged from a lower level of 14.1 to an upper level of 2.5.

The factors in the psychomotor domain ranged from a lower level of 8.3 to an upper level of 2.0. The upper level factor was meal planning, while, the lower level factors were skin and foot care and exercise routines. The largest gap, that of 5.3, was displayed in the factor, exercise routines. The average mean by sex ranged from a lower level of 6.4 to an upper level of 4.2, while, the average mean by age ranged from 6.2 to 4.6. The total means for factors ranged from 6.5 to 3.9.

The means in the affective domain ranged from a lower level of 14.0 to an upper level of 4.8, with the factor, expenses of care ranking lowest and the factor, feelings about diabetes ranking highest in

importance. The largest gap, that of 5.7, was displayed in the factor, feelings about diabetes. The average means by sex ranged from a lower level of 11.9 to an upper level of 8.3, while, the average means by age ranged from 11.1 to 9.1. The total means for factors ranged from a lower level of 11.7 to an upper level of 6.2. These data are presented in Table IX.

The total means from Table IX were utilized to identify the rank order of self-care factors. They were listed in Table X to provide comparison information. Total means and rank order for self-care factors by learning domains are provided in Table X.

The cognitive domain factors ranged in rank from a lower level of 15 to an upper level of one, with a total of 47 points. The psychomotor domain factors ranged in rank from seven to two, with a total of 22, while, the affective domain factors ranged from 14 to five, with a total of 51 points.

Level of Compliance

In section 4 of the questionnaire, participants were instructed to identify their level of compliance to nine self-care factors, two from the cognitive domain, two from the affective domain and five from the psychomotor domain. The compliance level of the participants were to be rated on a five point scale, with level 1 on the scale corresponding to never, level 2 corresponding to seldom, level 3 to sometimes, level 4 to usually, and level 5 to always. The scale was like the one utilized in section 2. NIG, no instructions given and NR, no response were possible answers in this section, but since these choices would only equate to zero they were not included in the

TABLE IX

MEAN VALUES FOR SELF-CARE FACTORS AS RANKED FROM 1 - 15
BY DIABETIC PATIENTS FOR COGNITIVE, PSYCHOMOTOR,
AND AFFECTIVE DOMAINS BY AGE AND SEX

Factors by Domains	Age 23-34		Age 25-64		Age 65+		Total Means for Factors
	M N=1	F N=2	M N=6	F N=10	M N=3	F N=4	
COGNITIVE							
a) Understanding Diabetes	1.0	1.0	1.0	3.3	3.3	3.3	2.5
b) Techniques in Management	14.0	3.5	9.2	10.3	10.0	8.3	9.3
h) Management During Illness	8.0	9.5	7.8	6.6	5.3	10.8	7.7
m) Understanding Complications	10.0	6.5	12.2	10.7	9.7	9.5	10.4
o) Utilization of Community Organizations	15.0	15.0	14.0	14.2	11.7	14.8	14.1
Average Mean by Sex	9.6	7.1	8.8	9.0	8.0	9.3	
Average Mean by Age	8.4		8.9		8.7		
PSYCHOMOTOR							
c) Skin and Foot Care	5.0	7.5	6.8	7.6	7.7	8.3	4.2
e) Medication Routines	7.0	2.5	2.8	4.3	2.3	5.8	3.9
g) Meal Planning	2.0	3.5	4.3	4.1	4.0	3.8	4.0

TABLE IX (Continued)

Factors by Domain	Age 23-34 M N=1	Age 23-34 F N=6	Age 35-64 M N=6	Age 35-64 F N=10	Age 65+ M N=3	Age 65+ F N=4	Total Means for Factors
i) Exercise Routines	3.0	4.5	5.3	6.6	8.3	8.3	6.5
l) Blood Testing Routines	4.0	7.0	7.3	6.0	7.0	6.0	6.4
Average Mean by Sex	4.2	5.0	5.3	5.7	5.9	6.4	
Average Mean by Age	4.6		5.5		6.2		
AFFECTIVE							
d) Family Attitudes	6.0	11.0	9.0	8.8	9.0	8.5	8.6
f) Your Feelings About Diabetes	13.0	9.5	5.5	4.8	5.7	7.8	6.2
j) Adjusting to Daily Routines	9.0	12.5	9.0	8.2	9.7	6.8	8.7
k) Attitudes of Friends	11.0	12.5	12.2	11.1	12.0	9.3	11.3
h) Expenses of Care	12.0	14.0	10.8	12.4	13.0	9.3	11.7
Average Mean by Sex	10.2	11.9	9.3	9.1	9.9	8.3	
Average Mean by Age	11.1		9.2		9.1		

TABLE X

TOTAL MEANS AND RANK ORDER FOR IMPORTANCE OF SELF-CARE FACTORS BY LEARNING DOMAINS

Factors by Domains	Total Means For Factors	Rank Order
COGNITIVE		
a) Understanding Diabetes	2.5	1
b) Techniques in Management	9.3	11
h) Management During Illness	9.7	8
m) Understanding Complications	10.4	12
o) Utilization of Community Organizations	14.1	15
Total Points for Domain		47
PSYCHOMOTOR		
c) Skin & Foot Care	4.2	4
e) Medication Routines	3.9	2
g) Meal Planning	4.0	3
i) Exercise Routines	6.5	7
l) Blood & Urine Testing Routines	6.4	6
Total Points for Domain		22
AFFECTIVE		
d) Family Attitudes	8.6	9
f) Your Feelings About Diabetes	6.2	5
j) Adjusting to Daily Routines	8.7	10
k) Attitudes of Friends	11.3	13
n) Expenses of Care	11.7	14
Total Points for Domain		51

tables. Frequency counts, mean values, rank order and percentage ratings were utilized in Tables XI through XV to analyze the levels of compliance by ages, sex and learning domains.

The mean value of each self-care factor was identified and separated into learning domains to obtain an average mean for each domain. In the cognitive domain, the two factors, diabetes information and management during illness were identified as 3.8, making the average mean also 3.8.

The mean values for the five factors in the psychomotor domain ranged from 3.8 for exercise routines to 4.5 for medication routines. The average mean for the psychomotor domain was identified as 4.2 .

The mean values for the two factors in the affective domain ranged from 2.0 as displayed in the factor, social and emotional support groups to 3.1 as displayed in the factor, family involvement. 2.6 was the average identified for the affective domain. These data are presented in Table XI.

Following the identification of mean values for self-care factors by domains and for the average of each domain, the mean values for each sex and age group were identified. The range of means was from 3.5 by males to 4.0 by females. Frequency of responses and overall mean values for levels of compliance to self-care factors by age and sex are presented in Table XII.

The range of mean values for compliance to self-care factors as they related to learning domains by age and sex were identified. The range of means in the affective domain was from 2.5 by males and the 23 - 34 year age group, to 2.9 by females. The range of means in the cognitive domain was from a low of 3.2 by males to a high of

TABLE XI

FREQUENCY OF RESPONSES AND MEAN VALUES FOR LEVELS OF COMPLIANCE TO SELF-CARE FACTORS BY LEARNING DOMAINS

Factors	N Number of Responses	1 Never F	TP	2 Seldom F	TP	3 Sometimes F	TP	4 Usually F	TP	5 Always F	TP	Total Points For Factors	Mean For Factor
COGNITIVE													
Diabetes Information	27	1	1	4	8	3	9	11	44	8	40	102	3.8
Management During Illnes	29	3	3	3	6	4	12	7	28	12	60	109	3.8
										Average for Domain			3.8
PSYCHOMOTOR													
Medication Routines	27	0	0	1	2	2	6	6	24	18	90	122	4.5
Meal Planning	29	0	0	1	2	5	15	6	24	17	85	126	4.3
Skin & Foot Care	28	0	0	3	6	3	9	10	40	12	60	115	4.1
Exercise Routine	29	2	2	3	6	5	15	8	32	11	55	110	3.8
Glucose Testing	29	0	0	2	4	6	18	7	28	14	70	120	4.1
										Average for Domain			4.2
AFFECTIVE													
Social and Emotional Support Groups	25	11	11	8	16	3	9	2	8	1	5	49	2.0
Family Involvement	25	3	3	2	4	7	21	5	10	8	40	78	3.1
										Average for Domain			2.6

TABLE XII

FREQUENCY OF RESPONSES AND OVERALL MEAN VALUES FOR LEVEL OF COMPLIANCE TO SELF-CARE FACTORS BY AGE AND SEX

Factors	N Number of Responses	1 Never F	1 Never TP	2 Seldom F	2 Seldom TP	3 Sometimes F	3 Sometimes TP	4 Usually F	4 Usually TP	5 Always F	5 Always TP	Total Points For Factors	Mean For Factor
Male	108	12	12	13	26	19	57	32	124	32	160	383	3.5
Female	138	8	8	14	28	19	57	35	140	63	315	548	4.0
23-34 yrs.	43	5	5	3	6	2	6	20	80	13	65	162	3.8
35-64 yrs.	142	8	8	17	34	26	78	33	132	59	295	547	3.9
65+ yrs.	62	7	7	7	14	10	30	14	56	24	115	227	3.7

4.26 by females. A range of 4.0 by males and the 65+ year group, to 4.25 by females was displayed in the psychomotor domain. These data are presented in Table XIII.

The mean values for compliance as related to learning domains by age and sex were utilized to establish a rank order of domains by age groups and sex. A rank order of: (1) psychomotor domain, (2) cognitive domain, and (3) affective domain was displayed in all age groups. While the same rank order was identified in the male group, the female group ranked the cognitive domain first, the psychomotor domain second, and the affective domain third. The rank order of compliance to self-care factors as related to learning domains by age and sex are presented in Table XIV.

Compliance levels for patients participating in the study were also figured by percentage ratings. A range of 45 percent to 80 percent was identified in the cognitive domain at levels 4 and 5, cumulatively. In the psychomotor domain the cumulative range of compliance for levels 4 and 5 was from 52 percent to 78 percent. While a range from 20 percent to 30 percent was identified in the affective domain. In each of the domains the lowest cumulative percentage was identified in the 65+ years group.

The remaining possible answer, NIG, no instructions given, was also figured by percentage ratings. A range from zero to 20 percent was identified in the cognitive domain; from 3.1 percent to 16 percent in the psychomotor domain and from zero to 35 percent in the affective domain. In each domain the highest percentage for NIG was identified in the 65+ years group. While the lowest percent-

TABLE XIII

MEAN VALUES FOR COMPLIANCE TO SELF-CARE FACTORS AS RELATED TO LEARNING DOMAINS BY AGE AND SEX

Factors	Cognitive	Psychomotor	Affective
	$\bar{x}$	$\bar{x}$	$\bar{x}$
Male	3.2	4.0	2.5
Female	4.26	4.25	2.9
23 - 34 yrs.	4.1	4.2	2.5
35 - 64 yrs.	3.9	4.2	2.8
65+ yrs.	3.5	4.0	2.8

TABLE XIV

RANK ORDER OF COMPLIANCE TO SELF-CARE FACTORS AS RELATED TO LEARNING DOMAINS BY AGE AND SEX

Domains	Age			Sex	
	23-34	35-64	65+	Male	Female
Cognitive	2	2	2	2	1
Psychomotor	1	1	1	1	2
Learning	3	3	3	3	3

age was identified in the 23 - 34 years group in the cognitive and affective domains and in the male group in the psychomotor domain. Percentage rating of compliance by age groups, sex and domains are presented in Table XV.

Summary

In summary, there were 34 patients who participated in this descriptive study. For comparison information, the participants were separated by sex with 13 males and 21 females, and by age with three age groups: 23 - 34 years, 35 - 64 years, and 65+ years.

A rank order of learning domains: psychomotor, cognitive and affective was identified in all areas of the study by age and sex with the exception of the female's level of compliance. The rank order: cognitive, psychomotor and affective was identified in the female group with a mean difference of 0.03 between the cognitive and psychomotor domains.

TABLE XV

PERCENTAGE RATINGS OF COMPLIANCE BY AGE GROUPS, SEX AND LEARNING DOMAINS

Groups	Number of Responses	1 Never	2 Seldom	3 Sometimes	4 Usually	5 Always	NIG No Instructions Given	NIR No Response
COGNITIVE								
Male	26	15.4	11.5	11.5	38.5	11.5	11.5	-0-
Female	42	-0-	9.5	9.5	19.0	38.1	9.5	14.3
23-34 yrs.	10	10.0	-0-	-0-	40.0	40.0	-0-	10.0
35-64 yrs.	38	2.6	13.2	13.2	28.9	28.9	7.9	5.3
65+ yrs.	20	10.0	10.0	10.0	15.0	25.0	20.0	10.0
PSYCHOMOTOR								
Male	65	3.1	7.7	16.9	27.6	41.5	3.1	-0-
Female	105	-0-	4.8	9.5	22.9	38.0	14.3	10.5
23-34 yrs.	25	4.0	-0-	4.0	56.0	32.0	4.0	-0-
35-64 yrs.	95	-0-	6.3	14.7	18.9	45.3	9.5	5.3
65+ yrs.	50	2.0	8.0	12.0	20.0	32.0	16.0	10.0

TABLE XV (Continued)

Groups	Number of Responses	1 Never	2 Seldom	3 Sometimes	4 Usually	5 Always	NIG No Instructions Given	NR No Response
AFFECTIVE								
Male	26	23.1	19.2	23.1	11.5	7.7	15.4	-0-
Female	42	19.0	11.9	11.9	7.1	16.7	19.0	14.3
23-34 yrs.	10	30.0	30.0	10.0	20.0	10.0	-0-	-0-
35-64 yrs.	38	18.4	15.8	18.4	10.5	13.2	18.4	5.3
65+ yrs.	20	20.0	5.0	10.0	5.0	15.0	35.0	10.0

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The content of the chapter is divided into three sections. A summary of the study is presented in the first section followed by the conclusions of the study. The final section contains the recommendations for practice and further research.

Summary of Findings

The purpose of this study was to identify the diabetic patients' perceptions of diabetes education received in relation to the learning domains. This purpose was achieved in the following manner.

A comprehensive review of literature on teaching methods and philosophies of diabetes professionals was conducted by the researcher. The review indicated a need to evaluate the diabetes education received by patients in relation to learning domains. The importance placed on attitudes and behaviors of diabetics by educators, stressed the need to place more emphasis on the affective domain.

Prior to the study telephone interviews were conducted with the diabetes educators from the six Tulsa area hospitals. The interviews were conducted to: (1) identify the educators' perceptions of their degree of assistance to patients in their psychosocial adjustment to diabetes, (2) to identify areas of concentration in their program formats, and (3) to determine the educators' willingness

to assist in gathering the research data.

There were 34 patients from three Tulsa area hospitals who participated in the study. The research was conducted between January 24, 1983 and February 18, 1983.

The instrument used in the research was a closed-form questionnaire consisting of four sections. The sections included: demographic information with only age and sex considered for this study, a rating of the perceived interest of professionals, a rank order of importance of self-care factors, and a rating of the degree of compliance of patients to self-care factors.

Data was analyzed utilizing frequency counts and percentages. Mean values and rank order were also utilized for analysis.

Conclusions

The conclusions that resulted from the findings in this study were:

1. The patients who participated in this study identified the following factors most important in all sections of the questionnaire. Understanding diabetes and diabetic complications were the most important self-care factors identified in the cognitive domain. The self-care factors, medication routines and meal planning were identified in the psychomotor domain as most important. While, feelings about diabetes and feelings about daily routines were identified in the affective domain.

These factors identified as most important are areas of diabetes that must be dealt with immediately upon diagnosis and throughout the disease process. There are many other factors that can be

ignored until an emergency situation occurs, such as: glucose testing, exercise, weight, insulin reactions, self-care during illness, and skin and foot care.

2. The domains' levels of importance were very obvious throughout the analysis of the findings. All groups of participants by age and sex identified the psychomotor domain as most important, the cognitive domain as second and the affective domain third, with the exception of the females in section 4 on compliance. In this instance, the females ranked the cognitive domain as most important and the psychomotor domain second by a mean difference of 0.03. In light of only a 0.1 mean difference in the 23 - 34 year age group the 0.03 difference seems of little importance to the researcher.

The factors in the psychomotor domain are complied with more frequently because they deal with developing motor skills that are performed daily, are measurable and become routine in nature. While, those in the cognitive domain deal with acquiring knowledge and developing intellectual skills which requires initiative on a continuing basis on the part of the patient. The affective domain requires even more initiative on the part of the patient since it deals with changes in attitudes and values, and in the development of behaviors and adjustments.

It is essential that the patient want to understand his feelings and admits that a change in behavior must occur. It is also helpful if the patient can admit a need and be willing to accept help. This is very difficult for some patients since admitting to a need for help could be mistaken for a sign of weakness.

3. The patients participating in this study perceived their

compliance in levels 4 and 5, cumulatively, as being greater to those self-care factors in the domains rating higher, in interest by professionals and personal importance. The degrees of compliance were in direct relationship to the domains' levels of importance. The cognitive and psychomotor domains percentages of compliance were greater than 50 percent, while percentages less than 30 percent were identified in the affective domain.

Compliance occurs when something is viewed as important by one's self and/or by others. The degrees of compliance identified by domains can be viewed as the establishing of the patients' personal priorities of care. This can be directly related back to the initiative required in achieving skills levels, i.e., motor, intellectual, and emotional adjustment skills.

4. Of the patients participating in this study, their perception by age and sex varied in only two areas. The first area was the female ranking of the cognitive domain first in the area of compliance. Which, is stated previously by the researcher was so minimal as to be viewed as unimportant. The second area was the low compliance level identified in the 65+ years group.

Older individuals frequently develop the attitude, especially when discussing changes in behavior, that they have nothing left for which to live. Many excuses are given for their non-compliance such as: being too old to change, unable to afford the food, supplies, medication or doctor bills, not smart enough to learn how, or no one want me around, so what if I die. But what these people are really saying is they have lived their lives and have grown old. And if they are making it the way they are, they are not going to change

the way they live in hopes of a few more years of being old. Many elderly cease to have much to live for and the incentive to go on is lost.

Recommendations for Practice

Based upon the findings of this study, the following recommendations for practice are presented:

1. While, educators and patients agree that development of motor skills is the most important aspect of diabetes education, psychosocial adjustment is not perceived to be as important as it should be. Therefore, educators should incorporate psychosocial self-care factors in their program formats to further stress the importance of the psychosocial aspects. It is important for patients to understand the seriousness of the development of adequate behaviors and emotional and social adjustments.

2. More emphasis should be placed on the intellectual skills by educators. Patients focusing on skills without the knowledge of the disease process and the rationale for treatment are in a dangerous and unfortunate position. With an adequate and updated knowledge base, patients could better identify signs and symptoms of impending problems and complications.

3. Educators should determine the emotional status of each patient on an individual basis and determine those needing support with their feeling about daily routines and diabetes influence on lifestyles. It is possible that skills levels would not have to be as high if patients' psychosocial status was improved. This can be validated by the elevation of the blood glucose levels associated with

stress.

4. Educators should offer or support classes and speakers on psychosocial adjustment. This could help solve the problem of not enough time for the educating of patients as identified by educators.

Recommendations for Further Research

The following recommendations for further research are presented:

1. The study should be replicated using diabetics outside the hospital environment on a regional or national basis and with more demographics for further comparisons.

2. The above study should be conducted to include a control group with concentrated psychosocial emphasis as the independent variable.

3. Conduct a study using diabetics over 65 years of age to determine if their low compliance level can be improved.

4. Conduct a study using diabetics and educators to identify psychosocial characteristics for the purpose of developing a guideline for psychosocial assessment.

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APPENDIXES

APPENDIX A

EDUCATOR INTERVIEW FORM

1) Hospital Employed By:_____

2) Year Position Granted:_____

3) Formal Educational Format:_____

4) Areas of Concentration:_____

_____

_____

_____

_____

5) Patients Educated (%)

During Hospitalization:_____

Scheduled Returns:_____

Outpatients:_____

6) Philosophy on Psychosocial Characteristics:_____

_____

_____

_____

_____

_____

_____

APPENDIX B

QUESTIONNAIRE

DIABETES INFORMATION QUESTIONNAIRE

Please answer all the questions found in this questionnaire and remember they apply to all the education you have received since diagnosis.

SECTION 1 - DEMOGRAPHIC INFORMATION
For each of the following items, please check the appropriate box.

1) Age

a) 23-34 years ☐
b) 35-64 years ☐
c) 65 and over ☐

2) Sex

a) male ☐
b) female ☐

3) Employment Status

	Yes	No
a) Are you presently employed?	☐	☐
b) Are you a housewife?	☐	☐
c) Are you retired?	☐	☐
d) Are you disabled?	☐	☐

4) Marital Status

Are you:
a) married? ☐
b) divorced? ☐
c) separated? ☐
d) single? ☐
e) widowed? ☐

5) Living Arrangement

Do you live With:
a) alone? ☐
b) friends? ☐
c) family? ☐

6) Educational Level

Grades (Years) completed:
a) 1-6 ☐
b) 7-9 ☐
c) 10-12 ☐
d) 13+ ☐

7) Age when diagnosed with diabetes:

a) 0-20 years ☐
b) 21-30 years ☐
c) 31-40 years ☐
d) 41-50 years ☐
e) 51-60 years ☐
f) over 61 years ☐

8) Do you see a doctor at least once a year for your diabetes?

a) yes ☐ b) No ☐

9) How do you manage your diabetes:

a) Oral hypoglycemia agents ☐
b) Insulin ☐
c) Diet ☐
d) Exercise ☐

10) How do you test your glucose test

a) Blood testing ☐
b) Urine testing ☐
c) Both ☐
d) Neither ☐

11. Who have you talked with about your diabetes? Check all that apply.

a) doctor	☐	g) other diabetics	☐
b) nurse	☐	h) support group	☐
c) diabetes educator	☐	i) counselor	☐
d) dietician	☐	j) American Diabetes Association	☐
e) social worker	☐	k) spouse	☐
f) friend	☐	l) family	☐

SECTION 2 - Please circle the appropriate number on the scale below.

1 = Never
2 = Seldom
3 = Sometimes
4 = Usually
5 = Always

When discussing your diabetes with all health care professionals, did you discuss the following:

	Never	Seldom	Sometimes	Usually	Always
12. Your understanding of diabetes and its management	1	2	3	4	5
13. Following urine or blood testing routines (home monitoring)	1	2	3	4	5
14. How diabetes has influenced your lifestyle	1	2	3	4	5
15. Your exercise routine in relationship to diabetes management	1	2	3	4	5
16. Your understanding of diabetic complications	1	2	3	4	5
17. Following hypoglycemia agent or insulin routines	1	2	3	4	5
18. Your feelings about your daily routine of self-care	1	2	3	4	5
19. Your weight in relationship to diabetes management	1	2	3	4	5
20. What you do for insulin reactions	1	2	3	4	5
21. How you feel about having diabetes	1	2	3	4	5
22. Following a meal plan	1	2	3	4	5
23. Participation in a support group	1	2	3	4	5
24. Your understanding of diabetes prior to diagnosis	1	2	3	4	5
25. Your understanding of current treatments in diabetes	1	2	3	4	5
26. Your understanding of self-care when ill, traveling and on holidays	1	2	3	4	5
27. How your family responds to your having diabetes	1	2	3	4	5
28. Following skin and foot care routines	1	2	3	4	5

		Never	Seldom	Sometimes	Usually	Always
29.	New information on diabetes	1	2	3	4	5
30.	New recipes for good meal planning	1	2	3	4	5
31.	Community support services	1	2	3	4	5
32.	Problems you identify with employers or insurance	1	2	3	4	5

SECTION 3 - Rank the following aspects of care from 1-15 according to how important they are to you. Identify the most important as #1, second most important as #2 and so on until the least important aspect is identified as #15.

33. a) ___ Understanding your diabetes

b) ___ New techniques in diabetes management

c) ___ Daily skin and foot care

d) ___ Family attitudes and feelings about diabetes

e) ___ Taking oral hypoglycemic agents or insulin

f) ___ Your feelings about yourself in relationship to diabetes

g) ___ Following a meal plan

h) ___ Management of your diabetes during illness

i) ___ Exercise

j) ___ Adjusting to daily routines

k) ___ Attitudes of friends and employers in relationship to your diabetes

l) ___ Urine or blood testing routines

m) ___ Understanding of diabetic complications

n) ___ Expenses of diabetic care

o) ___ Utilization of community organizations and published information

SECTION 4 - How often do you comply with the self-care treatment suggested by your physician or educator in each of the following areas:

If no instructions have been given in an area Check NIG ☐, no instructions given.

		NIG	Never	Seldom	Sometimes	Usually	Always
34.	Oral hypoglycemia or insulin routine	☐	1	2	3	4	5
35.	Following a meal plan	☐	1	2	3	4	5
36.	Skin and foot care	☐	1	2	3	4	5
37.	Exercise routine	☐	1	2	3	4	5
38.	Urine and/or blood testing	☐	1	2	3	4	5
39.	Social and emotional support contacts	☐	1	2	3	4	5
40.	Family involvement in care	☐	1	2	3	4	5
41.	Seeking new information concerning diabetes	☐	1	2	3	4	5
42.	Management during holidays, traveling, and illness	☐	1	2	3	4	5

Thank you for filling out this questionnaire. It will help the educators know more about the areas of diabetes you are most concerned with.

Comment if you wish and please return the questionnaire to your educator.

COMMENTS:

APPENDIX C

COVER LETTER FOR QUESTIONNAIRE

January 24 - February 18, 1983

Survey Participant:

The attached questionnaire is being presented to you in an attempt to determine how helpful the diabetes education you have received has been to you. The questionnaire applies to all the health care professionals you have discussed your diabetes with since diagnosis. The questionnaire is in no way a direct evaluation of the health care professionals you are working with at the present time.

In addition to completion of the questionnaire, general information is being requested to make the results more meaningful and will not be used to identify participants.

Please complete each question to the best of your ability. Do not sign your name on the questionnaire. Individual anonymity and confidentiality will be maintained. Completion of this questionnaire will indicate your consent to participate in this study.

Please place the questionnaire in the attached envelope and return to your educator as soon as possible.

Thank you for your participation.

Sincerely,

Linda Bresnahan, RN
Diabetes Educator
American Assoc. of
Diabetes Educators

VITA

Linda Lee Wyer Bresnahan

Candidate for the Degree of

Master of Science

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