Education: A Barrier to Self-Management of Diabetes

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Abstract

The perspective of Professional Nursing practice in relationship to nursing research remains a critical piece of nursing practice. Nurses throughout history demonstrated different theoretical concepts, as it integrates knowledge in the perspective of improvements in best evidence based practice, towards implementation of measurable patient care outcomes. As such, this research study evaluates, explores, examines, and measures the effects of nursing education and resources, in diabetes self-management. The aim of this study is to examine and/or measure the effectiveness of educational tools, or knowledge of individuals that require self- management, of type II Diabetes. This research study examines nursing education tools used, in dietary compliance, insulin therapy, medication regime, and community resources. The results of this research study will improve self-management, of individuals, with type II Diabetes.

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Chapter 1

Introduction

Diabetes remains one of most devastating chronic diseases within the United States of America. Likely, diabetes and cardiovascular disease are two of the most costly and prevalent diseases, in the U.S. population and throughout its communities. Professional nurses work diligently with communities to provide education, healthcare promotion, and information on preventive and restorative measures. As such, education remains the cornerstone, and an integral part of diabetes treatment, and self- management regime. Seemingly, diabetes education remains imperative in both inpatient and outpatient health care environments. Research remains an important tool in collecting data, to identify the needs of individuals, within the community, and population. The development of nursing interventions at the bedside, and within the community of a population, remains a priority. Nursing research is a diligent systematic inquiry or investigation to validate, and refine existing healthcare practices, in the generation of new knowledge, and nursing practice (Grove, Burns, & Gray, 2013). Seemingly, the utilization of evidenced based practice in collecting data to identify the needs of individuals within the community is imperative. The application of scientific health care studies within the community includes the best available resource variables, related to research studies in a particular community, as evidence from expertise of professional nurses, nurse administrators, and evidence from community leaders. As such, throughout decades, traditional healthcare presented fragmented treatments, disorganized, duplicative, diseased focused management. Research data provided by a survey, of care which was given to patients that were diagnosed, and treated for diabetes showed 65% to 74% of patients received care that was recommended by the American Diabetes Association (Dunning, & Manias 2005). However, research data showed increases in

morbidities, and poor healthcare outcomes for patients, with type 2 diabetes. Seemingly, all patients and individuals, with in the population that are diagnosed with diabetes, should be educated, and monitored closely while receiving patient focused care. Moreover, research reveals, individuals with type 2 diabetes received self-care education; however, patients did not have adequate knowledge, concerning their medications, and disease process to maintain optimal healthcare outcomes (Dunning, & Manias, 2005). In addition, a study completed by Manias (2004), a total of seventeen patients with diabetes completed a questionnaire concerning their medication regiment, in which 93% of participant received education on dosage, route, time, and location; however, 37% of participants received instructions, in regards to hyperglycemia, hypoglycemia, and side effects of all prescribed medications.

Research Purpose

The aim of this study is to examine and/or measure the effectiveness of educational tools, or knowledge of individuals that require self- management, of type II diabetes. The research study will examine nursing education tools used, in dietary compliance, insulin therapy, medication regime, and community resources. The results of this research study will improve self-management, of individuals, with type II diabetes.

Problem Statement Diabetes

Diabetes Mellitus remains a prevalent and costly condition that causes significant morbidity and mortality. Likely, diabetes and cardiovascular disease are two of the most costly and prevalent diseases, in the U.S. population and throughout its communities. In the United States 15.7 million people (5.9% of the total population) have diabetes, and 5.4 million are undiagnosed; moreover, according to the new death certificate data, diabetes remains, the seventh leading cause of death in the United States, in which mortality is primarily related to heart disease. Even though, many research studies have resulted in the implementation of improved education materials; future research studies conducted on diabetes research should focus on education, including the effects and measurements, of individuals controlling their diabetes, as by doing that they will lessen other health care issues such as, eye sight failure, and cardiovascular disease, diabetic neuropathy, foot ulcers, and foot amputations. Current research data shows approximately 23.5 million Americans have diabetes, with no significant drop in the diagnosis of diabetes, compared to 1987.

Research Question

What are the most effective educational tools in the management of diabetes patients, which result in lowering incidents of comorbidities, such as cardiovascular disease, foot ulcers, amputation, and frequent hospital remissions?

Chapter 2

Literature Review

Education remains the cornerstone, and an integral part of diabetes treatment, and self-management regime. Likely, Diabetes remains one of the most costly and prevalent disease, in the U.S. population and throughout its communities. As a result, the following articles provide research finding in studies, related to type II Diabetes self-management.

Related Literature Reviews

Economic Barriers. Historical evidence identifies and suggests that patients with economic problems experience difficulty in self-management of diabetes, due to economic difficulties such as redundancies, and sharp increases in cost living, which creates barriers in healthcare resources, and health care education. Wilson, (2011) conducted a research study on economic barriers related to diabetic self-management**.** This study, explored the expectation that self-management, of insulin-dependent diabetes changes adversely when individuals are affected by economic problems. The author uses a qualitative method and discuss a pilot study involving ten individuals, between the ages 41 and 64 with a long duration, of insulin dependent diabetes. The research study showed financial barriers to self-care management of diabetes were significantly higher among individuals, with fewer social resources, such as education attainment, lower occupational status, rural residents, single individuals, individuals ages 35 to 49, and those with diabetes co-morbidities.

Hunt (2013) conducted a research study, on nursing interventions related to the self-care management among individuals living with type II diabetes. This article was a review of current

research literature that examined and described nursing interventions, and self-management of type II diabetes. Nurses provided care for individuals in a variety of areas. Nursing interventions assisted individuals living with type II diabetes and they positively affected their outcomes. The majority of reviewed studies included nursing education interventions for patients living with diabetes. Nursing interventions were linked to improvement in diabetes knowledge, self-management behaviors, as well as psychological and physiological outcomes.

Sociological Aspect. Edwards and Titchen (2003) conducted a research study on the patients' perspectives, this article focused on the sociological aspect of diabetes care. Research questions relating to patients processes of evaluation were established. The possible contributions in a range of interpretative methodologies were used and examined the sociological views of the research process on the patents health. This study concluded that it remains impossible to understand the total effects of patients' experiences while receiving care; however, nurses and healthcare professionals should listen carefully, receive patient information, during interaction, rather than assume that the patient understands his or her care.

Rural Populations. Diabetic education in rural parts of the populations is at times difficult, due to decreased access to healthcare, and the patient's inability to maintain transportation, for health care needs. Clark, Myra, Sharon, and Hollen (2011) conducted a research study on the use, of diabetes self-management educational, and research instruments, among rural African American population. The author examined the ability of African American individuals in the rural population, to self-manage of type II diabetes, and ability to understand the education tools. Researchers in this study found that diabetic education should remain cultural specific, while utilizing education and research tools. The African American population

demonstrated an increase in understanding of self-care, due to tailored education tools, that remained cultural specific, to this population.

Dunning, Hudson and Quinn (2006) conducted a research study involving medication knowledge and self-management of diabetes type II; this study was conducted to explore and measure the effectiveness of medication knowledge and self-management practices of people, with type II diabetes. The study design included a systematic one shot sectional study, which included in depth patient interviews and patient observations. The results of these studies included education management which showed that 83% of patients received specific education, about their medications and ninety-three percent of patients, with diabetes were given information, in how to take their medication; however, only 52% of patients demonstrated accurate ability, in taking their medications, according to the instructions.

Quin, Hudson and Dunning (2005) conducted a research study that examined evidence literature in the management of diabetes, from the practice of doctors, and nurses. These studies measured and examined the effectiveness of care, in relationship to advancement, of the disease. The studies suggested that literature indicated no evidenced based guidelines, specific to diabetic palliative care. Patients continued with uncontrolled hyperglycemia, as they were not screened during hospital admission, and only monitored in the hospital, while symptomatic.

Professional Nurses. Gershater and Forbes (2013) conducted a study of diabetes in nursing. The article examines the knowledge of professional nurses in the research of diabetes; this article encourages professional nurses to increase patient advocacy, in knowledge and education. The results of this study suggested, as nurses increased their education in diabetes self-management; consequently, patient's ability increased to perform self-care.

Socio-economic Class. Grintsova, Maier, and Mielck (2014) conducted a systematic review of the research literature, on the availability of diabetic management, and care among socio economic class of individuals. The study involved a systematic numerical analysis, in which the article of provided clear points of evidence that inequality do exist, which indicated a trend in worse healthcare outcome indicators, for individuals with low social economic status, including both processes of care, and intermediate outcome indicators that increased risks of microvascular, and macro vascular complications.

Karakurt and Kasiki (2012) conducted a study on the effects, of type II diabetic education, in self-care management. The study consisted of a single group pretest, and posttest experimental design. This study suggested the difference between pre and post diabetic education. Results showed an increase metabolic control value, and significant higher Diabetic Self Care Scale (DSCS) scores post education.

Maindal, Skrive, and Kirkvole (2011) investigated socio-economic and disease related predictors for non-participant patients with diabetes, enrolled in self-management programs. A total of 322 patients participated in the program, ages 45 to 75 years of age; among the participants, 123 of 142 (87%) completed, a 12 week program. The study revealed no significant difference in baseline characteristics, between those who signed up for the program and those who completed the program.

Moriyanna, Nakano, Kuroe (2009) conducted a study that included a 12 month self-management program. The program provided an educator every month with each patient for 30 minutes, after clinical evaluations. Goals were set for dietary control and exercise regime. The result of this study showed an 82% completion rate, with 42 participants in an intervention

group, and 23 participants in a control group, in which dietary and exercise achievements increased, to a score greater than 70%.The study revealed an overall improvement in physiological data related to disease prevention, complications, and improvement in quality of life.

White, Manning, and Brawer (2013) conducted a research study to evaluate the results of patient outcomes, after patients received diabetic self-management education, from national standards for diabetic education. Results showed no evidence of consistency, in the process, to measure participant's goals that were achieved or success in following self-care management recommendations.

Valde (2011) conducted a study that involved diabetic education among school age children, parents, and teachers. The diabetic education program was conducted by community volunteers. The results of the study provided measurable outcomes which involved a total of 285 students located in three pilot schools. A pre and post program educational questionnaire revealed a 25% knowledge increase among students, family, and school faculty.

Bagnasco, Di Giacomo, and Da Rin Della Mora (2014) study identified and reviewed personal characteristics, such as ethnicity, and health care literacy, which may influence the effectiveness of diabetes self-management education. The results of this study identified a better understanding, of the patient's personal characteristics, improved patient's empowerment, which increased treatment compliance, and patient care outcomes.

Fitzner and Moss (2013) study examined tele health, as an effective method of delivery, to improve diabetes self-management education. The results of this study showed tele health

delivered effective, efficient, and affordable ways to reach, and support minority patients, and others with diabetes type 2, in self-management education, by smart phones, electronic devices, and computers.

Hollis, Glaiseter, and Lapsley (2014) conducted a study to determine Practical nurses training and knowledge, concerning diabetes education. The study consisted of 29 Practical nurses, 55% responded to a survey. These findings suggested that Practical nurses have deficits in knowledge required to educate individuals with diabetic self-care management.

Education Outcomes. Babelgaith, Baidi, and Al-Arifi (2015) study evaluated the impact of education intervention by health care providers, on clinical outcomes in patients with diabetes type 2. The results of these studies showed educational interventions improved diabetic patients clinical outcomes, such as significant improvement in fasting blood sugars, blood pressure, cholesterol, and other clinical indicators.

Wu, Tung, and Liang (2014) conducted a study that examined the different perceptions of diabetic patients, and nurses, regarding completion of self-care activities, barriers to participate, and educational needs. The results of these studies suggested that patients perceived themselves to know more in self-care activities, whereas nurses' perceived patient had less knowledge, in successfully completing self-care tasks. Nurses perceived a greater need for health care education, than patients.

Naglekerk, Reick, and Meengs (2006) study examined the perceived barriers, and effective strategies in self-management of type 2 diabetes. Their result suggested that the most frequently reported barriers, were lack of knowledge in specific diet plans, lack of understanding

in plan of care, helplessness and frustrated, from lack of glycemic control, and disease progression. Effective strategies to improve knowledge included developing a collaboration alliance with practitioner and patients.

Klein, Jackson, and Street (2012) studied how successfully, current diabetic self- care education helped patients, achieve, and sustain control of their blood glucose. The results of this study found that interventions performed by nurses, decreased patients Ac1 levels more successfully, in comparison, to non-nursing personnel. The overall findings indicated a significant decrease, in Ac1 levels from 8.7 to 7.6. However, patients did not sustain long-term healthy Ac1 levels.

Mardani, Shahraki, and Piri (2010) study determined the effects of education based on the HBM (Health Belief Model) on diet obedience in type 2 diabetic patients. Interventions for both groups consisted of 40 minutes of educational sessions that included lecture and pamphlets, which included standard treatments. Their results suggested no significant differences in general characteristics, between the 2 control groups, before interventions. However, glycosylated hemoglobin before interventions was 8.9 and after 7.4

Chapter 3 Methodology

Introduction

This chapter will present the purpose, research question, and methodology for this research.

Research Purpose

The aim of this study is to examine and/or measure the effectiveness of educational tools, or knowledge of individuals that require self- management, of type II diabetes. The research study examines nursing education tools used, in dietary compliance, insulin therapy, medication regime, and community resources. The results of this research study will improve self-management, of individuals, with type II diabetes.

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data shows approximately 23.5 million Americans have diabetes, with no significant drop in the diagnosis of diabetes, compared to 1987.

Research Question

What are the most effective educational tools in the management of diabetes patients, which result in lowering incidents of comorbidities, such as cardiovascular disease, foot ulcers, amputation, and frequent hospital remissions?

Design

This research study proposal will consist of descriptive quantitative methodologies which consist of patient questionnaires. Quantitative research provides a statistical approach in examining the relationship among variables, and conducts a correlation of variables with in the research.

Subject Selection

For this pilot study 10-20 individual aged 40-70 with long standing insulin dependency will be selected from acute, and long term care as well as a clinic associated with an acute care facility.

Setting for Study

This study will be conducted in health care settings that include acute, out-patient care, and long term care.

Data Collection

A questionnaire will be developed and provided to clients in outpatient clinics, inpatient (hospital admissions), and rehabilitation centers.

Proposed Data Collection Tools

Diabetic education which enhances one's self management remains important for improving quality patient care outcomes. Diabetic self- care management remains 98% of diabetic care, which can increase the quality of life. Self-care consists of individual dietary needs, regular exercise, control of blood sugar, awareness of insulin side effects, including avoidance of smoking, and alcohol. Please see questionnaire (Appendix A), ten to twenty individuals will be asked the following:

a) Standard demographics data

b) Medication- type, dosage, frequency, obtain prescriptions , having them fill, and side effects

c) General Health - symptoms, diet and exercise regimen

d) Glucose Testing

e) Diabetes Self-management Education

f) Medical Care- History of hospitalizations- ER visits because of diabetes , admissions due to diabetes, regular clinic visits

Data Collection Method

Data will be collected by utilizing a six domain questionnaire, in outpatient, inpatient, and long-term facilities. A diabetic self-management educational presentation will be conducted with 30 minutes group sections, including lectures, and pamphlets, after clinical and inpatient treatments. Patient's education will include content presentation, dietary behaviors, medication regiment, and side effects, exercise regimen, hygiene, and preventions of complications. Educational presentations including material and demonstrations will also be reviewed.

Data Analysis

Data collected in this research study will be examined utilizing statistical analysis procedures such as, percentages, and correlation analysis.

Ethical Concerns and Human Rights

Ethical codes and regulations have been developed to provide guidelines such as, selecting a study purpose, design and subject selection, collecting and analyzing data, interpreting study results, presenting and publishing study. The IRB application is presented for research study approval. Research study participant will receive a clear explanation in the type of research study performed, all participants associated in study, law and regulatory guidelines, including the HIPPA rights act. Research participant will also be given a written consent form, with clear explanation of consent and purpose. There are no patient treatments in this study, as this research study will examine, and evaluate the effectiveness diabetic type II self -care management, through educational materials. Patients will not be identifiable, as all data will be treated as group data.

Chapter 4 Results

Standard demographics data

Identifying characteristics of age, gender, and demographics were given in table 1. A total of 15 patients were surveyed and 11 Individuals completed the survey. Participants answered the survey, with ages that ranged from 41 to 79 years. It was determined that 60% of patients with diabetes type II were women, 80% were African American, 20% were Caucasian, 40% were ages 40-50 years, 60% were 51-79 years of age, 70% were married, 30% single, 90% were high school graduates, 50% some college, 30% were college graduates, 70% were non-smokers, and 60% used alcohol.

General Health

It was determined, a total of 70% of patients answered, they were generally in good health; three 30% of participants felt that they were in fair health, and two 20% felt that they were in poor health. A total of 50% of patients answered that they experienced symptoms of weakness, increase thirst, severe high blood sugar, nausea, and vomiting.70% of participants answered to experiences of weakness, shakiness, increase thirst, decrease appetite, and intense hunger.

It was determined that eight 80% of participants were diagnosed with diabetic co morbidities. Seven 70% of participants were diagnosed with hypertension, three 30% diagnosed with lung disease, three 30 % of participants with kidney disease, 50% diagnosed with high cholesterol, three 30% diagnosed with foot ulcers, and two 20% diagnosed with eye disease.

Diet. Participants were given individual diabetic education on meal planning, measuring proteins, fats, carbohydrates and water consumption. Seven 70% of participants answered to living with diabetes greater than five years, and acknowledged confusion in food choices for diabetic meal planning. It was determined that 90% of participants consumed breakfast, in which six 60% of participants answered to eating eggs, three 30% answered to eating yogurt and cheese, four 40% participants answered to drinking milk and meat (poultry).

Exercise. Participants were determined less active, in a weekly exercise regimen. A total of five 50% of participants participated in a weekly exercise regime, for 1 to 3 hours and six 60% of participant participated in no regular weekly exercise regimen. Seven participants were offered, and refused a free pass, to attend an exercise program, which included an inside track, water aerobics, and exercise equipment.

Glucose Testing

A total of 100% of participants checked their blood glucose 7 days a week. As previously stated, 11 of 15 participants completed the survey, in which 100% checked their blood glucose 7 days a week. Five 50% of participants checked their blood glucose once a day; four 40% of participants checked blood glucose four times a day and three 30% of participants checked their glucose daily. It was determined 70% of participants were aware of their HbA1c level. Eight 40% participants visited their doctors every 3 to 4 months and 20 % of participant HbA1c level was checked every 6 months. HbA1c levels ranged from 6.8 to 12.6.

Self-management Education

A total of 15 patients participated in the Survey, in which a total of 11 completed the questionnaire. Before each questionnaire, participants were given self-management education by a diabetic educator (certified registered nurse), and dietitian. Participants (in-patient) were given self- management education and diabetic outpatient clinics participants attended diabetic education self-management classes from 30 minutes, to over 2 hours. Diabetes self-management tools included lecture, and discussion on medication regimen, glucose monitoring, diet, exercise, calorie counting, understanding proteins, carbohydrates, fats, and water consumption. Participants participated in card games that identified foods, which contain proteins, carbohydrates, fats, and minerals.

After diabetic education, participants were asked for consent, to completing the questionnaire. Eighty percent, of participants stated, that they were asked the best method, in which they were able to learn, by the nurse. It was determined that 70% of participants , very often asked his, or her doctor questions about diabetes treatment, in which 60% of participants verbalized, they were not given clear education on diabetes self-care management, by their primary physician. Participants answered that were give a referral, by their primary care doctors, to participate in a diabetes self-management class. Three 30% of participants stated they participated in a diabetic self- management class, within 6 months. Nine 90% of participants said nurses gave self- management instructions, which included diet, exercise, medication regiment. It was determined 60% of participants with diabetes type II visited their primary physician 1 time within 6 months, 40% of participants visited their primary physician 0 times in 6 months.

Medication

Two 20%, of participants were on dietary management for type II diabetes; three 30% of participants took pills daily for diabetes management, 50% insulin dependent, which received insulin injections 2 times daily. It was determined 50% of participants consumed medication, for hypertension and 50% took pills, for elevated cholesterol levels. Participants had no complaints of filling prescriptions, obtaining prescription (insulin or pills). Ninety percent of participants stated that they experienced side effects, from insulin injections such as dizziness, during extra activities, and exercising.

Medical Care

It was determined 60% of participants with diabetes type II visited their primary physician 1 time within 6 months, five 50% of participants visited the emergency room in 6 months,50% of participants were hospitalized for diabetes related co-morbidities. Seventy percent of participants said the nurse examined their feet. Eighty percent of participants stated the physician examined their feet. Eight, 80% of participants, stated the physician examined their eyes.

Chapter Five

Discussion

Although, multiple research studies on self- care management have improved evidenced based care in individuals with type II diabetes. Further research remains imperative, concerning the ability of individuals diagnosed with diabetes, to received effective self-management education. This study provides evidence which suggests, diabetic self- management educational tools are not effective due to, lack of follow up diabetic self- management education, and healthcare interventions. Individuals diagnosed with diabetes require frequent monitoring, and visits to primary care physician every 3 months for HbA1c levels. Patients in this study did not receive routine diabetes self- management education and interventions, due lack of frequent monitoring. Only 30% of participants participated in a self-management diabetic class, in 6 months period, and over 60% had not visited their primary care physician in 3 months. Participant's HbA1c levels ranged from 6.8 to 12.6. American Diabetes Association's recommends glycosylated hemoglobin (A1c) levels remain 7 (blood glucose of 154), and below. HbA1c levels tell the average level, of a patient's blood glucose during a 3 months period. HbA1c levels remain imperative in self-management of diabetes. Experts have identified a direct link between high levels of blood glucose levels, to complications such as eye problems, hypertension, foot ulcers, and amputations. The reduction of blood glucose level can reduce eye problems by 70%, nerve damage by 60%, and kidney problems by 56% (American Diabetes Association, 2015). As such, the quality of life and disease prevention in individuals with type II diabetes will improve. Future research should be conducted in identifying, educational barriers to self- management of diabetes type II, such as patient access to improved education programs.

Conclusion/Recommendations

Diabetes remains one of most devastating chronic diseases within the United States. Professional nurses work diligently with communities to provide education, healthcare promotion, and information on preventive and restorative measures. As such, education remains the cornerstone, and an integral part of diabetes treatment, and self- management regime. The goal of diabetes self-management education is to optimize glycemic control, minimizing complications. In that event, diabetes self-management educational tools remain effective only, with frequent monitored A1C levels, frequent follow up interventions, that include three month visits with a primary care provider, and self-management education. As a result, education remains critical components in prevention of diabetes complications.

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Appendix A

Data Collection Tool

Table 1: Patient's Demographic Data

The questionnaire addresses 6 domains which included:

i. Standard demographics data

ii. General Health - symptoms, diet and exercise regimen

iii. Glucose Testing

iv. Medication- type, dosage, frequency, obtain prescriptions , having them fill, and side effects

v. Diabetes Self-management Education

vi. Medical Care -History of hospitalizations- ER visits because of diabetes , admissions due to diabetes, regular clinic visits

Appendix B

Questionnaire

Standard Demographics

Name: _____ today's Date: _____

Address: _____

City, state zip code: _____

Telephone: _____ Date of Birth: _____

Sex: Female____ Male____

Home Phone: _____ Work Phone: _____

1. Ethnic Origin (**check only 1**):

White not Hispanic____ Black not Hispanic____ Hispanic ____ Asian or Pacific Islander___ American Indian/ Alaskan____ Other_____

2. Please circle the highest year of school completed:

   1 2 3 4 5 6 7 8, junior, high school, some college, College- associate, baccalaureate, masters, PhD

3. Are you currently (**check one**): married_____ single____ widowed___

   Separated____ divorced____

4. Please indicate below which chronic condition (s) you have:

   Diabetes type 2___ Diabetes type 1_____ High cholesterol_____

   Heart disease____ Type of heart disease_____

Lung disease_____ Type of Lung disease_____

other condition Specify: _____

General Health

In general, would you say your health is?

Circle One:

a) Excellent…… 1

b) Very Good……..2

c) Good…….. 3

d) Fair……..4

e) Poor…….5

Symptoms

In The PAST WEEK, did you ever have any of the following symptoms……?

1. **Increase thirst? NO_____ Yes_____ Don't know___**
2. **Dry Mouth? NO_____ Yes_____ Don't Know____**
3. **Decrease appetite No_____ Yes_____ Don't Know____**
4. **Nausea or Vomiting No_____ Yes_____ Don't Know___**
5. **Frequent Urination at Night? No_____ Yes____ Don't Know____**
6. **Severe high blood sugar No_____ Yes____ Don't Know___**

7. **Shakiness or Weakness** **No_____** **Yes_____** **Don't Know____**

8. **Intense hunger** **No____** **Yes____** **Don't Know____**

Your Blood Glucose Testing

1. **Do you have a machine to measure your glucose level? Yes_____ No_____**
2. **On how many days in the last week did you measure your blood sugar Level? _____Days**
3. **On the days that you test your blood sugar, how many times do you test on an average? _____times**
4. **Do you know you A1c level? Yes_____ No_____ Level_____**

Physical Exercise

During the past week, how much time did you spend (during the entire week) on the following? (Please circle one number for each question)

Exercise/Regiment	**none**	**Less than 30min/wk.**	**30-60min/week**	**1-3 hours/week**
1.Stretching	**0**	**1**	**2**	**3**
2. Walk	**0**	**1**	**2**	**3**
3.Swimming or aqua exercise	**0**	**1**	**2**	**3**
4. Exercise equipment- bike	**0**	**1**	**2**	**3**
5.Aerobic exercise	**0**	**1**	**2**	**3**

Your Diet

1. How many times last week did you eat breakfast? _____times last week.

2. This morning did you eat any of the following foods for breakfast?

   Milk____ (1/2 cup) Cheese_____ yogurt___ eggs___ meat fish poultry___ beans___

Self-Care- Management

When you visit your doctor or nurse, how often do you do the following (please circle the number for each question)

	Never	**almost- never**	**sometimes**	**fairly often**	**Very often**	**always**
1. Prepare a list of question for the doctor or nurse?	**0**	**1**	**2**	**3**	**4**	**5**
2. Did the nurse give you instructions, on your diet, medications, Ac1 level, or exercise?	**0**	**1**	**2**	**3**	**4**	**5**
3. Did you attend a diabetic Self-management class?	**0**	**1**	**2**	**3**	**4**	**5**
4. Did you ask any questions about your treatment?	**0**	**1**	**2**	**3**	**4**	**5**
5. Did the nurse ask you, the best way that you learn?	**0**	**1**	**2**	**3**	**4**	**5**
6. Did the nurse or doctor ask you about, side effects from medicine or insulin?	**0**	**1**	**2**	**3**	**4**	**5**

Medications

1. Did you take pills in the last week for diabetes? Yes___ No_____

2. In the last week did you take insulin injections? Yes___ No_____

3. In the last week did you take pills for you blood pressure? Yes____ No_____

4. In the past week, did you take pills for cholesterol? Yes___ No_____

Medical Care

1. How many times did you visit your doctor in the last 6 months? **_____times.**

2. In the last 6 months, how many times did you go to the hospital emergency? **_____times.**

3. In the last 6 months, how many times were you hospitalized? **_____times.**

4. How many nights did you spend in the hospital? **_____times.**

5. How many times did the nurse or doctor examine your feet**? _____times.**

6. How many times did the nurse or doctor examine your eyes? **_____times.**

Other Comments

_____

_____

_____

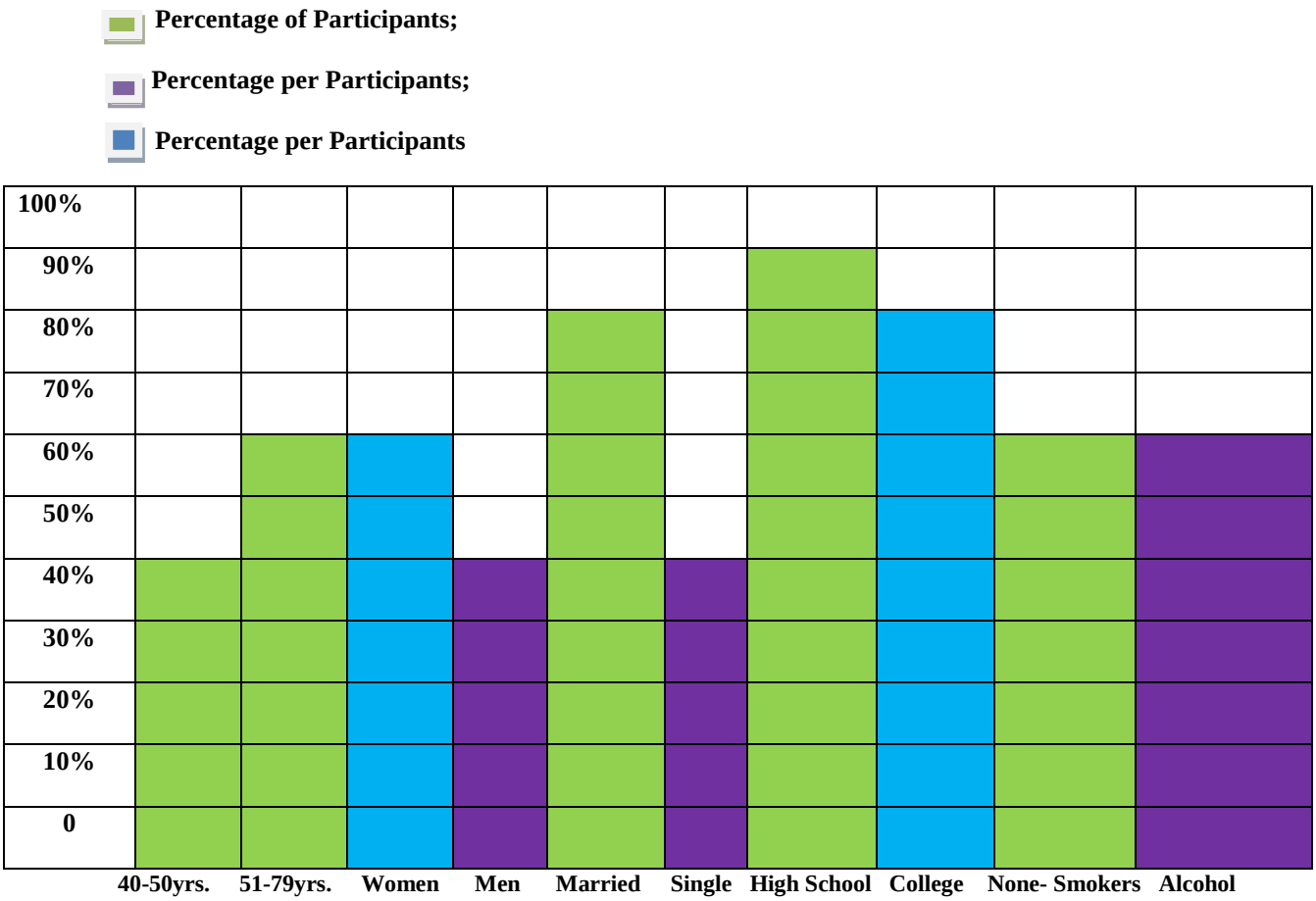
_____

Appendix C

Standard Demographics

Table 1

Patient Demographics per 11 Participants Surveyed

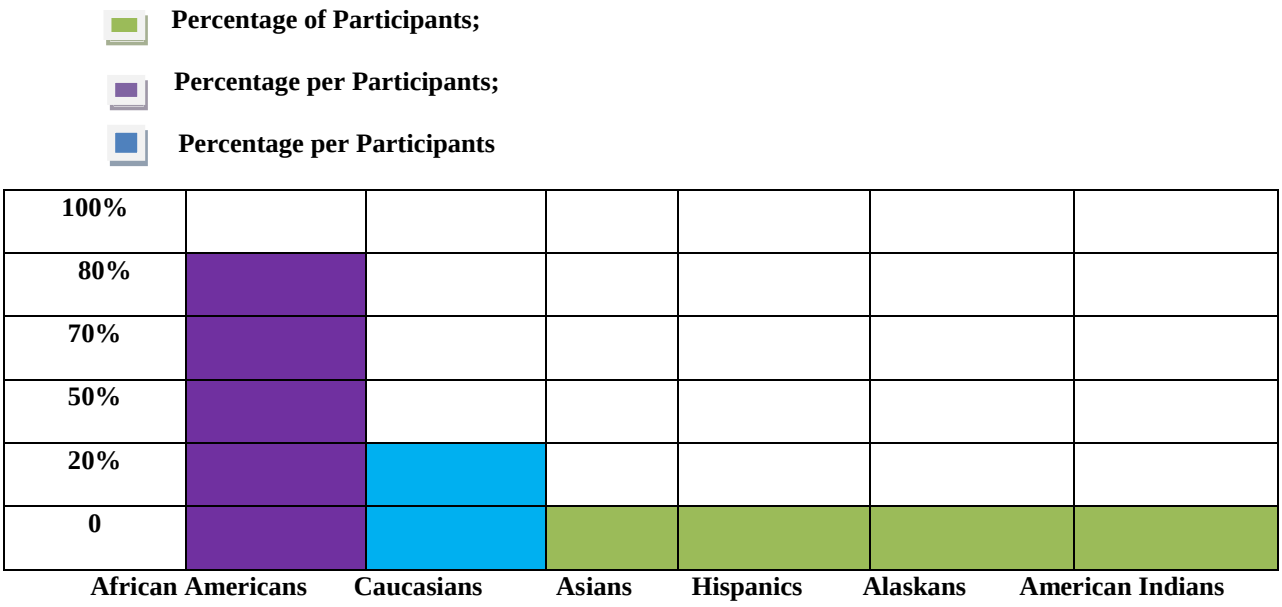


Appendix D

Standard Demographics

Table 2

Ethic Origin per 11 Participants Surveyed



Appendix E

General Health

Table 3

Health Practice and Co- Morbidities per 11 Participants Surveyed

Percentage per participants	Exercise 1 -3 hours	Diet Breakfast	Foot Ulcers	Hypertension	Lung Disease	Eye Problems	Kidney Disease
100%							
90%							
80%							
70%							
60%							
50%							
40%							
30%							
20%							
10%							
0							

Appendix F

Blood Glucose Test Levels

Table 4

Blood Glucose and HbA1c Levels Surveyed

HbA1c % Percent	**Blood Glucose mg/dl**	**HbA1c Level Per 2 Participants**	**HbA1c Level Per 6 Participants**	**HbA1c Level Per 3 Participants**	***Diabetes Target Range**	**Pre-diabetes Range**
12	298	**12.6**				
11.5	283					
11	269					
10.5	255					
10	240		**9.8**			
9.5	226					
9	212					
8.5	197					
8	183					
7.5	169					
***7**	*** 154**			**6.8**		
6.5	140					
6	126					
5	97					**5**

Appendix G

Self-Management Education

Table 5

Diabetes self-management care and education surveyed

Percentages per Participants	Never 0-10%	Almost never 20 -30%	Sometimes 30-40%	Fairly often 50-60%	Very Often 70-80%	Always 90-100%
Diabetic Self-management Class in 6 months						
Do you know your A1c level?						
Did the nurse give you instructions on diet, A1C level, exercise, medication?						
Did your nurse ask, the best way you learn?						
Did the nurse ask you about side effects from you medications						
Do you test you blood glucose 4 times daily?						

Appendix H

Medications

Table 6

Medication Management Surveyed

Percentage of Participants;

Percentage per Participants;

Percentage per Participants

Percentage %	20	30	40	50	60	70	80	90	100
Dietary Management for Diabetes Type ll									
Management by oral Medications									
Insulin Injections for Diabetes type ll									
Side Effects from insulin injections after activities									
Insulin injections required twice daily									
Oral medications for hypertension									
Oral medications taken for high cholesterol blood levels									

Appendix I

Medical Care

Table 7

Surveyed visits per hospital, emergency room, and primary care physician

Percentage of Participants;

Percentage per Participants;

Percentage per Participants

Percentage%	0	20	40	50	60	80	100
Primary Care visit in 6 months							
Hospitalization in 6 months							
ER visit in 6 months							
Feet exam by MD/Nurse							
Eyes exam by MD/Nurse							