



KNOWLEDGE OF DIABETES MANAGEMENT AND CONTROL BY DIABETIC PATIENTS

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Submitted to the Department of Nutrition and Food Engineering in the par partial fulfillment
of B.Sc. in Nutrition and Food Engineering

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APPROVAL

This project, titled “Knowledge of diabetes management and control by diabetic patients,” submitted by “**Sonia Akter Rumi**” to the Department of Nutrition and Food Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Nutrition and Food Engineering and approved as to its style and contents.

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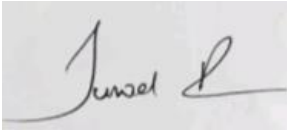
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DECLARATION

We hereby declared that, this project has been done by us under the supervision of **Juwel Rana**, Assistant professor, Department of Nutrition and Food Engineering (NFE), Daffodil International University. We also declare that neither this project or any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

Diabetes is the most common disorder in developing countries like Bangladesh. This study was focused on the “knowledge of diabetes management and control by diabetic patients.” The study employed a descriptive research approach with a 90-patient sample. A pre-made questionnaire was used to gather information on the participants eating habits, family situation, education level, and knowledge about diabetes. The results of the research showed that 75% of patients knew what diabetes was. 77.7% of patients didn’t know the main causes of diabetes. 72% of patients didn’t know how to control it. 83% didn’t know the complications of diabetes. However, 88.8% didn’t know how to take care of themselves, and 74.4% of patients didn’t know how much food they should intake per day. They don’t follow a healthy diet plan, and they have less knowledge about diabetes. They are also unaware of diabetes.

Keyword: Diabetes, Diabetes knowledge, control, Health education, and self management.

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CHAPTER 1

INTRODUCTION

Diabetes mellitus is a chronic disorder of glucose metabolism with serious clinical consequences. Microvascular endpoints (retinopathy, nephropathy, and neuropathy) and macrovascular endpoints (ischemic heart disease, stroke, and peripheral vascular disease) are among the multi-system consequences associated with diabetes. Due to the worldwide increase in the incidence of obesity over the past few decades, the prevalence of diabetes has been rising. Diabetes is a significant public health issue due to its early morbidity, mortality, decreased life expectancy, and associated financial, medical, and other consequences for patients with the disease, their caregivers, and the healthcare system. (Forouhi, et al., 2010)

It affects people of all ages in our society. At least 171 million people worldwide suffer from diabetes, with developed countries having a higher prevalence of the disease, according to the World Health Organization (2006). Diabetes is caused by an imbalance in the metabolism of carbohydrates, which leads to abnormalities in the metabolism of fat and protein. The condition is linked to disruptions in the synthesis and function of insulin, a hormone released by the pancreatic islets of Langerhans. In addition to insulin, aging, overweight, and several other hormones affect blood glucose levels by preventing glucose from entering the cells (Clavell, 2005). This causes hyperglycemia, which can lead to both acute and long-term consequences such as diabetic ketoacidosis, heart disease, stroke, kidney and eye problems, and neurological abnormalities. (Okolie, et al., 2009)

1.1 Objective of the study: The study's objective is to evaluate patients' knowledge of diabetes, its control, and management, with an emphasis on making educated decisions, working together with medical professionals, and problem-solving abilities.

- ✓ Determine the patients knowledge about diabetes mellitus.
- ✓ Determine the patients knowledge about diabetes management and control measures
- ✓ Determine of self care in Diabetes management and control.
- ✓ Identify health information received by the patients from the health care provide.

CHAPTER 2

LITERATURE REVIEW

The condition known as diabetes mellitus, or diabetes, is common, expensive, and significantly increases morbidity and mortality. Heart disease is the main cause of death; people with diabetes have death rates from heart disease that are roughly two to four times greater than those without diabetes. Moreover, diabetics have a two- to four-times higher risk of stroke. Diabetes is the primary cause of end-stage renal disease, accounting for around 40% of new cases, and the major cause of blindness in persons aged 20 to 74. Another significant issue is neuropathy, which affects 60% to 70% of diabetics and accounts for more than half of lower limb amputations in this population. Lastly, the percentage of pregnancies where the baby dies is twice as high in women with diabetes as in those without the illness. According to calculations in 1997, the overall (direct and indirect) costs of diabetes to the U.S. health care system were \$98 billion, reflecting the disease's remarkable impact on Americans' health . (Norris, et al., 2002)

Over the past five decades, globalization and changes in lifestyle have brought about significant changes to human behavior, governmental systems, the environment, and societies. Both in industrialized and developing nations, the number of people suffering from diabetes and obesity has significantly increased, with socially disadvantaged populations and Indigenous peoples typically bearing the brunt of this burden. Edwin Gale (Gale E., University of Bristol, personal communication) has dubbed diabetes “the diabetes apocalypse” because it is a global pandemic that poses a threat to both human health and global economies. Diabetes is ranked highly on the international health agenda. Diabetes and other non-communicable diseases have been on the rise, but until recently, neither international health organizations nor national governments took notice of this. When compared to funding for the management of communicable diseases, money for the prevention and control of such diseases—including diabetes—was given less priority. The WHO and the International Diabetes Federation have worked hard to update these figures on a regular basis since 1994, when the first predictions of a significant global rise in the number of diabetics were released. It was anticipated that 110 million individuals globally had diabetes in 1994, and by 2010, that figure was expected to rise to 239 million. (Zimmet, et al., 2014)

Individuals who have diabetes frequently experience difficulties managing their condition on a daily basis. And these are not insignificant expectations. Every day, patients have to manage their diabetes, making several choices in an often useless attempt to resemble a metabolic state without diabetes. Diabetes treatment, such as taking insulin, can have a significant impact on quality of life. It can have a positive impact by, for example, reducing symptoms of high blood sugar, or a negative impact by, for example, raising symptoms of low blood sugar. Living with diabetes typically has a significant psychological cost, which can therefore have an impact on self-care practices, long-term glucose management, the likelihood of long-term problems, and quality of life. Psychosocial concerns are now well established as being essential to effective

diabetes care. Self-management behaviors are frequently influenced by psychosocial factors, and psychosocial variables (like depression) are frequently better indicators of medical outcomes than physiologic and metabolic measures (like the presence of complications, BMI, and HbA1c) (Rubin, et al., 1999)

CHAPTER 3

METHODOLOGY

3.1 Study area:

Jashore diabetic somiti The Ahad diabetic and Health Complex was the study site for this investigation. This hospital is well-known for its exceptional performance in providing patients with counseling, record-keeping, and follow-up services.

3.2 Study population

Patients with diabetes from the Jashore diabetic somiti, Ahad diabetic and health complex comprised the study population. Interviews were used to evaluate 90 patients in total.

3.3 Sampling size estimation:

The Jashore diabetic somiti Ahad diabetic and health complex were the study's cross-sectional analytical study sites. Using a random sampling technique, I employed a total of 90 patients.

3.4 Data collection

The questionnaire was the tool utilized to gather data. A survey was created to gather information about the patients age, gender, family situation, socioeconomic status, education level, knowledge about diabetes and knowledge of self care, dietary habits.

3.5 Data analysis

To examine the data, I used statistical techniques.

3.6 Ethical consideration:

The competent authorities of the Diabetic Somiti Ahad Diabetes and Health Complex reviewed the proposal to make sure it complied with the legal and ethical standards for scientific research. As a result, permission was given to carry out the investigation. The patients granted their consent to participate in the trial after receiving complete information about it.

CHAPTER 4

RESULT AND DISCUSSION

Result: I found the following findings after surveying 90 hospitalized diabetes patients and comparing different data:

Table 4.1 : Age of patients

Age of group	Frequency	Percentage %
Less than 30 years	12	13.33
30-40 years	33	36.66
40+ years	45	50
Total	90	100

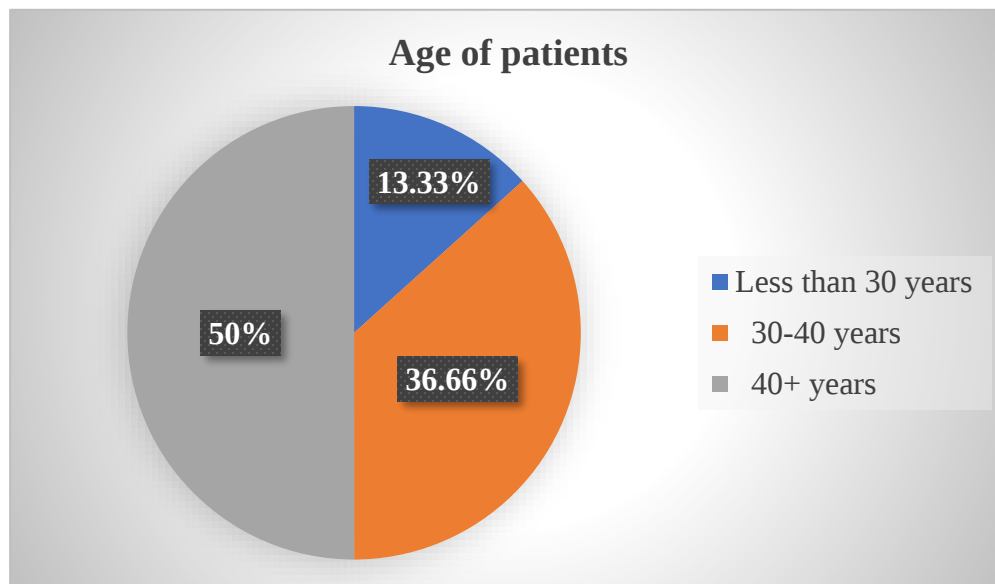


Figure 4.1: Age of patients

4.1 Figure shows that 13.33% of patients were younger than 30 years. 36.66% were between 30 and 40 years old. 50% of the patients were 40 years of age or older.

Table 4.2 : Gender of patients

Gender of group	Frequency	Percentage %
Female	57	63.33
Male	33	36.66
Total	90	100

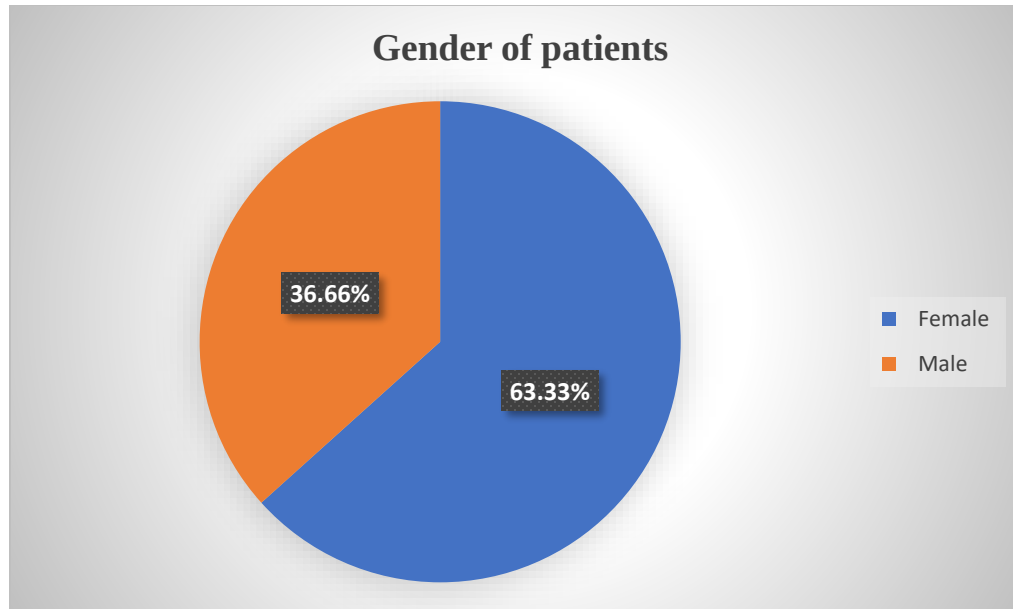


Figure 4.2 : Gender of patients

4.2 Figure shows that 63.33% of patients were female & 36.66% were male.

Table 4.3 : Educational qualifications of diabetic patients

Education level	Frequency	Percentage %
Primary	25	27.77
SSC	45	50
HSC	13	14.44
Honors	7	7.77
Total	90	100

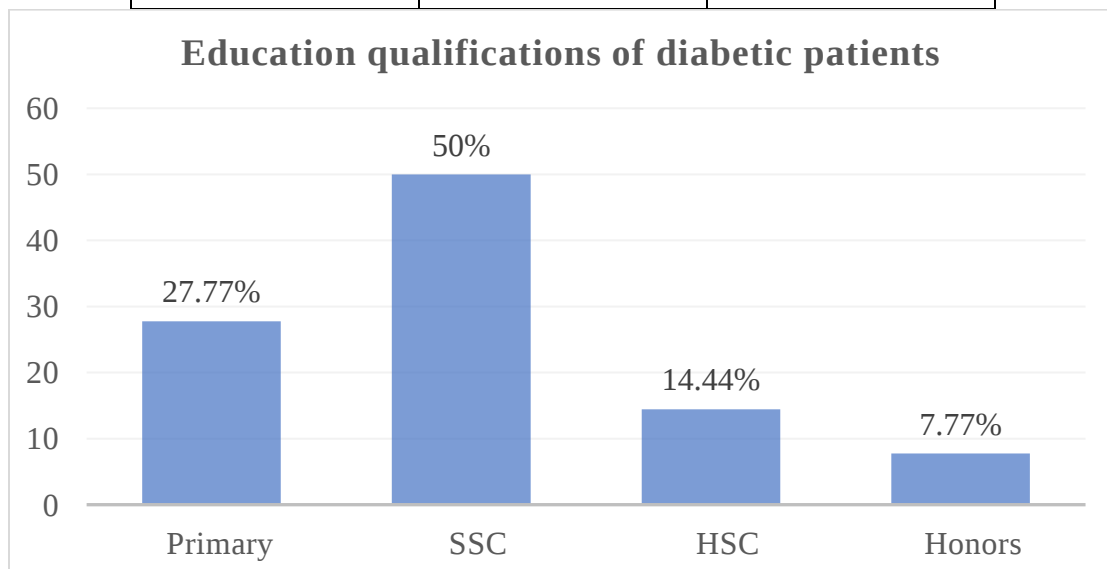


Figure 4.3 : Education qualifications of diabetic patients.

4.3 Figure shows that of the educational qualifications of diabetic patients, 27.7% received primary education. 50% of patients received SSC education, 14.44% received HSC education, and 7.77% received honors education.

Figure 4.4 : profession of patients

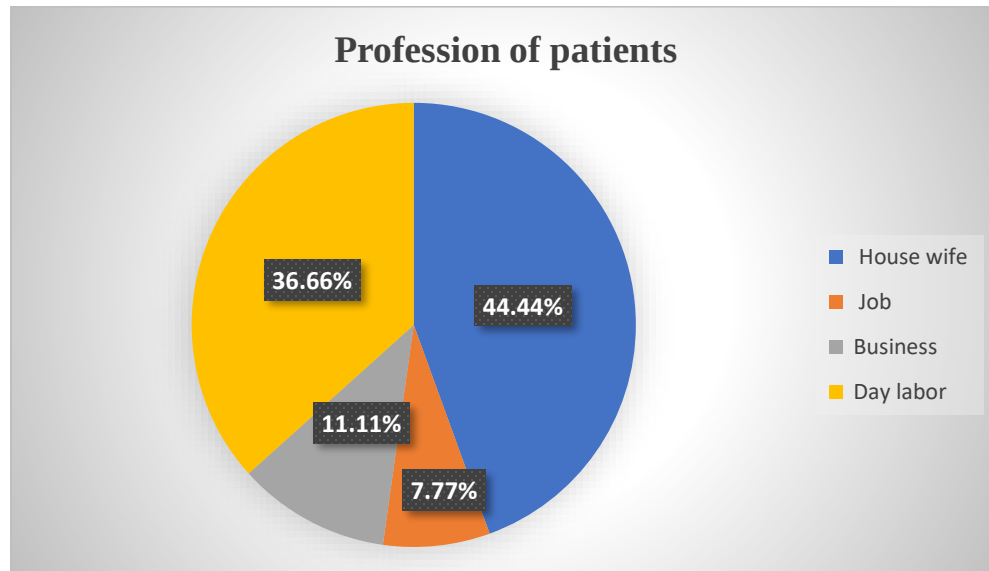


Figure 4.4 : Profession of patients

4.4 Figure shows that 44.44% of patients were house wives, 7.77% were job holders, 11.11% were businessmen, and 36.66% were day laborers.

Figure 4.5 : Family class

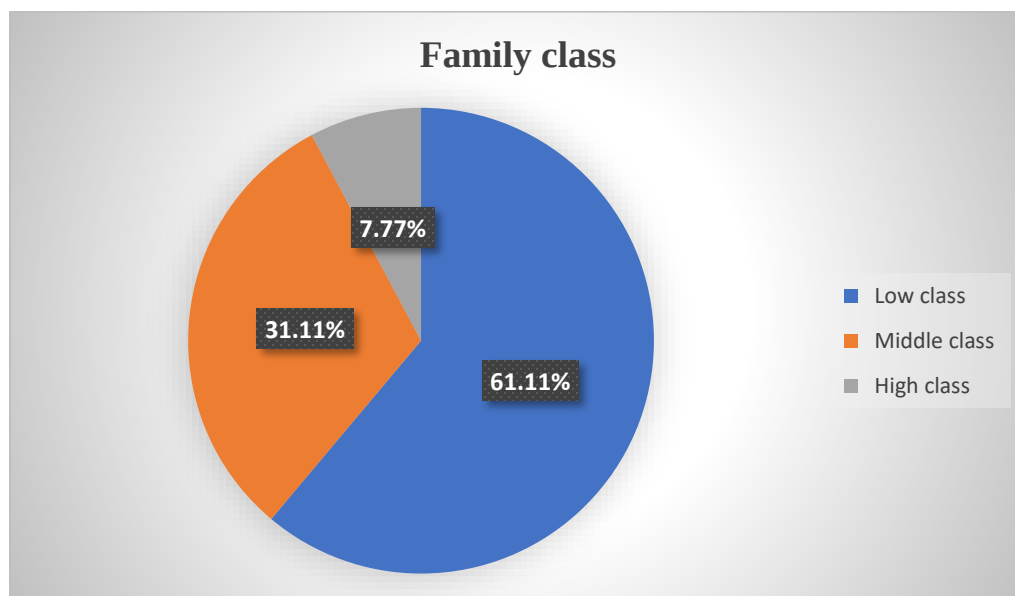


Figure 4.5 : Family class

4.5 Figure shows that, 61.11% patients were from lower class, 31.11% patients were from middle class and 7.77% patients were from higher class.

Figure 4.6 : Responses on what diabetes is

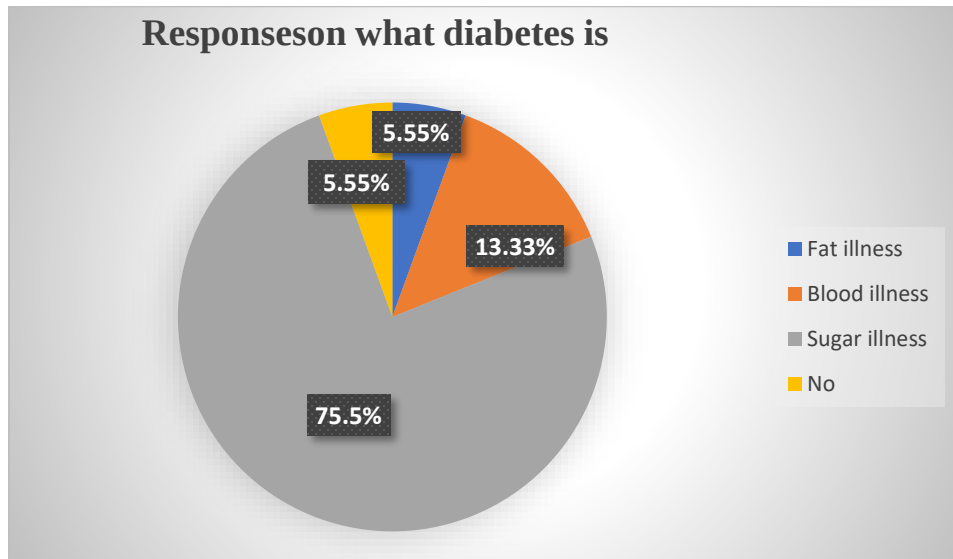


Figure 4.6 : Responses on what diabetes is

4.6 figure shows that, 5.55% patients were response diabetes is fat illness, 13.33% were response diabetes is blood illness, 75.5% patients were response diabetes is sugar illness, and 5.55% patients were responded, didn't know

Figure 4.7 : Responses to symptoms

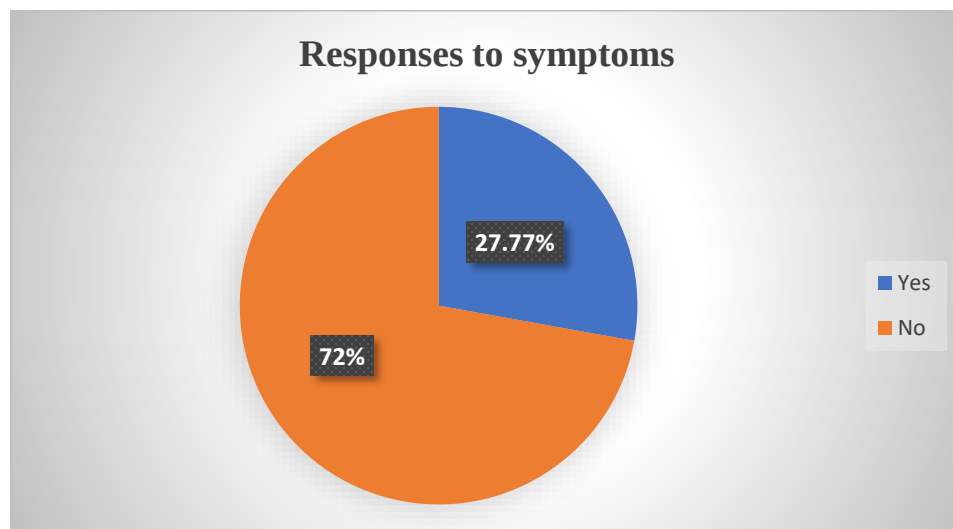


Figure 4.7 : Responses on symptoms

4.7 figure shows that 27.77% of patients knew the symptoms of diabetes, and 72% of patients didn't know the symptoms of diabetes.

Figure 4.8 : Responses on types

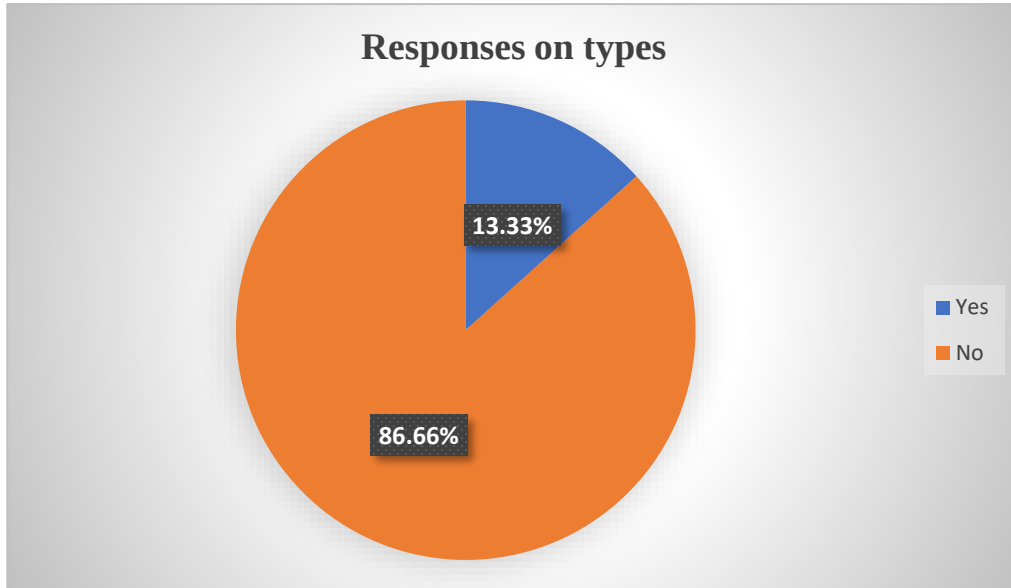


Figure 4.8 : Responses on types of diabetes

4.8 figures show that 13.3% of patients knew the types of diabetes, and 86.6% of patients didn't know the types of diabetes.

Table 4.9 : Responses to the main causes of diabetes

Option	Frequency	Percentage %
Eating a lot of starchy food	5	5.55
Hormonal dysfunction specially lack of insulin	5	5.55
Eating a lot of sugar	10	11.11
Don't know	70	77.7
Total	90	100

4.9 table shows that, 5.55% patients were responded eating a lot of starchy food, 5.55% were responded hormonal dysfunction specially lack of insulin, 11.11% were responded eating a lot of sugar, & 77.7% patients didn't know the main causes of diabetes.

Table 4.10 : Responses on how to control it

Option	Frequency	Percentage %
Avoid intake sugar food	8	8.88
Avoid intake protein food	5	5.55

Avoid intake carbohydrate food	5	5.55
Take herbal remedies alone	7	7.77
Don't know	65	72.22
Total	90	100

4.10 table shows that 8.88% of patients knew diabetes can be controlled by avoiding sugary foods, 5.55% knew to avoid protein foods, 5.55% knew to avoid carbohydrate foods, 7.77% knew to take herbal remedies alone, and 72.22% didn't know how to control it.

Figure 4.11 : Responses on reducing carbohydrate

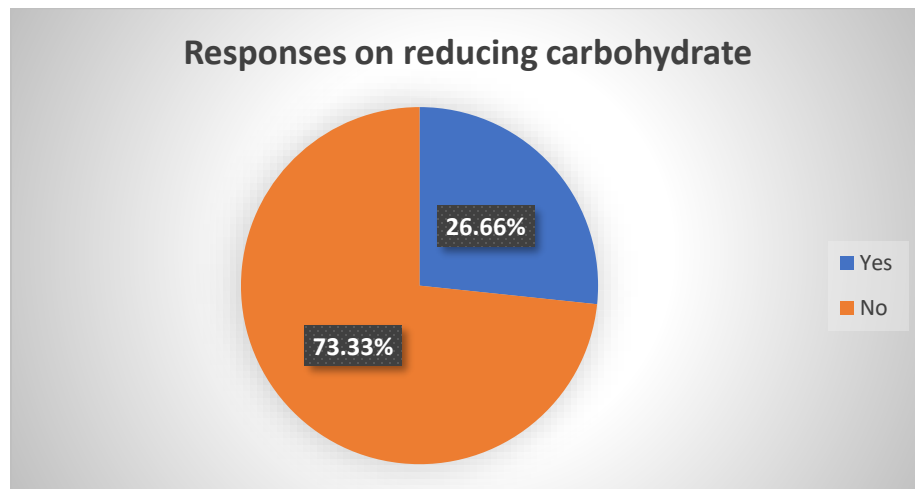


Figure 4.11: Responses on reducing carbohydrate

4.11 figure shows that, 26.66% patients knew that reducing carbohydrate intake can reduce diabetes, but 73.33% didn't know it.

Figure 4.12 : Responses to the complication

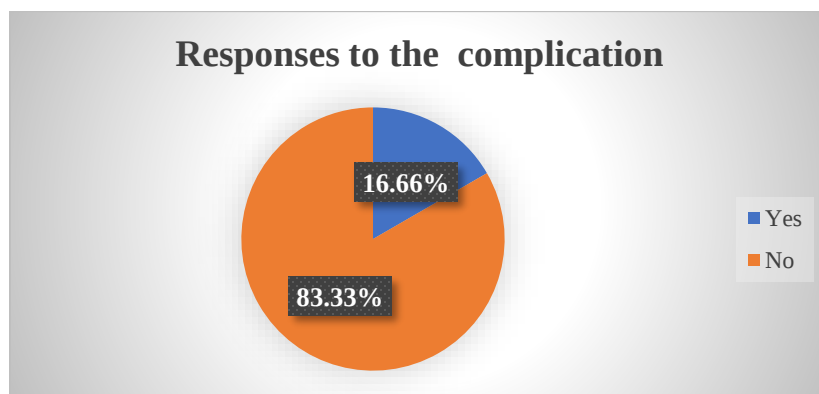


Figure 4.12 : Responses on complication

4.12 figure shows that 16.66% of patients knew the complication and 83.33% didn't know the complications.

Figure 4.13 : A report on how diabetes can causes eye diseases

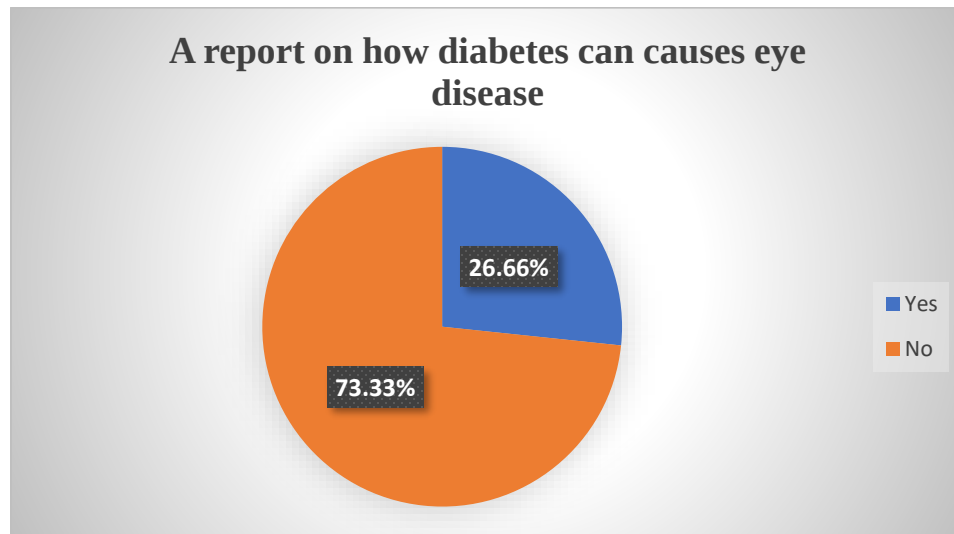


Figure 4.13 : A report on how diabetes can cause eye disease

4.13 figure shows that 26.66% of patients knew diabetes could cause eye diseases, and 73.33% didn't know diabetes could cause eye diseases.

Figure 4.14 : A report on how diabetes can causes periodontitis

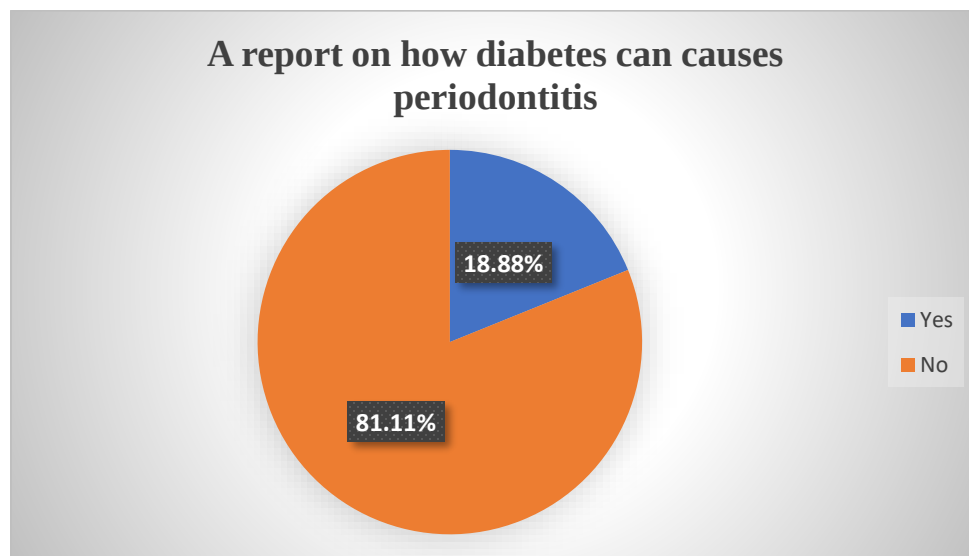


Figure 4.14 : A report on how diabetes can cause periodontitis

4.14 figure shows that 18.88% of patients knew diabetes could cause periodontitis, and 81.11% didn't know diabetes could cause periodontitis.

Figure 4.15 : Responses to self- care / take care measures

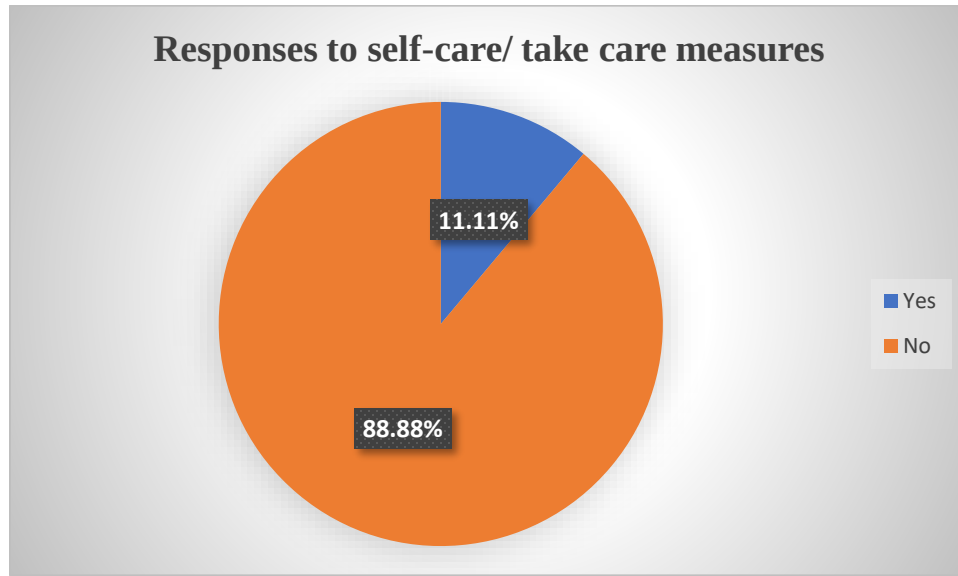


Figure 4.15 : Responses to self-care/ take care measures

4.15 figure shows that 11.11% patients knew take care themselves & 88.88% patients didn't know take care themselves.

Table 4.16 : Responses to diabetes testing at home

Option	Frequency	Percentage %
Test strip	5	5.55
Test tablets	5	5.55
Testing with tip of tongue & avoiding on the ground & observe it ants will come around it	7	7.77
Don't know	63	70
Total	90	100

4.16 table shows that 5.55% of patients knew the use of a test strip, 5.55% knew the use of tablets, and 7.77% of patients used testing with the tip of their tongue, avoiding the ground, and observing ants that would come around it, but 70% of patients didn't know how to do a diabetes test at home.

Table 4.17 : A report on regular exercise is important

Option	Frequency	Percentage %
Yes	35	38.88
No	55	61.11

Total	90	100
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4.17 table shows that 38.88% of patients knew regular exercise was important, but 61.11% didn't know regular exercise was important.

Table 4.18 : Report on having a special diet chart.

Option	Frequency	Percentage %
Yes	13	14.44
No	77	85.55
Total	90	100

4.18 table shows that 14.44% of patients have a special diet chart, but 85.55% have no special diet chart.

Table 4.19 : Responses on how much food should be consumed per day

Option	Frequency	Percentage %
A lot of protein foods	4	4.44
A lot of carbohydrate foods	7	7.77
A lot of fatty foods	5	5.55
A lot of vegetables & fruits & whole grain	7	7.77
Don't know	67	74.44
Total	90	100

4.19 table shows that 4.44% of patients knew a lot of protein foods should be consumed per day as diabetic patients, 7.77% of patients knew a lot of carbohydrate foods should be consumed per day as diabetic patients, 5.55% of patients knew a lot of fatty foods should be consumed per day as diabetic patients, and 7.77% knew a lot of vegetables, fruits, and whole grains should be consumed per day as diabetic patients, and 74.4% didn't know how much food they should intake per day as diabetic patients.

Table 4.20 : Report on taking outside food

Option	Frequency	Percentage %
Once a week	35	38.88
2-3 days in a week	29	32.22
Never	26	28.88
Total	90	100

4.20 table shows that 38.88% of patients were taken outside food once a week, 32.22% were taken outside food 2-3 days in a week, and 28.8% were never taken outside food.

Table 4.21: Report on having milk or dairy goods

Option	Frequency	Percentage %
Yes	10	11.11
No	80	88.88
Total	90	100

4.21 table shows that 11.11% of patients drink milk every day. But 88.88% of patients didn't drink milk every day.

Diet chart for diabetic patients

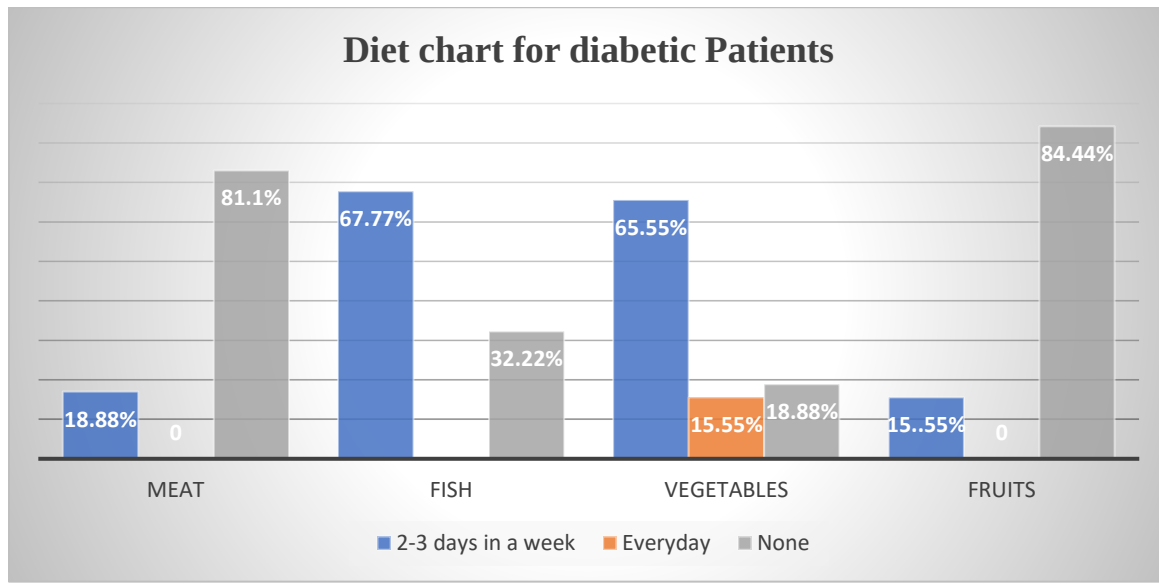


Figure 4.22 : Diet chart for diabetic patients

4.22 figure shows that There were 81.1% of patients who had not taken meat in a week, and 18.8% of patients had taken meat 2-3 times in a week Furthermore, 67.77% of people ate fish two to three times a week, while 32.2% never did. Of the patients, 15.55% consumed veggies every day of the week and 65.55% consumed them two to three times a week. Vegetables were not consumed by 18.88% of patients once a week. Lastly, 15.55% of patients reported eating fruits two to three days a week, whereas 84.44% reported not eating fruits even once a week.

4.23 Discussion:

The study revealed that 13.33% of the patients were under 30 years old, 36.6% were between 30 and 40 years old, and 50% were beyond 40 years old. Every patient age group took part in the research. The direct participants in this study were 63.33% female and 36.66% male patients.

27.7% of patients had only completed elementary school. Only 7% of patients finished their honors education, compared to 50% who earned SSC education and 14% who earned HSC

education. Thus, SSC education was attained by the majority of the patients in our study. A housewife made up about 44.4% of the patients. 7.77% of patients had jobs, 11.11% had businesses, and 36.66% worked as day laborers. 31.11% of patients were middle class, 7.77% were upper class, and 61.11% of patients were low class. It shows that the majority of them were poor.

The majority of patients (75.5%) are aware that diabetes is a sugar disease and know what it is. Given that some of them were already experiencing it, this result was anticipated. Regarding the primary causes of diabetes, 77.7% of patients were unaware of this information.

The majority of patients (72%) were unaware of how to handle it. However, 88.8% of the patients were unaware that diabetes could cause complications. Among 73.3 percent and 81.11 percent of patients, they were unaware that diabetes can cause eye diseases and periodontitis. This demonstrated ignorance. Patients knew nothing about how to take care of themselves, according to 88.8% of the patients.

However, when asked about their knowledge of self-care or how to test for diabetes at home, 70% of the patients said they didn't know. Other patients said they used non-scientific methods, such as testing urine with the tip of the tongue and urinating on the ground to see if ants would come. They know less about taking care of themselves or testing for diabetes at home.

The majority of patients (74.4%) didn't know how much food to intake per day. Milk taker Patients were (11.11%) and non-takers were (88.88%) They don't take proper care of their nutrition and diet. 81.1% of patients who had not taken meat in a week, and 18.8% of patients had taken meat 2-3 times in a week. Furthermore, 67.77% of patients ate fish two to three times a week, while 32.2% never did. Of the patients, 15.55% consumed veggies every day of the week and 65.55% consumed them two to three times a week. Vegetables were not consumed by 18.88% of patients once a week. Lastly, 15.55% of patients reported eating fruits two to three days a week, whereas 84.44% reported not eating fruits even once a week.

It's noticeable that patients don't always follow recommended diets or use caution when eating. It is brought on by a lack of knowledge, the state of the economy, and access to counseling.

CHAPTER 5

CONCLUSION & RECOMMENDATION

5.1 Conclusion

The majority of diabetic patients are aware of what diabetes mellitus is, but they are typically ignorant of its causes, symptoms, controls, self-care, and self-monitoring, according to study results. The diabetes clinic was mainly established as an information center to help diabetic people. Nurses, physicians, dietitians, and other members of the health team should work together to help these diabetic patients lead healthy lives and should provide them with the necessary information whenever possible.

Making lifestyle adjustments, such as eating a well-balanced diet, exercising regularly, and controlling your weight, can help your body use insulin more efficiently and improve the prognosis of diabetes.

5.2 Recommendation:

The Jashore Diabetes Somiti Ahad Diabetic and Health Complex should build a well-structured teaching program for diabetic patients as soon as possible. In order to avoid complications, health care providers should take the time to thoroughly explain diabetes, its causes, and how to prevent it through preventative measures. In order to prevent diabetes, family members of diabetic patients should also receive advice on leading a healthy lifestyle. It is important to set up programs like activity monitoring so they can learn how to properly check their blood sugar levels and manage their time.

Patients with diabetes should be educated on a variety of topics, including proper cooking techniques, dietary habits, diet patterns, and the nutritional value of food and calories. Diabetic patients should avoid sweet fruit and sweet food and should increase their intake of fruit and vegetables.

We need to better observe how diabetes problems can be diagnosed more easily

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QUESTIONNAIRE

1	Patient I'd		Survey report
2	Patient name		
3	Age	☐ Less than 30 years ☐ 30-40 years ☐ 40+ years	☐ 1 ☐ 2 ☐ 3
4	Gender	☐ Male ☐ Female	☐ 1 ☐ 2
5	Education background	☐ Primary ☐ SSC ☐ HSC ☐ Honors	☐ 1 ☐ 2 ☐ 3 ☐ 4
6	Profession	☐ House wife ☐ Job ☐ Business ☐ Day labor	☐ 1 ☐ 2 ☐ 3 ☐ 4
7	Family class	☐ Lower class ☐ Middle class ☐ Higher class	☐ 1 ☐ 2 ☐ 3
8	Do you know, what is diabetic?	☐ Fat illness ☐ Blood illness ☐ Sugar illness ☐ Don't know	☐ 1 ☐ 2 ☐ 3 ☐ 4
9	Do you know symptoms of diabetic?	☐ Yes ☐ No	☐ 1 ☐ 2
10	Do you know types of diabetic?	☐ Yes ☐ No	☐ 1 ☐ 2
11	Do you know, what is the main causes of diabetic?	☐ Eating a lot of starchy food ☐ Hormonal dysfunction especially lack of insulin ☐ Poison ☐ Don't know	☐ 1 ☐ 2 ☐ 3 ☐ 4
12	Do you know how to control it (diabetics)	☐ Avoid intake sugar food ☐ Avoid intake protein food ☐ Avoid intake carbohydrate food ☐ Take herbal remedies alone ☐ Don't know	☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

13	Do you know that, reducing carbohydrate intake can reduce diabetes?	☐ Yes ☐ No	• 1 • 2
14	Do you know, what are the complications of diabetes?	☐ Yes ☐ No	• 1 • 2
15	Do you know diabetes can causes eye disease (make blind) ?	☐ Yes ☐ No	• 1 • 2
16	Do you know diabetes can causes periodontitis?	☐ Yes ☐ No	• 1 • 2
17	Do you know, how should diabetics take care of themselves	☐ Yes ☐ No	• 1 • 2
18	Do you know, how to test diabetic at home	☐ Test strip ☐ Test tables ☐ Testing with tip of tongue & avoiding on & observe it ants will come around it ☐ Don't know	• 1 • 2 • 3 • 4
19	Do you feel regular exercise is important?	☐ Yes ☐ No	• 1 • 2
20	Do you think that, you should have a special diet chart?	☐ Yes ☐ No	• 1 • 2
21	Do you know, how much food should intake a diabetic patient per day?	☐ A lot of protein foods ☐ A lot of carbohydrate food ☐ A lot of fatty foods ☐ A lot of vegetables, fruits, whole grain ☐ Don't know	• 1 • 2 • 3 • 4 • 5
22	Do you eat outside food or restaurant food ?	☐ Once a week ☐ 2-3 days in a week ☐ Never	• 1 • 2 • 3
23	Do you have milk or dairy goods everyday?	☐ Yes ☐ No	• 1 • 2
24	How many days do you eat meat in a week?	☐ 2-3 days in a week ☐ Everyday ☐ None	• 1 • 2 • 3
25	How many days do you eat fish in a week?	☐ 2-3 days in a week ☐ Everyday ☐ None	• 1 • 2 • 3

26	How many days do you eat vegetables in a week?	☐ 2-3 days in a week ☐ Everyday ☐ None	☐ 1 ☐ 2 ☐ 3
27	How many days do you eat fruits in a week?	☐ 2-3 days in a week ☐ Everyday ☐ None	☐ 1 ☐ 2 ☐ 3

SYNOPSIS

SYNOPSIS OF THE PROPOSED PROJECT FOR “KNOWLEDGE OF DIABETES MANAGEMENT AND CONTROL BY DIABETIC PATIENTS”

Title of the work: “Knowledge of diabetes management and control by diabetic patients”

Introduction: Diabetes mellitus is a disorder in which the body does not produce enough or respond normally to insulin, causing blood sugar (glucose) levels to be abnormally high. The main causes of the diabetes are overweight, obesity, and physical inactivity. Diabetes self-management education is “to give people with diabetes the knowledge, skills, and confidence to accept responsibility for their self-management.” Diabetes self-management involves making informed decisions, collaborating with healthcare providers, and problem solving to improve clinical outcomes, health status, and overall quality of life. People with diabetes need the knowledge and skills, but also the ability to apply that knowledge to manage their diabetes each day. The purpose of the research is to assess the patients knowledge about diabetes, It’s management and it’s control.

Key word: Diabetes, Diabetes knowledge, control, Health education, and self management.

Objectives of this work :

- Determine the patients knowledge about diabetes mellitus.
- Determine the patients knowledge about diabetes management and control measures.
- Determine of self care in Diabetes management and control.
- Identify health information received by the patients from the health care provide

Research Methodology: knowledge of diabetic management and control by diabetic patients. Research Methodology are

1.Knowledge level of diabetes: By asking the patients about their knowledge level of diabetes, we can understand their knowledge about diabetes. **2.** Questionnaire about control and the complications of diabetes: By asking the patient about his or her problem and his or her knowledge about control and the complications of diabetes,we can understand his or her knowledge and awareness about diabetes. **3.** A self-care-related questionnaire: with it, we will understand the patient’s knowledge about self-care measures. **4.** Carbohydrate intake-related questionnaire: carbohydrate level in the body is one of the most important factors for a diabetic patient. By asking the patients about their carbohydrate intake, we will have a clear picture of their awareness of consuming carbohydrate. Besides, by questioning them, it can be known how much he or she takes CHO in a single day. **5.** Healthy food intake-related question: By asking the patients about their healthy food intake, we can understand their knowledge about taking healthy food.

Ethical considerations: The study will comply with ethical standards, guaranteeing participants' informed consent and upholding anonymity. Before beginning data collection, ethical clearance from the appropriate institutional review board is required.

Outcome of the work: We will understand patients knowledge about diabetes mellitus and their knowledge about diabetes management and control measures.

Time frame:

Major activities	Duration (Months)
Literature review	1
Questionnaires ready	0.5
Topic selection	0.5
Data collection	0.5
Data analysis	0.5
Paper writing & submission	1
Total duration of the project	4

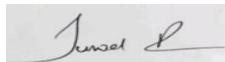
Conclusion: Lifestyle adjustments like a balanced diet, regular exercise, and weight management can enhance insulin efficiency and improve the prognosis of diabetes. To provide Self-management training to people with diabetes and their families to achieve and maintain good health and minimize complications.

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