ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICE OF DIETARY PATTERN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS IN DY PATIL HOSPITAL NERUL.

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ABSTRACT

Background: All over the world, Type 2 Diabetes Mellitus (T2DM) is becoming more common. Complications such as neuropathy, cardiovascular problems, and retinopathy place a heavy burden on both individuals and healthcare systems. It's important to understand diabetes, how to manage it, and what you can do to avoid it. Patient outcomes are impacted by differences in diabetes knowledge, attitude, and practice (KAP) based on socioeconomic and cultural factors. The two most important things in managing diabetes are dietary adjustments and more exercise. Future endeavors will be informed by research that attempts to evaluate community awareness of diabetes and its influence on preventative and management behaviors.

Objective: Analyzing patients with type 2 diabetes mellitus's knowledge, attitudes, and current dietary habits entails a thorough evaluation intended to ascertain how well-informed people are about their illness, how they see managing it, and what kind of food they currently consume. Examining elements, including patients' comprehension of type 2 diabetes mellitus's causes, symptoms, complications, and available treatments, is part of this. Furthermore, it entails investigating the attitudes, beliefs, and affective reactions of patients towards their diagnosis, in addition to their opinions regarding self-management and following medical advice. Analyzing food preferences, serving sizes, meal schedules, and patient adherence to dietary recommendations are also included. In order to improve patient education, support, and intervention techniques to improve type 2 diabetes mellitus management and outcomes, healthcare professionals can evaluate these factors in order to identify their strengths, shortcomings, and opportunities for improvement.

Methodology: The purpose of this study was to evaluate the dietary habits, attitudes, and level of knowledge among Type 2 Diabetes patients at D.Y. Patil Hospital in Navi Mumbai. A total of 100 patients made up the sample, and the study lasted six months. Before any data was collected, ethical approval was received. A standardized questionnaire encompassing biographical data, knowledge, attitudes, habits, and frequency of food intake was used in the study. SPSS was used to code, analyze, and compile the data that came from patient assessments. Descriptive statistics for handling missing values, reporting through tables, lists, and figures, and demographic analysis were all included in the analysis.

Result: The study evaluates the demographics, knowledge, attitudes, and habits of T2DM patients. It emphasizes the necessity for tailored interventions to enhance nutritional knowledge and practices. Despite constraints such as a limited sample size, the major conclusions are: 37% report family history of T2DM, with a significant portion diagnosed for over 10 years; 21% report addictions, with alcohol being prevalent; knowledge gaps exist, especially in choosing whole fruits over juices; most recognize the importance of exercise but struggle with dietary

modifications; mixed attitudes towards avoiding salts and sugars; low engagement in regular exercise despite medication usage; and varied consumption of fruits, vegetables, cereals, and legumes, with common.
Conclusion: *The study, conducted at D.Y. Patil Hospital in Navi Mumbai, observed Type 2 Diabetes Mellitus (T2DM) patients' dietary habits, attitudes, and practices. Key findings include the impact of family history, the need to address lifestyle factors other than nutrition, and the identification of gaps in portion management and food selection. The study emphasizes the importance of individualized management strategies and focused interventions for T2DM patients to promote healthy eating habits, thereby enhancing disease management and quality of life*

Keyword: - *Knowledge, type 2 Diabetes mellitus, attitude, practice, patients, dietary pattern..*

1. INTRODUCTION

Type 2 Diabetes Mellitus, a common metabolic condition, involves issues with insulin production and response in the body. The intricate control of processes like insulin synthesis, release, and tissue reaction is crucial for metabolic health. Both genetic makeup and lifestyle factors like inactivity and poor diet contribute to the prevalence of type 2 diabetes. Ethnicity also plays a role, influencing susceptibility and sometimes clustering risk factors for cardiovascular problems such as high blood pressure, insulin resistance, and abnormal lipid levels.[1] Diabetes Mellitus (DM), a long-term metabolic non-communicable disease (NCD), is on the rise worldwide. About 415 million adults had DM in 2015; by 2040, that number is expected to increase to 642 million. More than 95% of adult diabetic individuals have Type 2 Diabetes Mellitus (T2DM). Approximately 69 million individuals worldwide suffer from diabetes mellitus, placing India at the center of the disease's global epidemic.[2] The complications of DM, such as retinopathy, diabetic foot, renal problems, stroke, heart issues, neuropathy, hypertension, and sexual dysfunction, are increasingly prevalent, imposing a significant burden on individuals and the healthcare system. Therefore, it's crucial for patients and their families to understand the fundamentals of diabetes, including the importance of proper glycemic control, personalized treatment plans, and preventive measures for effective management. [3,4] Knowledge is essential for the early detection and prevention of any future diseases. DM patients must have positive knowledge, attitude, and practice (KAP). KAP about diabetes varies substantially depending on cultural norms, beliefs, and socioeconomic circumstances. Acquiring knowledge about diabetes might avert the impending chronic comorbidities of DM, which considerably affect the patient's quality of life. [5]. According to preliminary research, chronic diseases can increase morbidity and mortality rates. Based on initial findings, a gap or lack of knowledge in understanding chronic illnesses may lead to higher rates of morbidity and mortality. [6]

Dietary changes and increased physical activity are the mainstays of a type 2 diabetes control and complications prevention strategy. Information can encourage people to seek appropriate care and treatment, help them determine their risk of developing diabetes, and help them adopt a more positive outlook on the illness. To assess the overall characteristics of diabetic patients, including their baseline knowledge, attitude, and practice (KAP) regarding diabetes. Eating patterns, also known as dietary patterns, are combinations of different meals or food groups that define the links between nutrition, health promotion, and illness prevention. A variety of eating styles (combinations of distinct sustenance or nutrition classes) have been shown to be effective in diabetic treatment.[7] This research aimed to evaluate how aware communities are about diabetes and how this awareness affects their attitudes and behaviours regarding preventing and managing the disease and its complications. The results will pinpoint areas where knowledge is lacking and shed light on community behaviours toward diabetes, informing the creation of prevention initiatives in the country

2. METHODOLOGY

2.1 Study design- The study Observational Study (KAP) Questionnaire

2.2 Study setting: Community-based study involving Type 2 Diabetic patients in D Y Patil hospital – Navi Mumbai (men-Women)

2.3 Study duration: The study was for 6 months The Ethical clearances was obtained from the Institutional Ethical committee prior to data Collection.

2.4 Sample size: 100 [Individuals from D.Y. Patil University and fulfilling inclusion criteria will be included]

2.5 Selection Criteria:

INCLUSION CRITERIA • Type 2 Diabetic patients in DY Patil hospital – Navi Mumbai (men – Women) EXCLUSION CRITERIA • Patients with other types of Diabetes (e. g. Type I diabetes, Gestational diabetes) • Pregnant women. • Lactating women

2.6 Development of tools:

The following Tools And material were used to carry out the study.
Section 1: Personal Information This section collects demographic and anthropometric data, including age, full name, gender, and UMR number. It also records anthropometric measurements such as height, weight, and BMI. Questions about family history with T2DM, duration of diagnosis, and any addictions are included.
Section 2: Knowledge-Based Questionnaire This section assesses participants' understanding of dietary and diabetes management practices. Questions cover topics such as the benefits of whole fruits versus fruit juices, identifying healthy fat sources, importance of not skipping breakfast when taking metformin, and strategies for portion size management. Suitable beverages and diabetic snacking options are also evaluated.
Section 3: Attitude-Based Questionnaire This section explores participants' attitudes towards living with diabetes and its management. Questions address adjustment difficulties, importance of exercise, attitudes towards salt and sugar avoidance, maintaining a healthy weight, blood sugar monitoring, and preventing complications.
Section 4: Practice-Based Questionnaire This section assesses participants' actual practices related to diabetes management, including frequency of blood sugar level checks, meal frequency per day, use of herbal medication, current medication intake, engagement in regular exercise, and duration of daily exercise
Section 5: Food Frequency Questionnaire This section evaluates participants' dietary habits, focusing on the consumption frequency of various food groups and items such as sugar, honey, fruits, vegetables, cereals, millets, beans, dates, raisins, jaggery, sugary snacks, starchy foods, sweetened beverages, high-salt snacks, fried foods, and fats.

2.7 Method of data collection

1.The study were carried out in D. Y. Patil Hospital Nerul, Navi Mumbai.
2. All the Type 2 Diabetes mellitus patients admitted or in the outpatient department as per the inclusion criteria were included in the study.
3. All the Type 2 Diabetes mellitus patient was given Consent Forms and a Patient Information sheet and explained about the study, the subject of the study, the objectives of the study, the location, the benefits etc.
4. The participants in the study were assessed using KAP based Questionnaire. Questionnaire includes all The parameters about Demographics factors, Anthropometric measurements (height, weight, BMI), Assessment of Knowledge, Attitude and dietary practice, Food frequency
5. All the data that was collected were coded and analyzed using SPSS.
6. The Result and outcome were discussed to arrive at a conclusion.
7. The final report was prepared.

2.8 Method of data collection relevant to the objective

The data collection process for the assessment of knowledge, attitude, and dietary practices among patients with Type 2 Diabetes Mellitus (T2DM) at DY Patil Hospital, Nerul, will be structured to align with the study's primary objective. The aim is to ensure comprehensive, reliable, and valid data acquisition relevant to evaluating the existing knowledge, attitudes, and dietary practices of the patients.

2.9 Data Analysis plans and methods:

Statistical Analysis: SPSS software tool was used to statistically analyze the data obtained. General Considerations: Data were gathered in accordance with the requirements of the study.

The.xlsx file format (Microsoft Excel Version 2007 or above) was used to transfer the data. An Excel spreadsheet file is an alternate data format. The received data were examined for mistakes, inconsistencies, and completeness. Stata version 13.1, a Windows-based statistical tool, was used to analyze the data (Stata Corp, USA). All patient records that meet the inclusion and exclusion criteria were added to the analysis. Listings, figures, and summary tables were used to report the statistical analysis (TLFs). Description of Demographics The summary of demographic data was presented: • Age – descriptive statistics • Gender – n (%) For categorical variables, the parameter's number and percentage of respondents within each category—along with a category for missing data where necessary—were typically given. The number of individuals, mean, and standard deviation (SD) values were given for continuous variables. Specific subject information was included in the postings. Tabulations of categorical data were available for those categories that were in the data, unless otherwise indicated. Handling Missing Values: Imputation was not performed for missing data; it was classified as missing.

3. RESULTS AND DISCUSSION

Table 1: Age group of patients (n=100)

	No.	%
Age (Yrs.)		
• **<50 yrs**	**34**	**34.00%**
• **>50 yrs**	**66**	**66.00%**
Total	**100**	**-**

No.: No of count

Figure 1: Age group of patients (n=100)
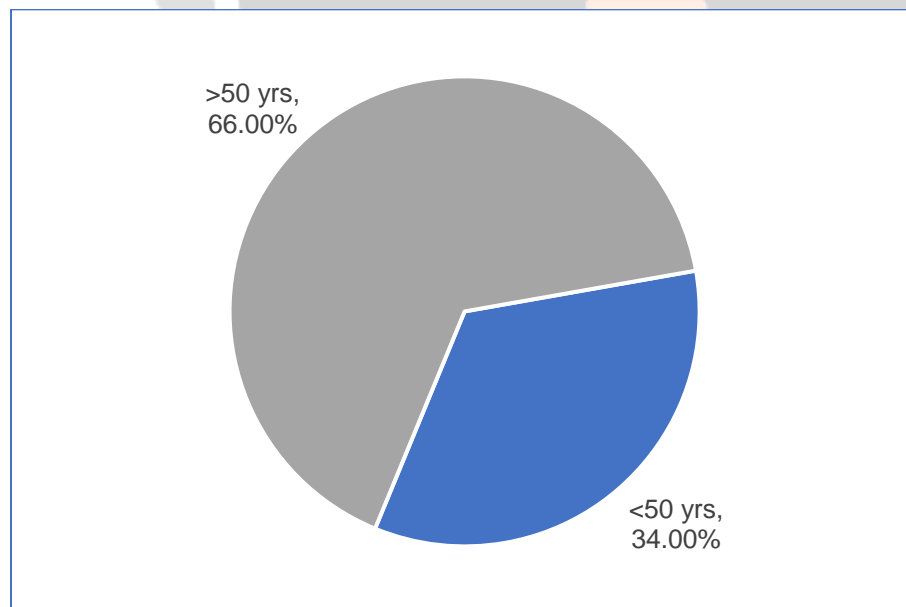
The demographics of patients in the study indicate a fairly balanced distribution between age groups. Out of 100 participants, 34% were under 50 years old, while 66% were over 50 years old.

Table 2: Gender distribution of patients (n=100)

	No.	*%*
Gender		
• Male	49	49.00%
• Female	51	51.00%
Total	**100**	-

No.: No of count

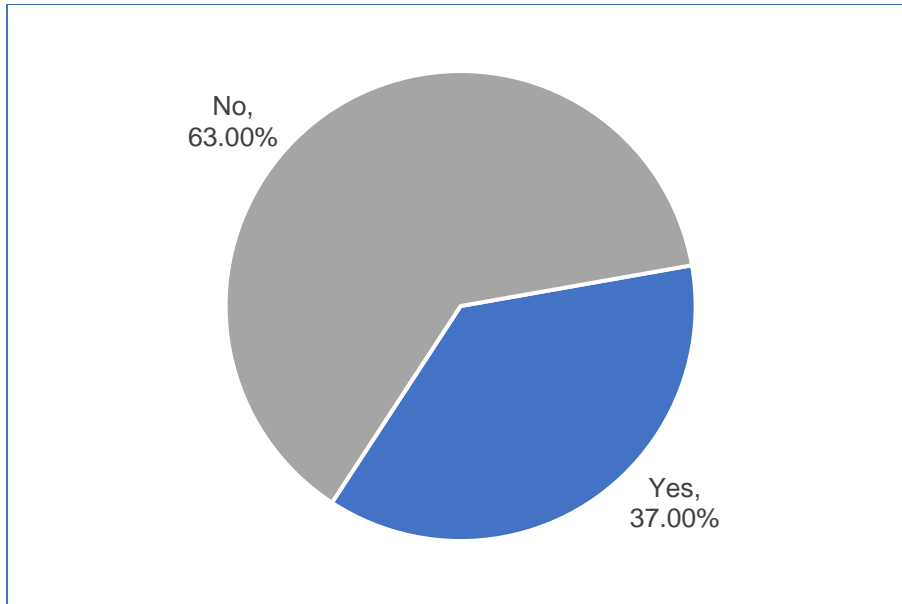**Figure 2: Gender distribution of patients (n=100)**
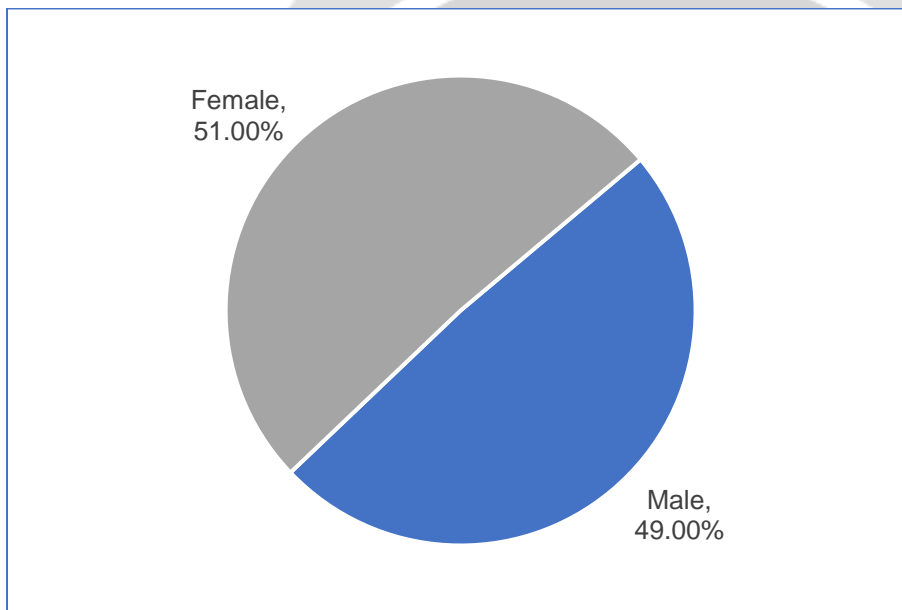
The gender distribution among the patients in the study is relatively balanced, with 49% male and 51% female participants out of a total of 100.

Table 3: Family history with T2DM of patients (n=100)

	No.	*%*
• Yes	37	37.00%
• No	63	63.00%
Total	100	

No.: No of count

Figure 3: Family history with T2DM of patients (n=100)

In FIGURE 3, the presence of a family history of type 2 diabetes mellitus (T2DM) among the patients is assessed. Out of 100 participants, 37% reported having a family history of T2DM, while 63% indicated no such history.

Table 4: Duration of diagnosis of T2DM in patients (n=100)

	No.	*%*
• >1 Year	11	11.00%
• 2-4 Years	24	24.00%
• 5-10 Years	29	29.00%
• > 10 Years	36	36.00%
Total	**100**	

No.: No of count

Figure 4: Duration of diagnosis of T2DM in patients (n=100)
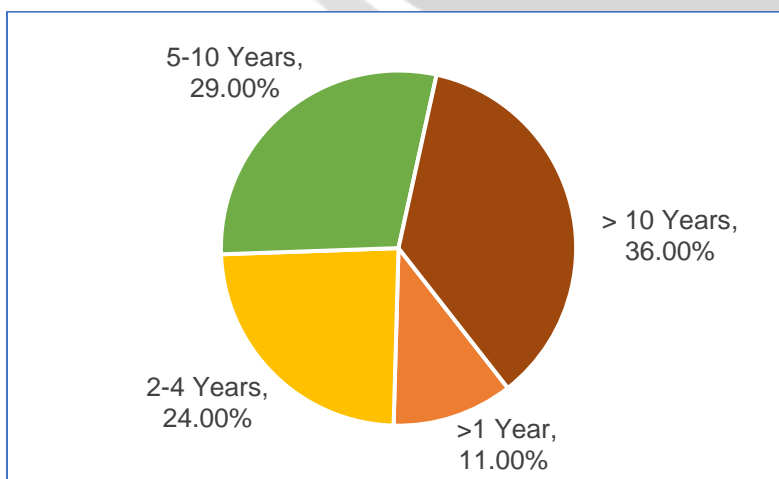
Figure 4 provides insights into the duration of diagnosis of type 2 diabetes mellitus (T2DM) among the patients. Among the 100 participants, 11% had been diagnosed for more than a year, 24% for 2 to 4 years, 29% for 5 to 10 years, and 36% for over 10 years.

Table 5: Addictions of alcohol, tobacco, smoking (n=100)

	No.	*%*
• Alcohol	23	23.00%
• Tobacco	20	20.00%
• Smoking	12	12.00%
• Others	1	1.00%
• None	61	61.00%
Total	**100**	

No.: No of count

Figure 5: Addictions of alcohol, tobacco, smoking (n=100)
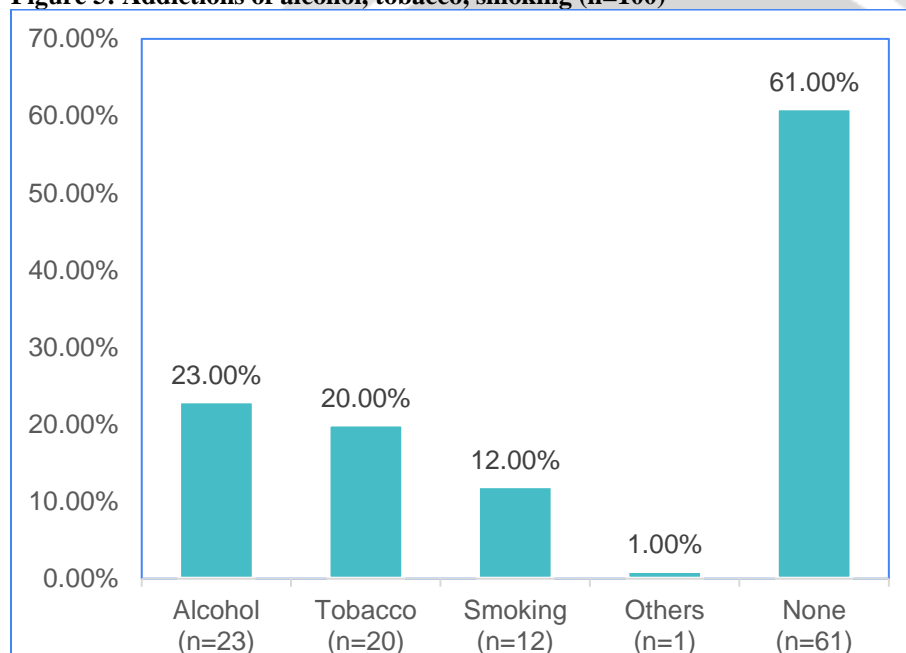
Figure 5 outlines the prevalence of various addictions among patients diagnosed with type 2 diabetes mellitus (T2DM). Among the 100 participants, 23% reported alcohol addiction, 20% reported tobacco addiction, and 12% reported smoking addiction. Additionally, 1% reported other forms of addiction, while the majority, accounting for 61%, reported no addiction.

Table 6: Eat fruits or fruits juice (n=100)

	No.	*%*
• Yes	22	22.00%
• No	9	9.00%
• I don't know	69	69.00%
Total	**100**	**-**

No.: No of count

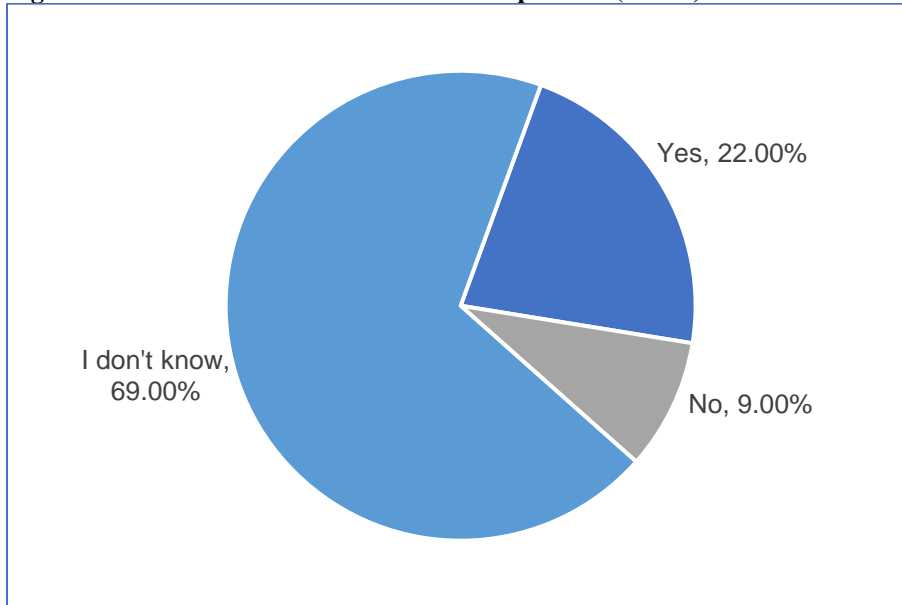**Figure 6: Preference in breakfast of diabetic patients (n=100)**

Figure 6 presents responses to a knowledge-based questionnaire item regarding the preference between whole fruits and fruit juices among patients with type 2 diabetes mellitus (T2DM). Among the 100 participants, 22% indicated a preference for consuming whole fruits over fruit juices, while 9% disagreed with this statement. Interestingly, the majority, comprising 69%, expressed uncertainty by selecting "I don't know."

Table 7: Foods which considered as good source of healthy fats (n=100)

	No.	*%*
• Nuts and oil seeds	99	99.00%
• Palm Oil	1	1.00%
• Butter	0	0.00%
• ICE Cream	0	0.00%
Total	**100**	

No.: No of count

Figure 7: Foods which considered as good source of healthy fats (n=100)
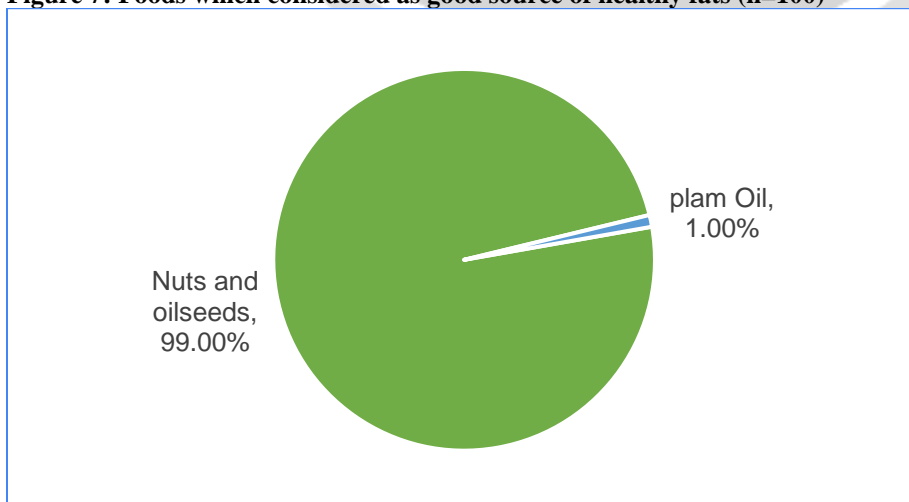
The figure 7 presents data on the perception of foods as good sources of healthy fats among patients with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), 99% identified nuts and oil seeds as a good source of healthy fats, while only 1% mentioned palm oil. No participants considered butter or ice cream as healthy fat sources

Table 8: Awareness of breakfast after taking medication metformin (n=100)

	No.	*%*
• Yes, I aware	62	62.00%
• No, I am not aware	38	38.00%
Total	**105**	

No.: No of count

Figure 8: Awareness of breakfast after taking medication metformin (n=100)
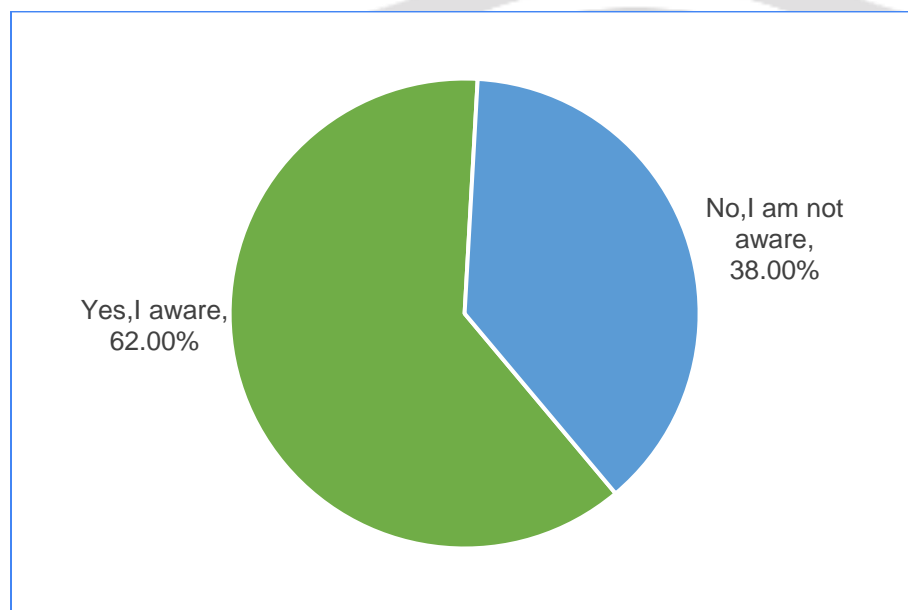
The figure 8 illustrates the awareness among patients with Type 2 Diabetes Mellitus (T2DM) regarding the recommendation not to skip breakfast after taking the medication metformin. Among the participants (n=100), 62% indicated being aware of this advice, while 38% reported not being aware of it.

Table 9: Meal management for better blood sugar control (n=100)

	No.	*%*
• Eating large portions at once	9	9.00%
• Ignoring portion sizes	19	19.00%
• Consuming smaller, balanced portions	72	72.00%
Total	**100**	

No.: No of count

**Figure 9: Meal management for better blood sugar control (n=100)**
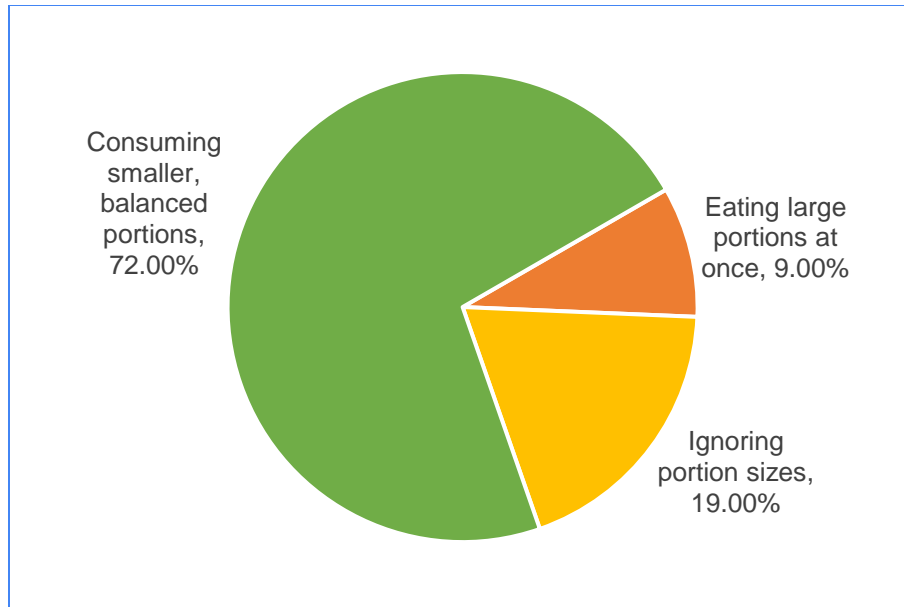
The figure.9 examines patients' awareness of recommended strategies for managing portion sizes in meals to achieve better blood sugar control among those with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), 72% acknowledged the importance of consuming smaller, balanced portions. In contrast, 9% admitted to eating large portions at once, while 19% reported ignoring portion sizes altogether.

Table 10: Frequency of inclusion of fruits in diet of diabetic patients (n=100)

	No.	*%*
• Regular soda	25	25.00%
• Fruits Juices	7	7.00%
• Unsweetened tea	9	9.00%
• Flavoured coffee/ water with sugar	13	13.00%
• All of above	46	46.00%
Total	**100**	

No.: No of count

Figure 10: Frequency of inclusion of fruits in diet of diabetic patients (n=100)
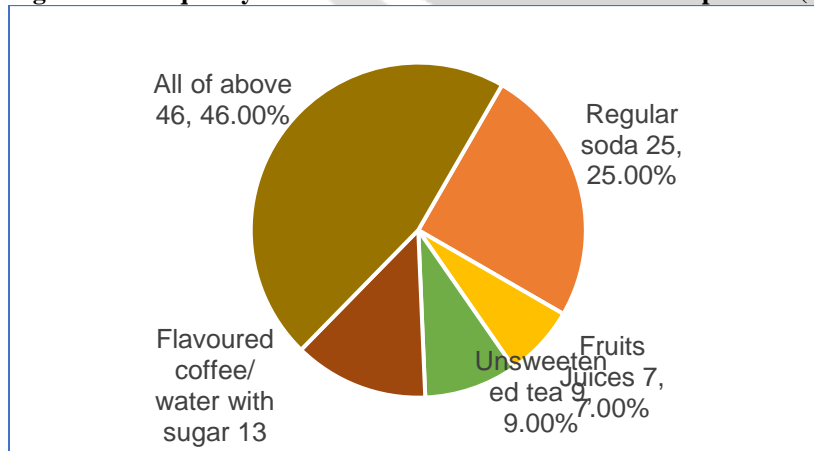
The figure 10 assesses the perception of diabetic patients regarding beverages considered beneficial for their condition. Among the participants (n=100), 46% believed that all the listed beverages, including regular soda, fruit juices, unsweetened tea, and flavored coffee or water with sugar, were suitable for diabetic patients. However, only a minority of respondents individually identified unsweetened tea (9%) and flavored coffee or water without sugar (13%) as favorable options.

Table 11: Diabetic snacked of patients (n=100)

	No.	*%*
• Methi Khakra	7	7.00%
• Diet Chivda/ Diet biscuits	14	14.00%
• Roasted Nuts	33	33.00%
• Both 1& 3 Option	46	46.00%
Total	**100**	

No.: No of count

Figure 11: Diabetic snacked of patients (n=100)
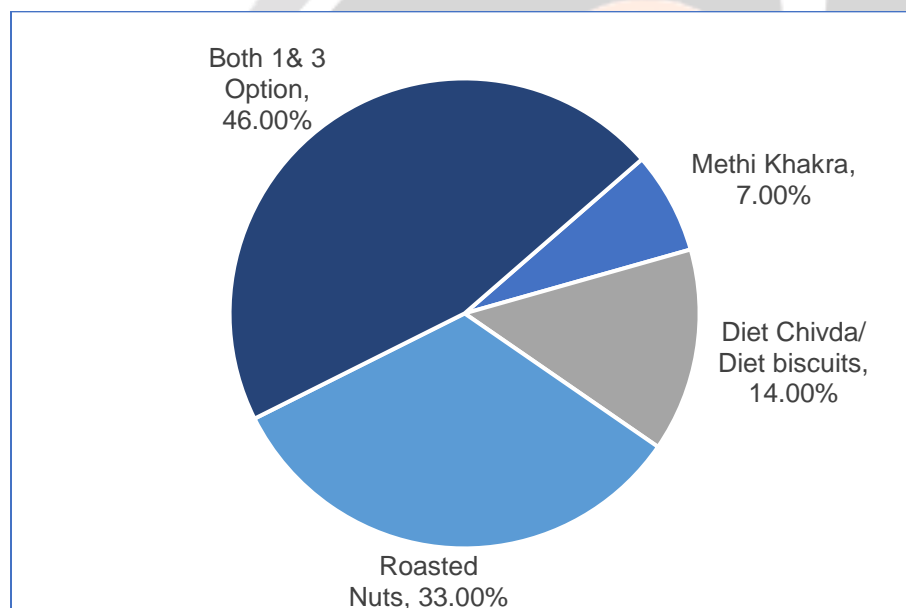
The figure 11 presents data on diabetic patients' preferences for snacking options. Among the participants (n=100), the majority (46%) believed that consuming a combination of methi khakra and roasted nuts was the best option for diabetic snacking. Additionally, 33% favored roasted nuts as a standalone choice, while smaller percentages opted for diet chivda/diet biscuits (14%) or methi khakra (7%) individually.

Table 12: Adjustment of diabetic snacked option (n=100)

	No.	*%*
• Yes	93	93.00%
• No	7	7.00%
Total	**100**	

No.: No of count

**Figure 12: Adjustment of diabetic snacked option (n=100)**
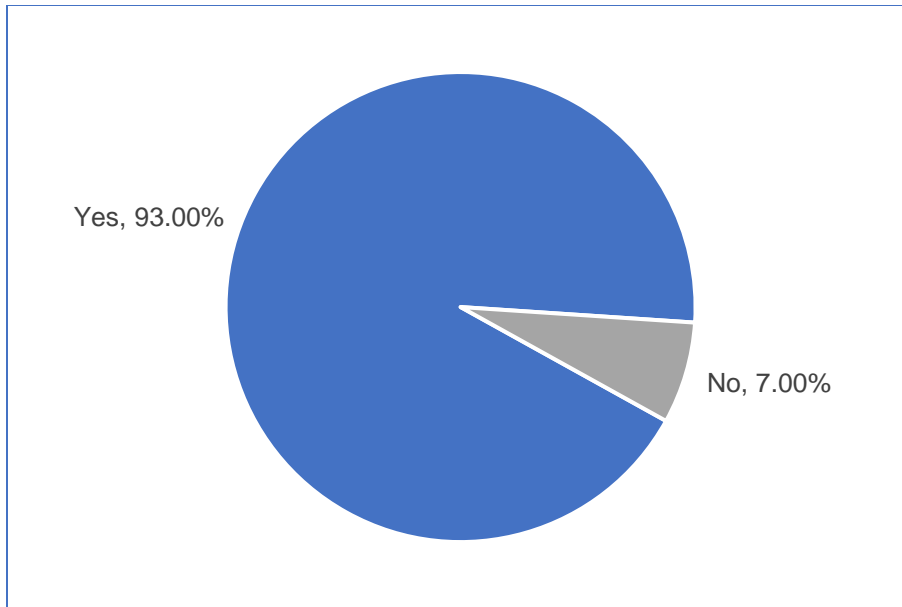
The figure 12 presents findings on the attitudes of patients towards adjusting to having diabetes. Among the participants (n=100), an overwhelming majority (93%) reported finding it difficult to adjust to having diabetes, while only a small percentage (7%) stated otherwise.

Table 13: Importance of regular exercise in diabetic patient (n=100)

	No.	*%*
• Very Important	100	100.00%
• Not Important	0	0.00%
Total	**100**	

No.: No of count

Figure 13: Importance of regular exercise in diabetic patient (n=100)
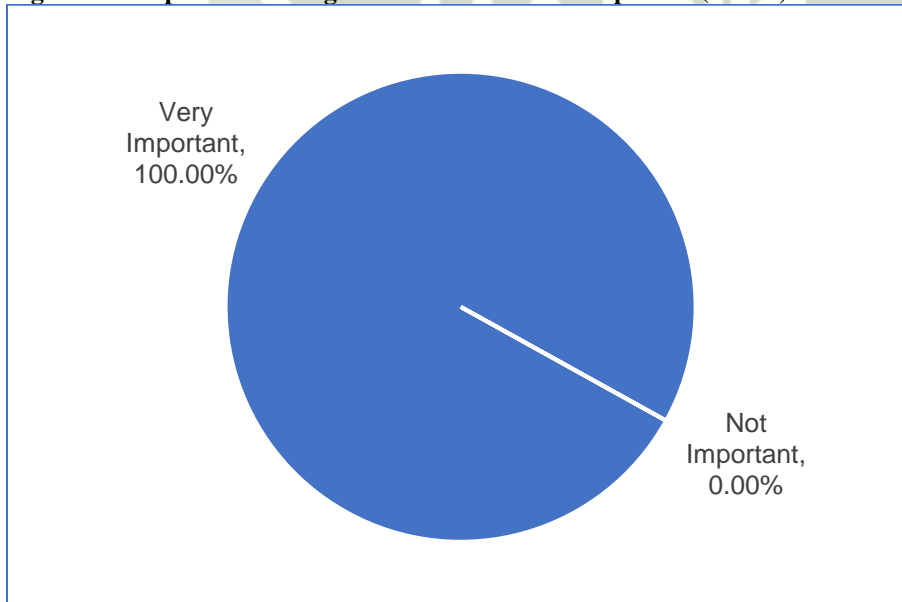
The figure 13 reflects patients' perceptions regarding the importance of regular exercise in managing diabetes. Remarkably, all participants (n=100) unanimously rated regular exercise as "very important" for managing diabetes. This underscores a strong awareness among patients regarding the significance of physical activity in diabetes management.

Table 14:Disadvantages of extra added salts and sugar in diabetic patient (n=100)

	No.	*%*
• Yes	55	56.10%
• No	43	43.90%
Total	**100**	

No.: No of count

Figure 14: Disadvantages of extra added salts and sugar in diabetic patient (n=100)
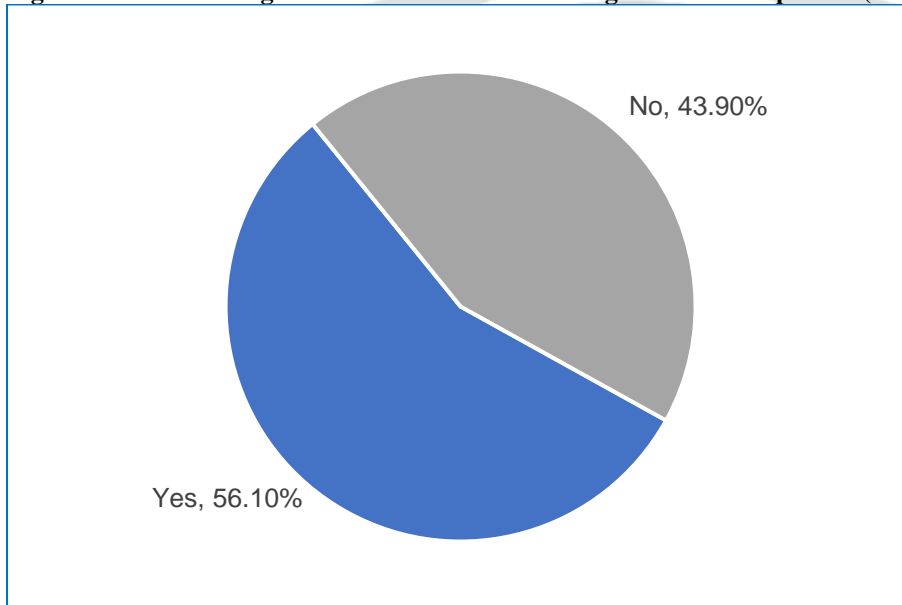
The figure 14 assesses patients' opinions on the benefits of avoiding extra added salts and sugar in their diet. Among the participants (n=100), a majority (56.10%) acknowledged the advantages of avoiding extra added salts and sugar, recognizing the detrimental impact these substances can have on their health, especially in managing Type 2 Diabetes Mellitus (T2DM). However, a notable proportion (43.90%) did not perceive the necessity of avoiding these additives.

Table 15: Maintenance of weight in diabetic patient (n=100)

	No.	*%*
• Yes	92	92.00%
• No	1	1.00%
• I don't know	7	7.00%
Total	**100**	

No.: No of count

**Figure 15: Maintenance of weight in diabetic patient (n=100)**
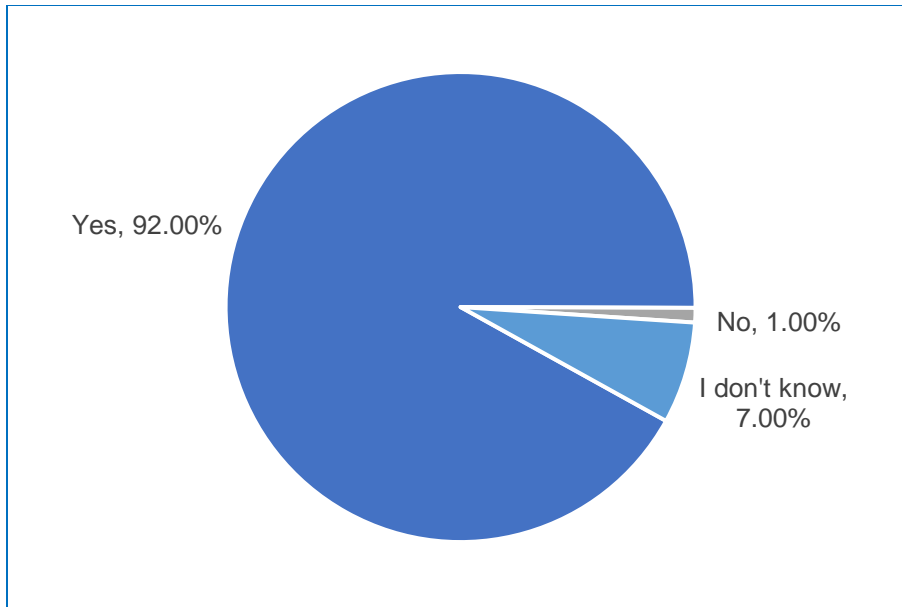
The figure 15 examines patients' perspectives on the importance of maintaining a healthy weight in diabetes management. Among the participants (n=100), an overwhelming majority (92%) recognized the significance of maintaining a healthy weight for individuals with Type 2 Diabetes Mellitus (T2DM). This strong consensus underscores the widely acknowledged correlation between weight management and diabetes control. However, a small minority (1%) expressed disbelief in the importance of weight maintenance, while 7% admitted uncertainty.

Table 16: Monitored blood sugar level in diabetic patient (n=100)

	No.	*%*
• Yes	92	92.00%
• No	1	1.00%
• I don't know	7	7.00%
Total	**100**	

No.: No of count

Figure 16: Monitored blood sugar level in diabetic patient (n=100)
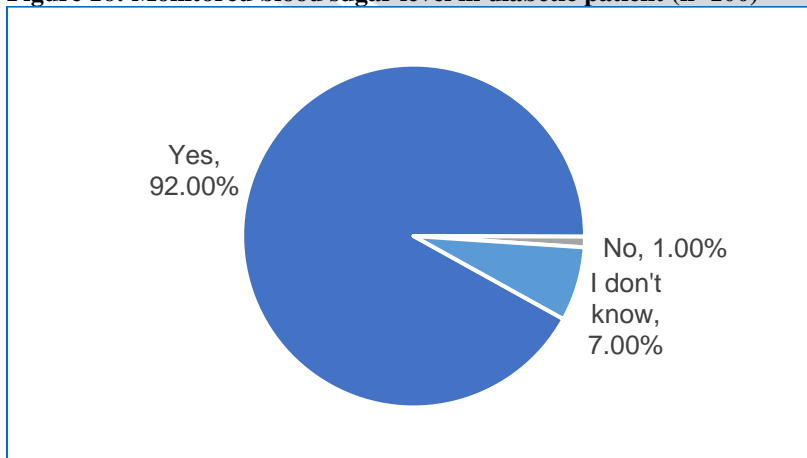
The figure 16 investigates patients' attitudes towards monitoring their blood sugar levels in the management of Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a vast majority (92%) recognized the importance of regularly checking their blood sugar levels. This high level of adherence to blood sugar monitoring reflects a proactive

approach to diabetes management among patients. However, a small minority (1%) indicated not monitoring their blood sugar levels, while 7% expressed uncertainty.

Table 17: Blood sugar level was checked in patients (n=100)

	No.	*%*
• Daily	4	4.00%
• Weekly	12	12.00%
• Monthly	60	60.00%
• Rarely	21	21.00%
• Never	3	3.00%
Total	**100**	

No.: No of count

Figure 17: Blood sugar level was checked in patients (n=100)
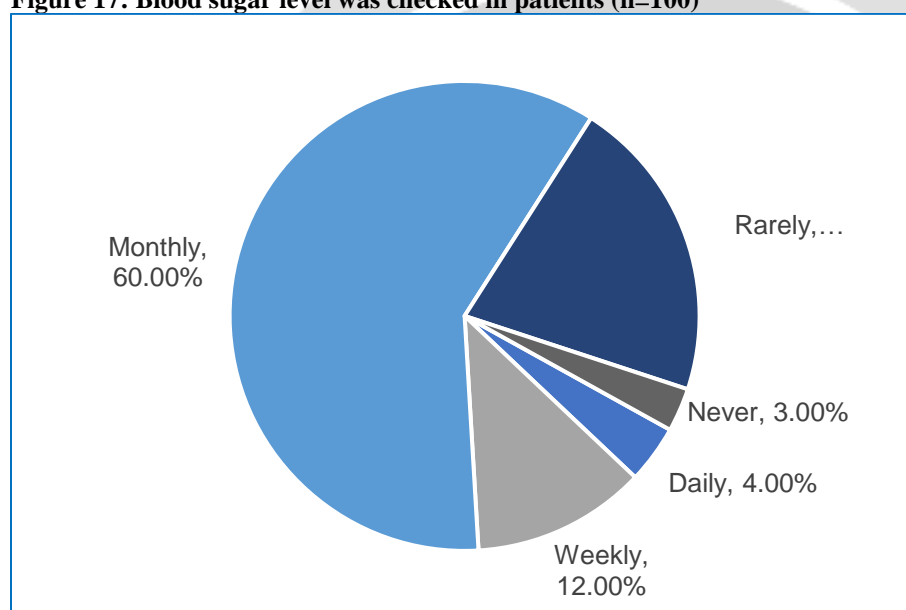
The figure 17 examines the frequency at which patients with Type 2 Diabetes Mellitus (T2DM) check their blood sugar levels as part of their self-management practices. Among the participants (n=100), the majority (60%) reported checking their blood sugar levels monthly, indicating a consistent monitoring routine. However, a considerable proportion reported less frequent monitoring, with 21% checking their blood sugar levels rarely and 3% never doing so. Additionally, smaller percentages reported checking their blood sugar levels on a weekly (12%) or daily (4%) basis.

Table 18:Duration of eaten meals in a day in diabetic patients (n=100)

	No.	*%*
• > 6 times	3	3.00%
• 6 times	12	12.00%
• 5 times	34	34.00%
• 4 times	46	46.00%
• 3 times	5	5.00%
Total	**100**	

No.: No of count

**Figure 18: Duration of eating meals in a day in diabetic patients (n=100)**
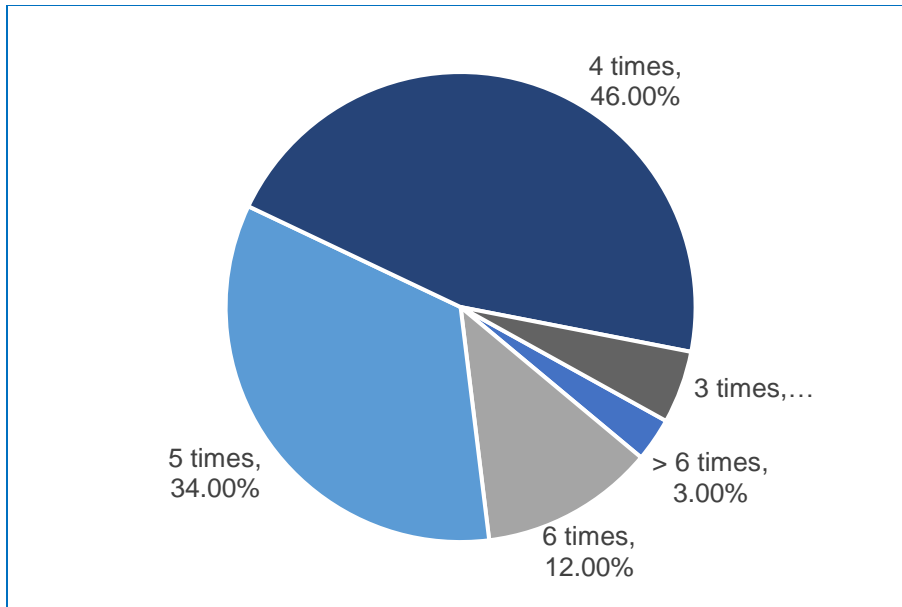
The figure 18 presents data on the frequency of meal consumption throughout the day among patients with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the most common eating pattern was consuming meals four times a day, reported by 46% of respondents. This was followed by those who ate five times a day (34%) and six times a day (12%). A smaller percentage reported eating meals three times a day (5%) or more than six times a day (3%)

Table 19:Use of herbal medication in diabetic patients (n=100)

	No.	*%*
• Yes	9	9.00%
• No	91	91.00%
Total	**100**	

No.: No of count

Figure 19: Use of herbal medication in diabetic patients (n=100)
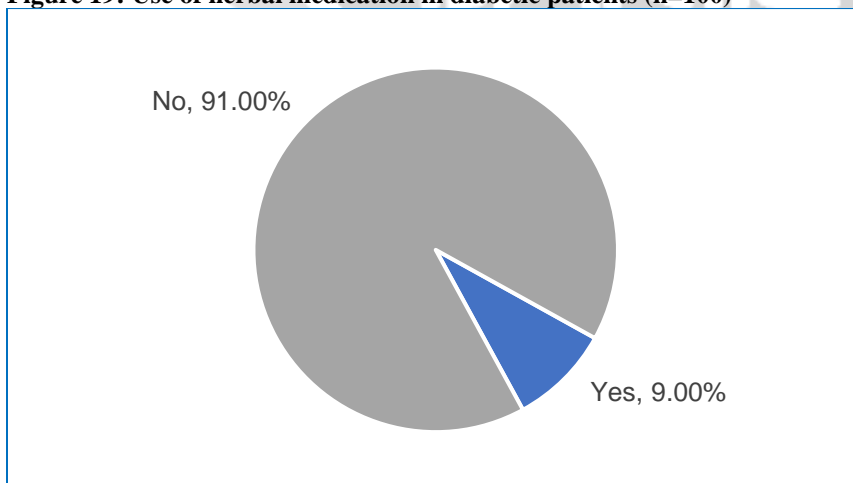
The figure 19 examines the usage of herbal medication among patients with Type 2 Diabetes Mellitus (T2DM) as a means of controlling their condition. Among the participants (n=100), the vast majority (91%) reported not using herbal okmedication for diabetes management, while only a small proportion (9%) indicated using herbal remedies.

Table 20:Concomitant medication on T2DM in diabetic patients (n=100)

	No.	*%*
• Yes	99	99.00%
• No	1	1.00%
Total	**100**	

No.: No of count

**Figure 20: Concomitant medication on T2DM in diabetic patients (n=100)**
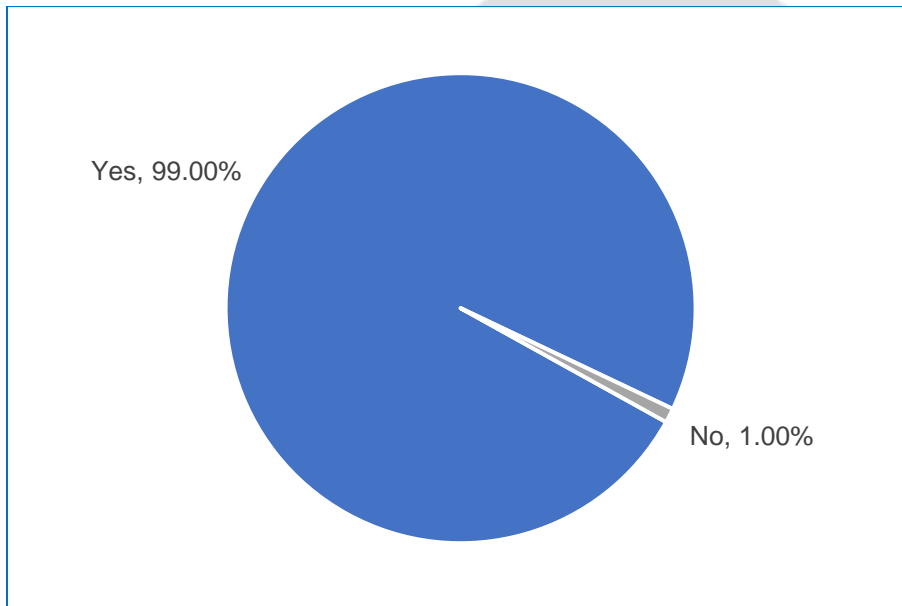
The figure 20 presents data on the usage of medication among patients with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), an overwhelming majority (99%) reported currently taking medication for their T2DM, while only a negligible proportion (1%) indicated not using any medication.

Table 21:Exercise done by diabetic patients (n=100)

	No.	*%*
• Yes	41	41.00%
• No	59	59.00%
Total	**100**	

No.: No of count

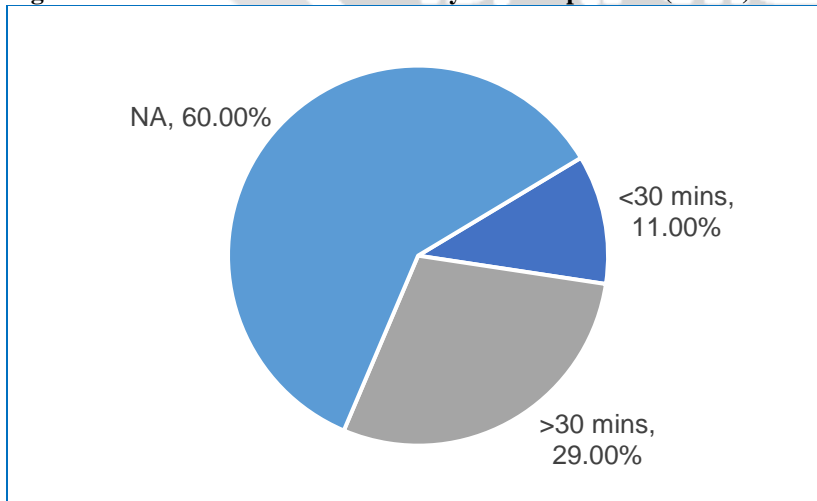**Figure 21: Exercise done by diabetic patients (n=100)**
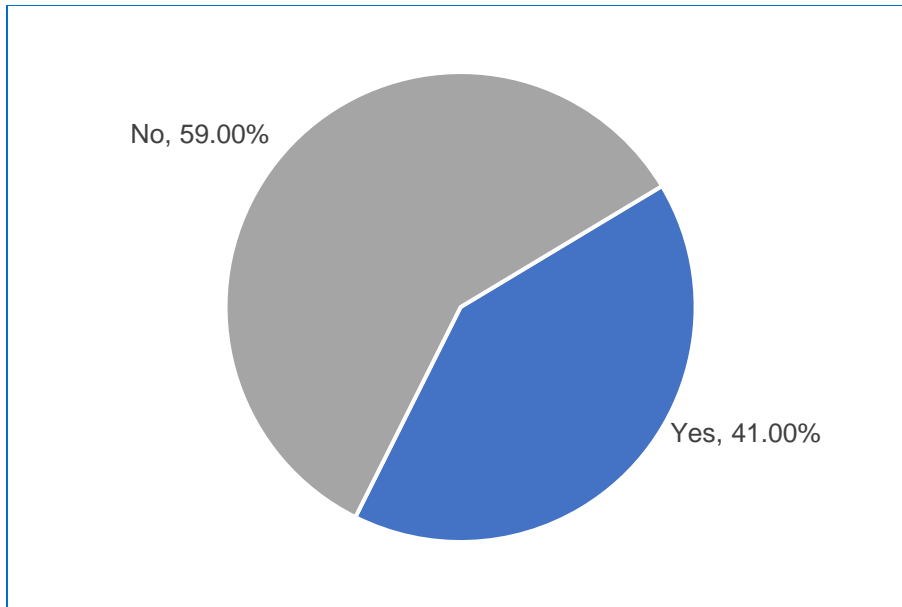
The figure 21 examines the duration of exercise among patients with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (60%) did not provide a specific duration for their exercise routine, indicating a lack of clarity or consistency in tracking exercise time. However, among those who did report, 29% indicated exercising for more than 30 minutes per day, while 11% reported exercising for less than 30 minutes per day.

Table 22:Duration of Exercise done by diabetic patients (n=100)

	No.	*%*
• <30 mins	11	11.00%
• >30 mins	29	29.00%
• NA	60	60.00%
Total	**100**	

No.: No of count

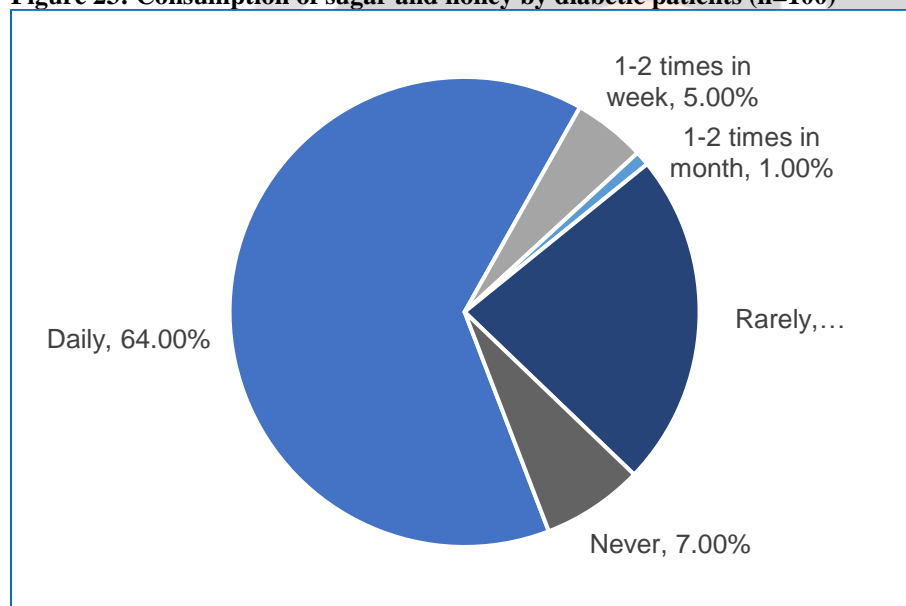**Figure 22: Duration of Exercise done by diabetic patients (n=100)**

The figure 22 explores the frequency of sugar and honey consumption among patients with Type 2 Diabetes Mellitus (T2DM) in various beverages and foods. Among the participants (n=100), the majority (64%) reported consuming sugar and honey daily in items like tea, coffee, curd, and lassi. A smaller proportion reported consuming them rarely (23%), while 7% indicated never consuming sugar and honey. Additionally, only a small percentage reported consuming them 1-2 times a week (5%) or 1-2 times a month (1%).

Table 23:Consumption of sugar and honey by diabetic patients (n=100)

	No.	*%*
• Daily	64	64.00%
• 1-2 times in week	5	5.00%
• 1-2 times in month	1	1.00%
• Rarely	23	23.00%
• Never	7	7.00%
Total	**100**	

No.: No of count

Figure 23: Consumption of sugar and honey by diabetic patients (n=100)

The figure 23 explores the frequency of sugar and honey consumption among patients with Type 2 Diabetes Mellitus (T2DM) in various beverages and foods. Among the participants (n=100), the majority (64%) reported consuming sugar and honey daily in items like tea, coffee, curd, and lassi. A smaller proportion reported consuming them rarely (23%), while 7% indicated never consuming sugar and honey. Additionally, only a small percentage reported consuming them 1-2 times a week (5%) or 1-2 times a month (1%).

Table 24:Consumption of fruits by diabetic patients (n=100)

	No.	*%*
• Daily	9	9.00%
• 1-2 times in week	46	46.00%
• 1-2 times in month	20	20.00%
• Rarely	22	22.00%
• Never	3	3.00%
Total	**100**	

No.: No of count

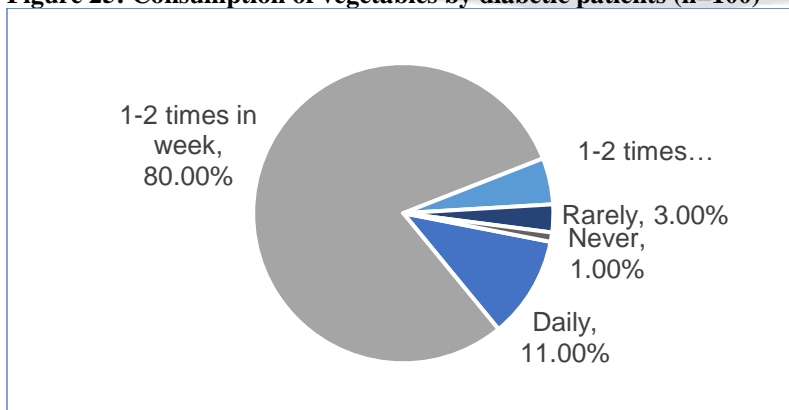**Figure 24: Consumption of fruits by diabetic patients (n=100)**
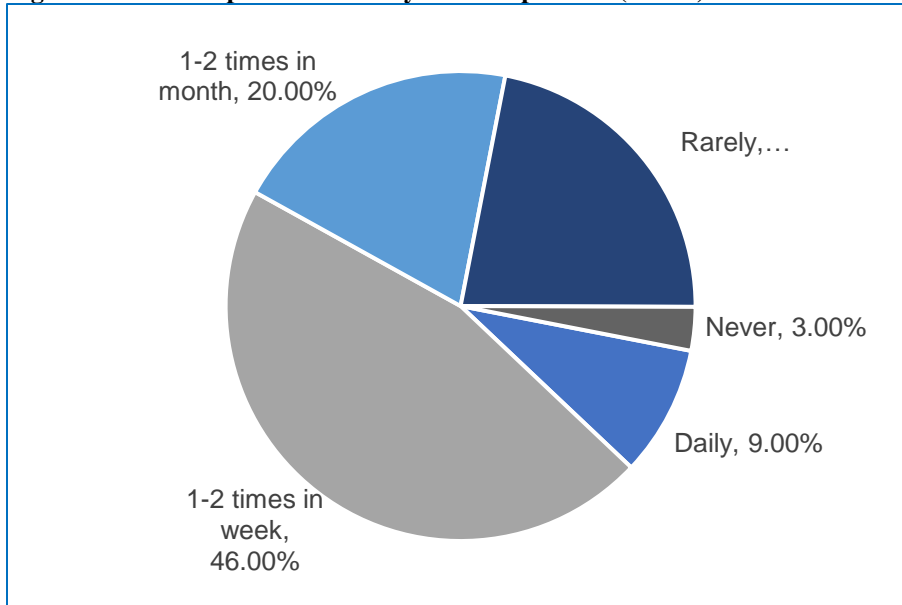
The figure 24 examines the frequency of fruit consumption among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (46%) reported consuming fruits 1-2 times a week, while 20% reported doing so 1-2 times a month. A smaller percentage reported consuming fruits rarely (22%), and only 9% reported daily consumption. Additionally, a small proportion (3%) indicated never consuming fruits.

Table 25:Consumption of vegetables by diabetic patients (n=100)

	No.	*%*
• Daily	11	11.00%
• 1-2 times in week	80	80.00%
• 1-2 times in month	5	5.00%
• Rarely	3	3.00%
• Never	1	1.00%
Total	**100**	

No.: No of count

Figure 25: Consumption of vegetables by diabetic patients (n=100)
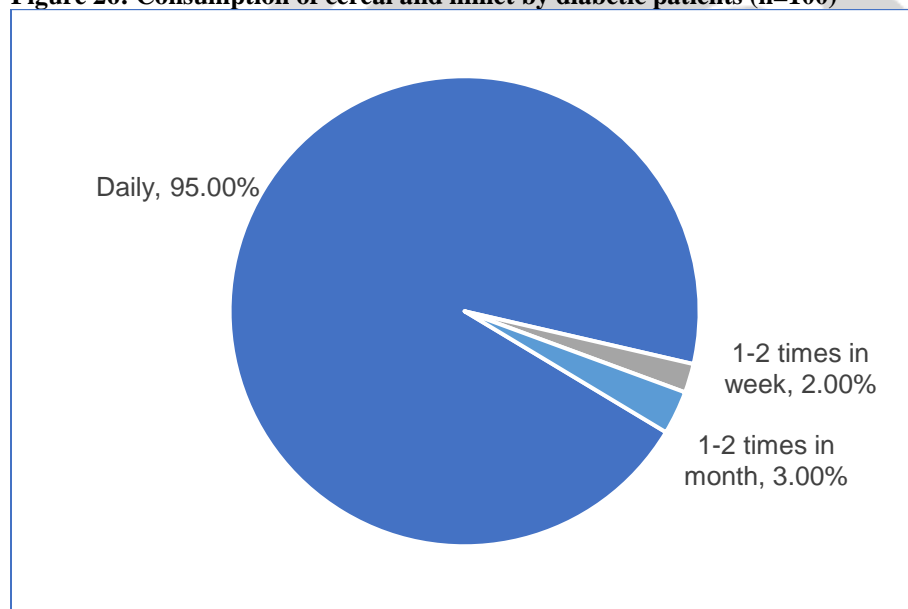
The figure 25 examines the frequency of vegetable consumption among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a significant majority (80%) reported consuming vegetables 1-2 times a week, indicating regular inclusion of vegetables in their diet. A smaller proportion reported daily consumption (11%), while only a few reported consuming vegetables 1-2 times a month (5%), rarely (3%), or never (1%).

Table 26: Consumption of cereal and millet by diabetic patients (n=100)

	No.	*%*
• Daily	95	95.00%
• 1-2 times in week	2	2.00%
• 1-2 times in month	3	3.00%
• Rarely	0	0.00%
• Never	0	0.00%
Total	**100**	

No.: No of count

Figure 26: Consumption of cereal and millet by diabetic patients (n=100)
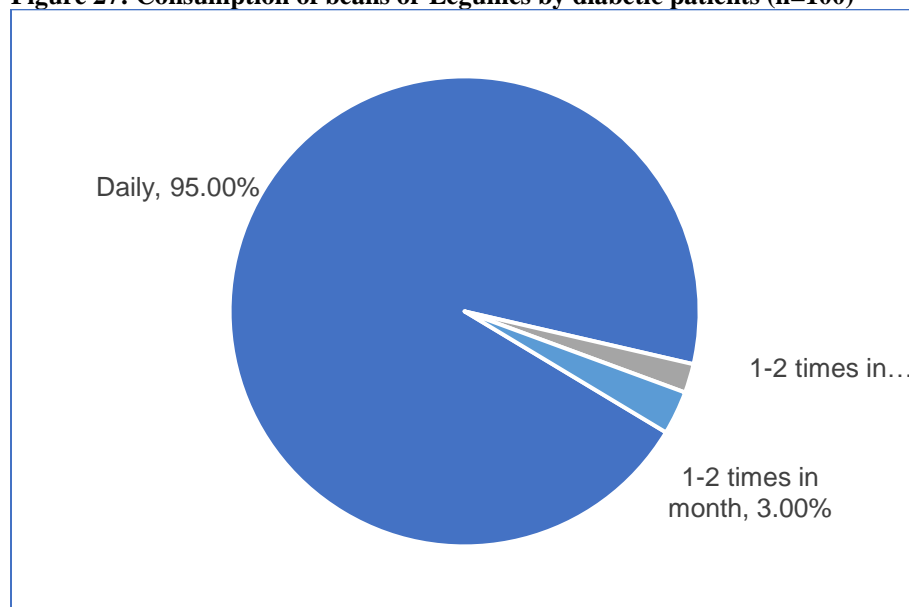

The figure 26 examines the frequency of cereal and millet consumption among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), an overwhelming majority (95%) reported consuming cereals and millets daily, indicating a consistent inclusion of these foods in their diet. Only a small percentage reported consuming them 1-2 times a week (2%) or 1-2 times a month (3%), with none reporting consuming them rarely or never.

Table 27:Consumption of beans or legumes by diabetic patients (n=100)

	No.	*%*
• Daily	3	3.00%
• 1-2 times in week	75	75.00%
• 1-2 times in month	21	21.00%
• Rarely	1	1.00%
• Never	0	0.00%
Total	**100**	

No.: No of count

Figure 27: Consumption of beans or Legumes by diabetic patients (n=100)
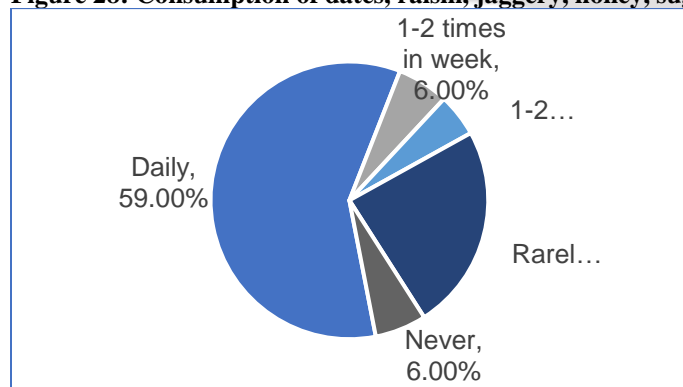

The figure 27 explores the frequency of consumption of beans and legumes among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (75%) reported consuming beans and legumes 1-2 times a week, indicating a regular inclusion of these nutritious foods in their diet. Additionally, 21% reported consuming them 1-2 times a month, while only a small percentage reported rare consumption (1%) or daily consumption (3%). None of the participants reported never consuming beans or legumes.

Table 28: Consumption of dates, raisin, jaggery, honey, sugar by diabetic patients (n=100)

	No.	*%*
• Daily	59	59.00%
• 1-2 times in week	6	6.00%
• 1-2 times in month	5	5.00%
• Rarely	24	24.00%
• Never	6	6.00%
Total	**100**	

No.: No of count

**Figure 28: Consumption of dates, raisin, jaggery, honey, sugar by diabetic patients (n=100)**

The figure 28 examines the frequency of consumption of sweeteners such as dates, raisins, jaggery, honey, and sugar among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (59%) reported consuming these sweeteners daily, indicating a frequent inclusion of these items in their diet. Additionally, 6% reported consuming them 1-2 times a week, while 5% reported doing so 1-2 times a month. A significant proportion reported consuming them rarely (24%), and a small percentage reported never consuming them (6%).

Table 29: Consumption of sugary snacks by diabetic patients (n=100)

	No.	*%*
• Daily	2	2.00%
• 1-2 times in week	2	2.00%
• 1-2 times in month	27	27.00%
• Rarely	55	55.00%
• Never	14	14.00%
Total	**100**	

No.: No of count

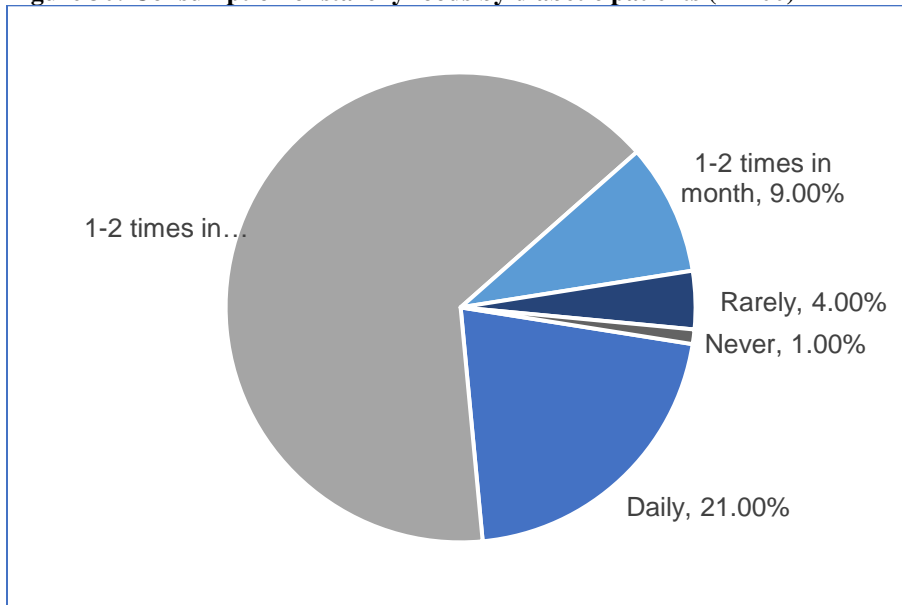**Figure 29: Consumption of sugary snacks by diabetic patients (n=100)**
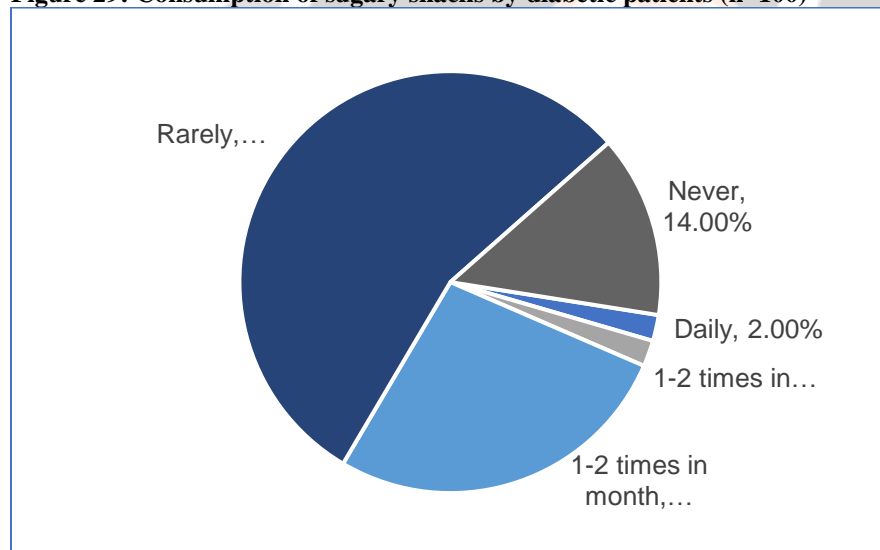
The figure 29 explores the frequency of consumption of sugary snacks among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a majority (55%) reported consuming sugary snacks rarely, indicating infrequent indulgence in these items. Additionally, 27% reported consuming them 1-2 times a month, while smaller proportions reported daily consumption (2%), consuming them 1-2 times a week (2%), or never consuming them (14%).

Table 30: Consumption of starchy foods by diabetic patients (n=100)

	No.	*%*
• Daily	21	21.00%
• 1-2 times in week	65	65.00%
• 1-2 times in month	9	9.00%
• Rarely	4	4.00%
• Never	1	1.00%
Total	**100**	

No.: No of count

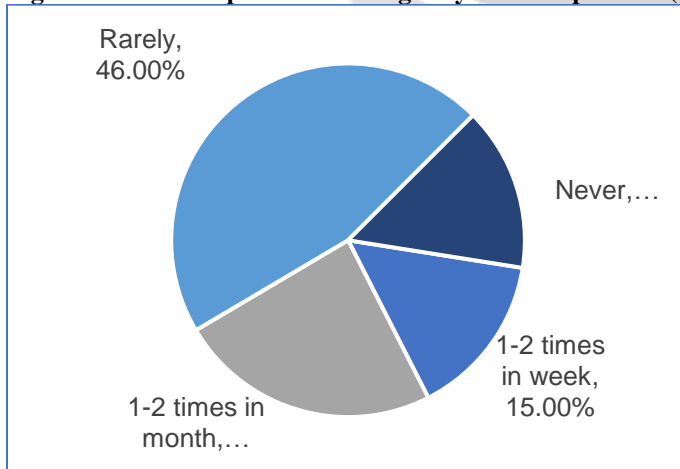**Figure 30: Consumption of starchy foods by diabetic patients (n=100)**

The figure 30 examines the frequency of consumption of starchy foods among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (65%) reported consuming starchy foods 1-2 times a week, indicating a moderate intake of these items in their diet. Additionally, 21% reported consuming them daily, while smaller proportions reported consuming them 1-2 times a month (9%), rarely (4%), or never (1%).

Table 31: Consumption of beverages by diabetic patients (n=100)

	No.	*%*
• Daily	0	0.00%
• 1-2 times in week	15	15.00%
• 1-2 times in month	24	24.00%
• Rarely	46	46.00%
• Never	15	15.00%
Total	**100**	

No.: No of count

Figure 31: Consumption of beverages by diabetic patients (n=100)
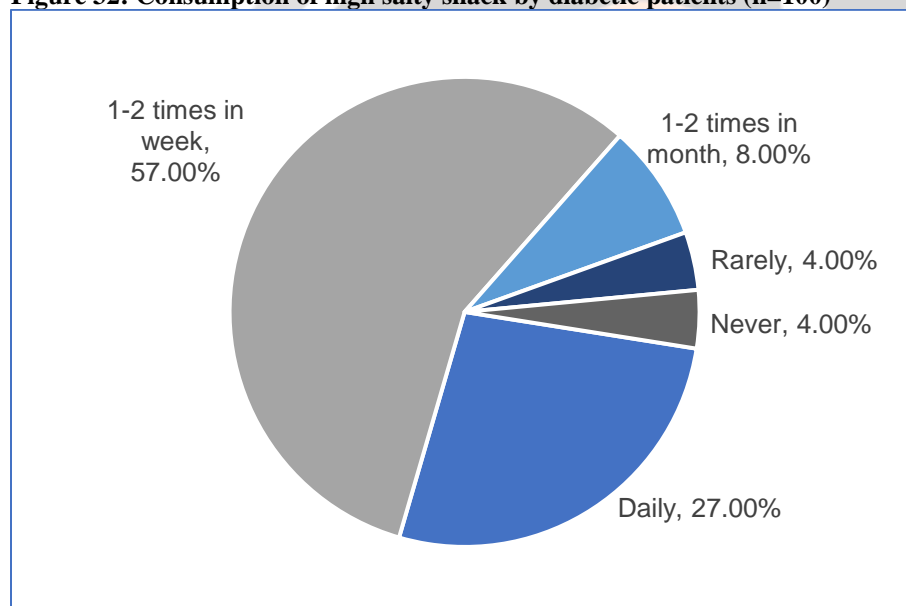
The figure 31 explores the frequency of consumption of sweetened beverages among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a significant majority (46%) reported rarely consuming sweetened beverages, indicating infrequent consumption of these items in their diet. Additionally, 24% reported consuming them 1-2 times a month, while smaller proportions reported consuming them 1-2 times a week (15%) or never (15%). Interestingly, none of the participants reported daily consumption of sweetened beverages.

Table 32: Consumption of high salty snack by diabetic patients (n=100)

	No.	*%*
• Daily	27	27.00%
• 1-2 times in week	57	57.00%
• 1-2 times in month	8	8.00%
• Rarely	4	4.00%
• Never	4	4.00%
Total	**100**	

No.: No of count

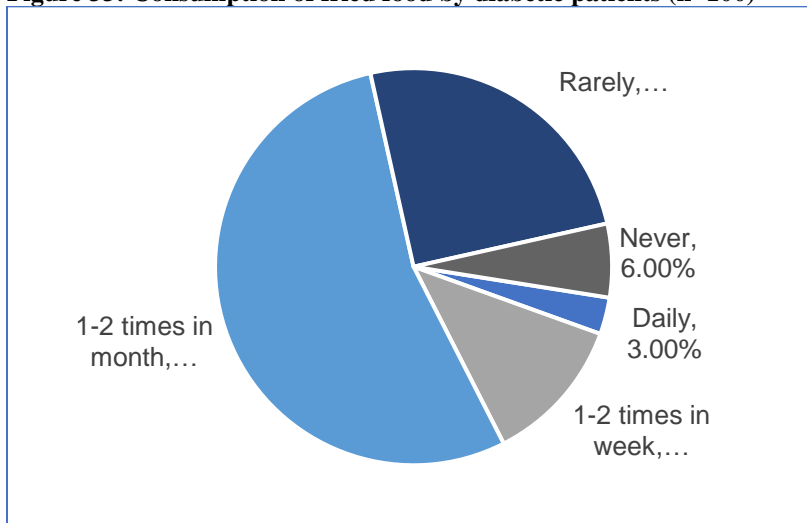**Figure 32: Consumption of high salty snack by diabetic patients (n=100)**

The figure 32 investigates the frequency of consumption of high salty snacks among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a significant majority (57%) reported consuming high salty snacks 1-2 times a week, indicating a moderate intake of these items in their diet. Additionally, 27% reported consuming them daily, while smaller proportions reported consuming them 1-2 times a month (8%), rarely (4%), or never (4%)

Table 33: Consumption of fried food by diabetic patients (n=100)

	No.	*%*
• Daily	3	3.00%
• 1-2 times in week	12	12.00%
• 1-2 times in month	54	54.00%
• Rarely	25	25.00%
• Never	6	6.00%
Total	**100**	

No.: No of count

**Figure 33: Consumption of fried food by diabetic patients (n=100)**

The figure 33 investigates the frequency of consumption of fried foods among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), the majority (54%) reported consuming fried foods 1-2 times a month, indicating a moderate intake of these items in their diet. Additionally, 25% reported consuming them rarely, while smaller proportions reported consuming them 1-2 times a week (12%), daily (3%), or never (6%).

Table 34: Consumption of ghee, butter, cream, mayonnaise by diabetic patients (n=100)

	No.	*%*
• Daily	8	8.00%
• 1-2 times in week	16	16.00%
• 1-2 times in month	12	12.00%
• Rarely	50	50.00%
• Never	14	14.00%
Total	**100**	

No.: No of count

Figure 34: Consumption of ghee, butter, cream, mayonnaise by diabetic patients (n=100)
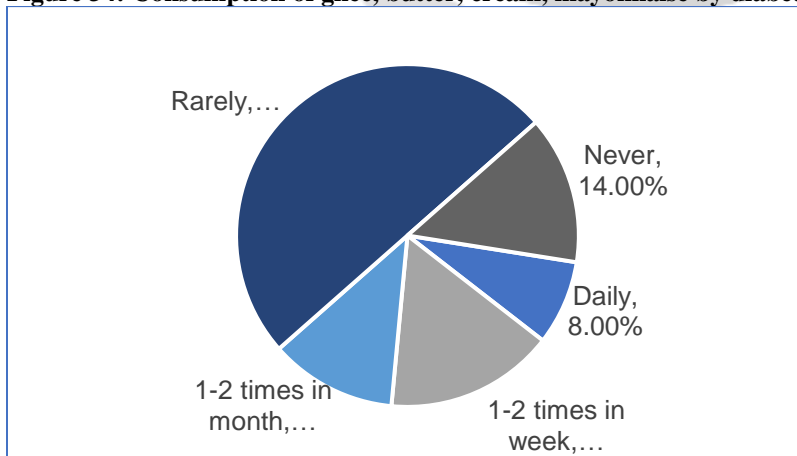
The figure 34 examines the frequency of consumption of high-fat items such as ghee, butter, cream, and mayonnaise among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Among the participants (n=100), a significant majority (50%) reported consuming these high-fat items rarely, indicating a limited intake of such foods in their diet. Additionally, 16% reported consuming them 1- 2 times a week, while smaller proportions reported consuming them daily (8%), 1-2 times a month (12%), or never (14%)

4. CONCLUSIONS

In conclusion, the study conducted at D.Y. Patil Hospital in Navi Mumbai sheds light on the knowledge, attitudes, and practices (KAP) regarding dietary patterns among patients diagnosed with Type 2 Diabetes Mellitus (T2DM). Through a comprehensive analysis of data collected from 100 participants over a six-month period, several key insights have been gleaned. Firstly, the demographic analysis revealed a balanced distribution across age groups and genders, ensuring a representative sample for a comprehensive understanding of T2DM patients' KAP. Family history emerged as a significant influencer, emphasizing the need for personalized management strategies considering familial predispositions.

Additionally, the prevalence of addictions underscores the importance of addressing lifestyle factors beyond diet in diabetes management. Analysis of KAP regarding dietary patterns highlighted both areas of strength and areas for improvement. While there was generally high awareness of the importance of regular exercise and blood sugar monitoring, gaps were identified in portion control, beverage choices, and snacking preferences. Furthermore, variations in the frequency of consumption of essential food groups like fruits, vegetables, cereals, and legumes suggest a need for targeted interventions to promote healthier eating habits among T2DM patients.

Overall, the findings provide valuable insights that can guide the development of tailored interventions aimed at improving dietary choices, enhancing disease management, and ultimately, improving the overall health outcomes of individuals living with Type 2 Diabetes Mellitus. By addressing these identified gaps and promoting healthier lifestyle practices, healthcare providers can play a pivotal role in empowering T2DM patients to better manage their condition and improve their quality of life

5. ACKNOWLEDGEMENT

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