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A Survey Study on Diabetes and its Causative Factors

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Abstract: ***Diabetes is a chronic disease that occurs when the pancreas is no longer able to make insulin, or when the body cannot make good use of the insulin it produces. Insulin is a hormone made by the pancreas, that acts like a key to let glucose from the food we eat pass from the blood stream into the cells in the body to produce energy. All carbohydrate foods are broken into glucose in the blood. Insulin helps glucose get into the cells. Not being able to produce insulin or use if effectively leads to raised glucose levels in the blood (known as hyperglycemia). Over the long term high glucose levels are associated with the damage to the body and failure of various organs and tissues. Diabetes currently affects more than 62 million Indians, which is more than 7.1% of the adult population. The average on onset is 42.5 years. Nearly 1 million Indians suffer due to diabetes every year. A survey on 75 adults, out of which 32 females and 43 males were done. A well structured questionnaire was employed to interview the subjects about their age, BMI, family history, reproductive health, diet and lifestyle. The data so collected was subjected to statistical analysis using chi square test. The results showed a positive correlation between diabetes risk and age, increased BMI, family history, early marriage, late childbirth, consumption of exogenous hormones). Awareness was also done through a councelling sessions were conducted with the patients to educate the people about early detection of diabetes, the do's and don'ts, to implement healthy lifestyle interventions, importance of understanding diabetes and poor impact of westernization of lifestyle. Thus, it was concluded from our study that there is a great impact of hormone-related factors and family history in the development of diabetes.***

I. INTRODUCTION

Insulin is a hormone made by the pancreas, that acts like a key to let glucose from the food we eat pass from the blood stream into the cells in the body to produce energy. All carbohydrate foods are broken into glucose in the blood. Insulin helps glucose get into the cells. Not being able to produce insulin or use if effectively leads to raised glucose levels in the blood (known as hyperglycemia). Over the long term high glucose levels are associated with the damage to the body and failure of various organs and tissues. There are three main types of diabetes: Type 1 Diabetes used to be called juvenile-onset diabetes. It is usually caused by an auto-immune reaction where the body's defense system attacks the cells that produce insulin. The reason this occurs is not fully understood. People with type 1 diabetes produce very little or no insulin. The disease may affect people of any age, but usually develops in children or young adults. People with this form of diabetes need injections of insulin every day in order to control the levels of blood glucose in their blood. If people with type 1 diabetes do not have access to insulin, they will die.

Type 2 Diabetes used to be called non-insulin dependent diabetes or adult-onset diabetes, and accounts for at least 90% of all cases of diabetes. It is characterized by insulin resistance and relative insulin deficiency, either or both of which may be present at the time diabetes is diagnosed. The diagnosis of type 2 diabetes can occur at any age. Type 2 diabetes may remain undetected for many years and the diagnosis is often made when a complication appears or a routine blood or urine glucose test is done. It is often but not glucose associated with overweight or obesity, which itself can cause insulin resistance and lead to high blood glucose levels. People with type 2 diabetes can often initially manage their condition through exercise and diet. However, over time most people will require oral drugs or insulin. Both type 1 and type 2 diabetes are serious. There is no such thing as mild diabetes. Gestational diabetes (GDM) is a form of diabetes consisting of high blood glucose levels during pregnancy. It develops in one in 25 pregnancies worldwide and is associated with complications to both mother and baby. GDM and their children are at an increased risk of developing type 2 diabetes later in life. Approximately half of women with a history of GDM go on to develop type 2 diabetes within five to ten years after delivery .Other specific types of diabetes also exist.. The risk factors for type 1 diabetes are still being researched. However, having a family member with type 1 diabetes slightly increases the risk of developing the disease. Environmental factors and exposure to some viral infections have also been linked to the risk of developing type 1 diabetes. Several risk factors have been associated with type 2 diabetes and include: Family history of diabetes, Overweight, Ethnicity, Unhealthy diet, Physical inactivity, Increasing age , High blood pressure, Impaired glucose tolerance (IGT)*, History of gestational diabetes,

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Poor nutrition during pregnancy. Consistently high blood glucose levels can lead to serious diseases affecting the heart and blood vessels, eyes, kidneys, nerves and teeth. In addition, people with diabetes also have a higher risk of developing infections. In almost all high-income countries, diabetes is a leading cause of cardiovascular disease, blindness, kidney failure, and lower limb amputation.

II. MATERIALS AND METHOD

A cross-sectional, multi-centered, strat ified and correlational study was performed with a sam ple of 75 subjects, which included men and women both diabetic and non diabetic aged 20 years and above. Data was collected from diabetic patients by visiting hospitals in Hyderabad like, OMNI Hosptial -Kukatpally, Welcare Hospital (Malakpet) and KIMS Hospital-Secunderabad. Whereas, data from non diabetic subjects was collected by visiting random households, students from Anwarul-Uloom College-Mallepally and female family relatives of diabetic subjects. The purpose of selecting non-diabetic subjects in comparison to diabetic patients was to assess the prevalence and magnitude of risk factors in diabetes afflicted individuals compared to protective factors among non-diabetic individuals. An interview-cum-questionnaire method was used to collect the data from the respondents, who were questioned about their anthropometric information, family and reproductive history, diet and lifestyle. Statistical analysis using graphical representation was applied to show the significant association between diabetes.

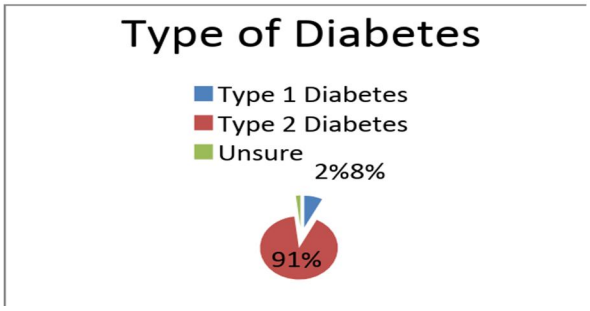
III. RESULTS AND DISCUSSION

III. Table 1 summarizes the male and female count. Total of 75 questionnaires were distributed and all 75 respondents completed the questionnaires fully, giving a response rate of 100%. Of the 75 respondents, 24 were females (55%) aged 30-75 years while 26 were males (45%) aged 30-72 years. About all of the respondents were married, and had education above secondary school level.

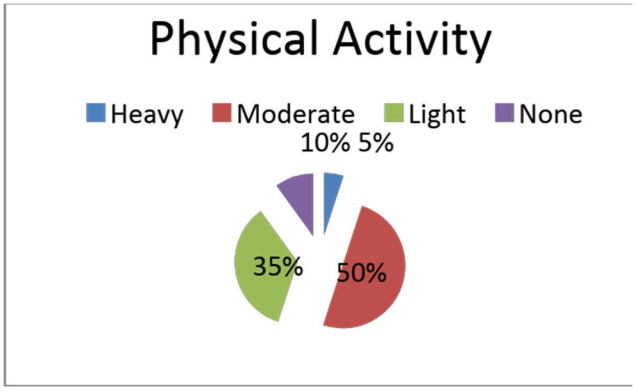
Gender	Frequency, n (%)
Male	26(32%)
Female	24(34%)

Table 1

More than half were treated with oral medication and most had DM for 5-15 years. Female gender was an independent determinant of low general knowledge about diabetes

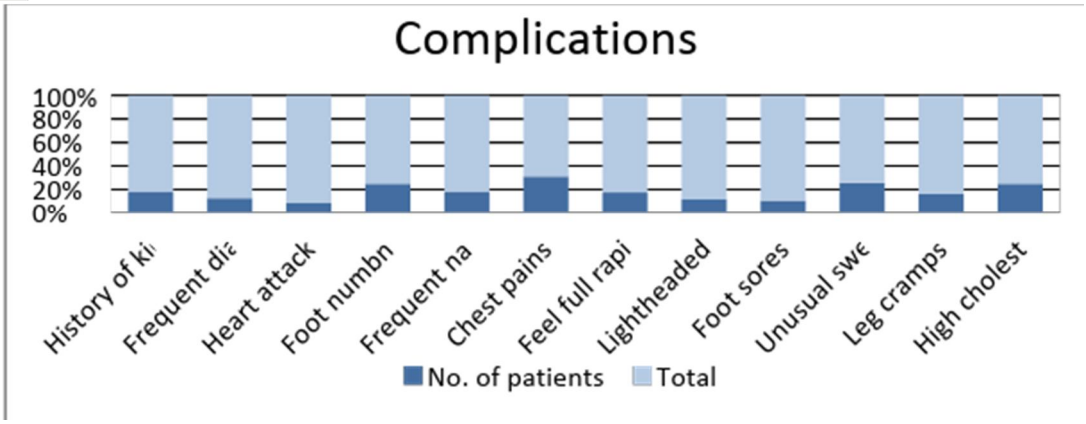


About only 91% of the patients had Type 2 Diabetes, while 2% had Type 1 Diabetes and 2% were unsure. Diabetes Type 2 was found to be more predominant than Type 1 Diabetes occurring mostly in Adults.

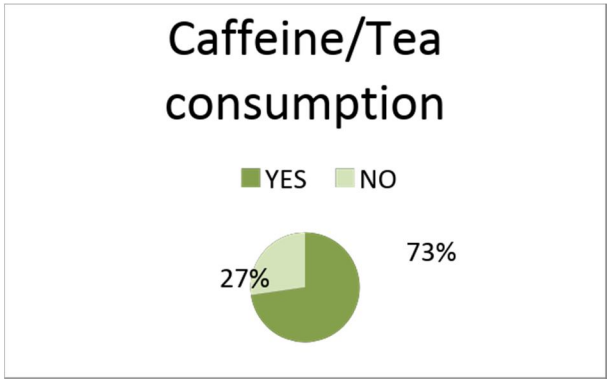


The physical activity resulted as Heavy – 5%, Moderate – 50%, Light – 10%, None – 10%

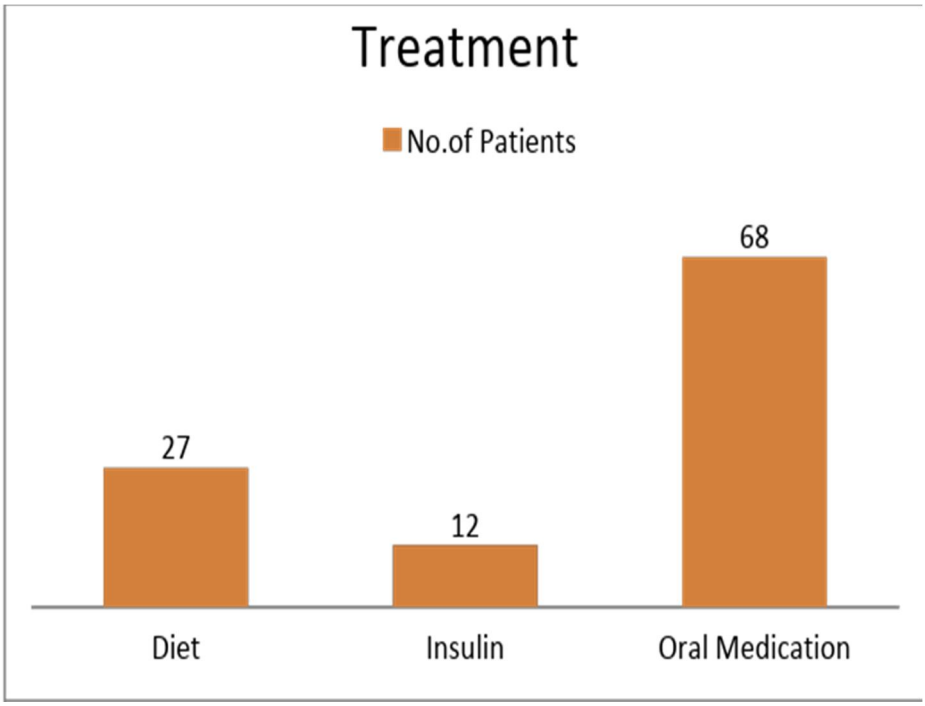
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Most common complications experienced by the patients were chest pains, foot numbness, unusual sweating and high cholesterol. Frequent urination was the next common complications that subjects complained about.

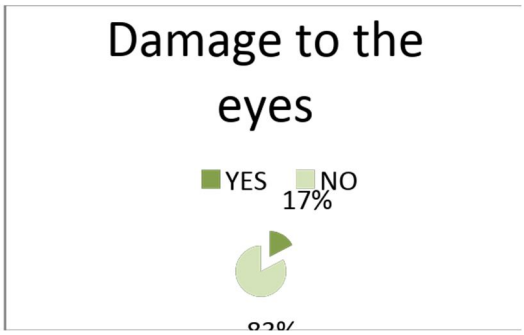


When asked about the consumption of caffeine/tea and artificial sweeteners, 73% chose yes and 92% chose resp.

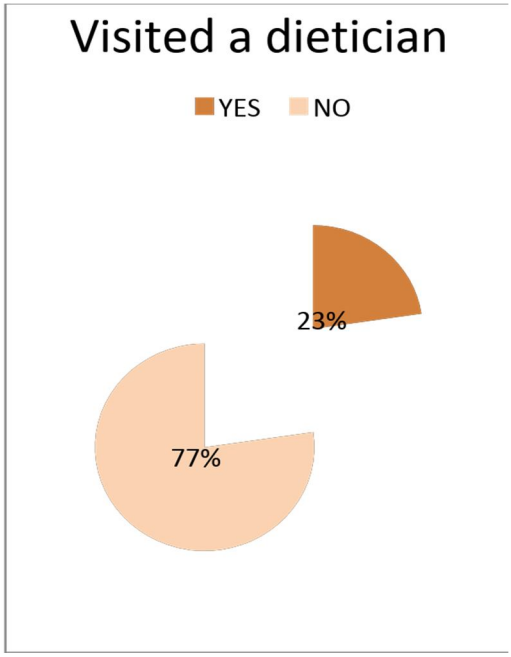


Nearly 68% were on oral medication, while 27 used diet along with oral medication and only 12% were on insulin treatment.

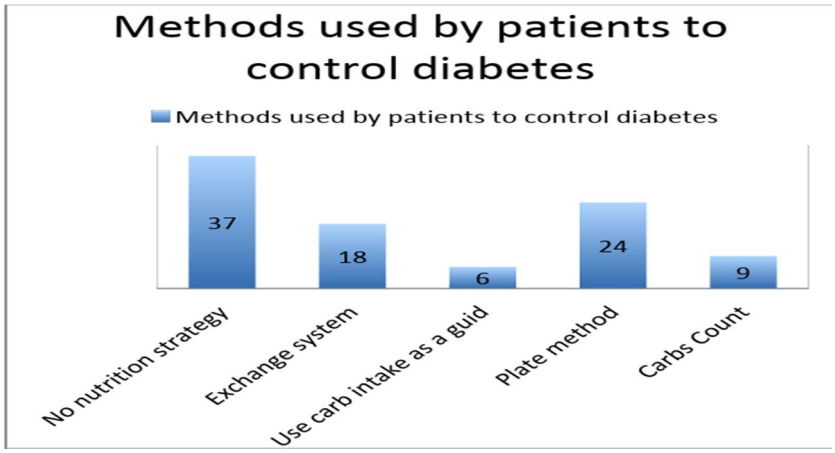
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Only 17% out of 100% had damage to the eyes due to diabetes. The rest of 83% had healthy eyes.



Due to lack of knowledge and leniency only 23% visited a dietician to consult regarding their condtion and to make changes in their daily routine



When enquired about the simple methods to control diabetes 37% didn't adopt any nutrition strategy while 24% individuals used plate method in their daily diet. 18% knew and implied the exchange system. 9% counted their carbohydrate intake in diet. Apart from all of this only 6% individuals use carbohydrate intake as a guide.

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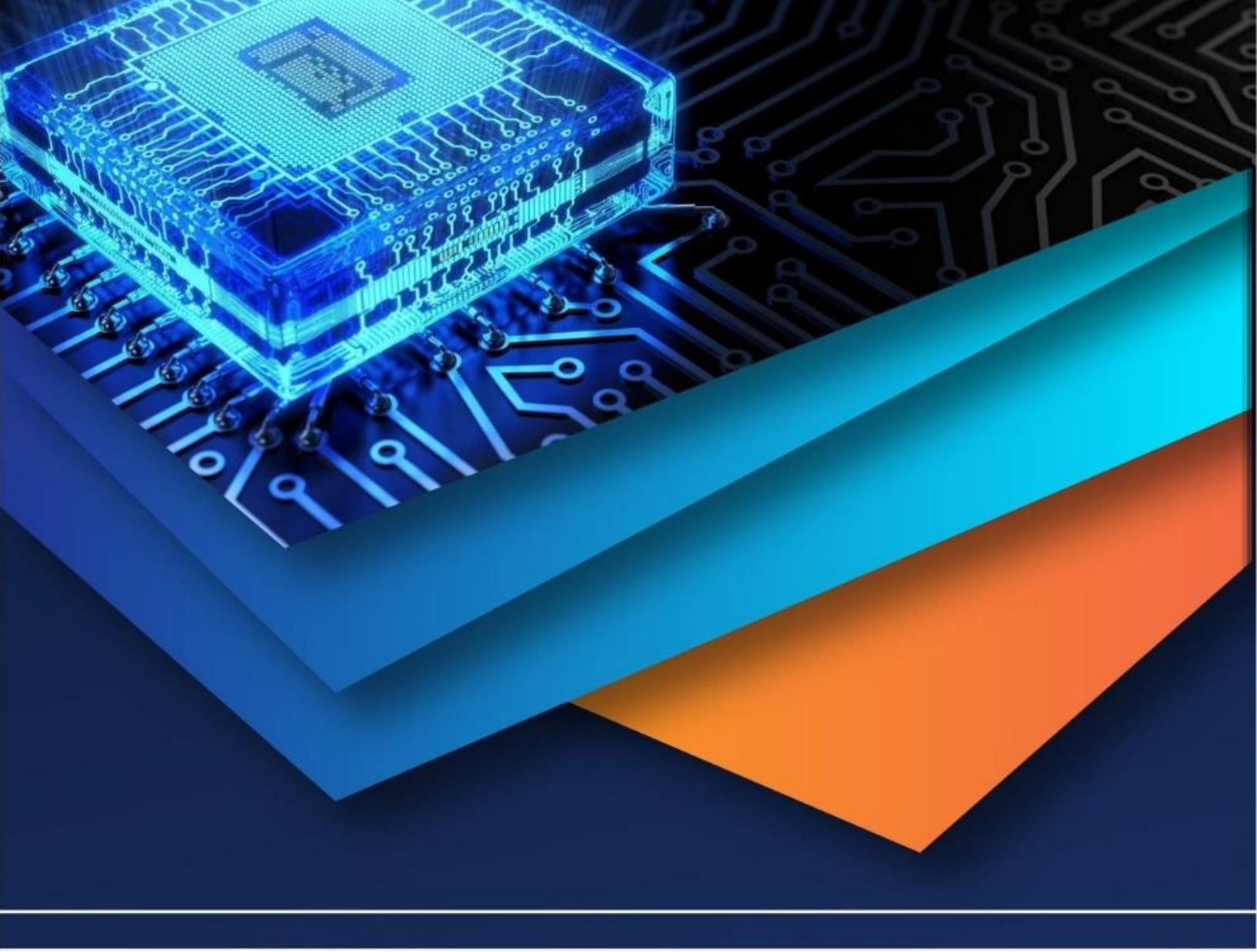
IV. CONCLUSION

The purpose of the survey conducted was to study the dietary habits of patients with Diabetes Mellitus. This survey helps us understand different opinions of respondents about the disease. It was conducted for the age group of 30-75 yrs. Every 1 out of 5 individual has Diabetes making it one of the most common disorders. It was observed that Diabetes was diagnosed more in women than in men. Respondents had least knowledge about the disorder and hence majority of the patients didn't bring any changes in their dietary habits. Major knowledge gaps were in areas related to diet, insulin use and glycaemic control. Low diabetes knowledge was associated with female gender and could be a risk factor for development of diabetes-related complications. Knowledge gaps need to be addressed in diabetes education to prevent development of diabetes-related complications. It was also observed that along with diabetes came up many other complications like high cholesterol, retinopathy and nephropathy. 24female 26 male.

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