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A cross sectional study to determine and compare the level of awareness regarding diabetes mellitus in a peri urban areas.

Abhishek, Raj Kumar Shirumalla and Sonal Setya
Department Of Pharmacology, SGT University, Gurugram(Haryana) – 122505, India

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ABSTRACT

Objective: To determine and compare the level of awareness regarding diabetes mellitus, its complications, and management in male & female diabetic patients.

Methodology: A cross-sectional study was conducted at SGT MEDICAL COLLEGE HOSPITAL AND RESEARCH INSTITUTE, Gurugram. A well-organized questionnaire was used, having fourteen items. The participants were interviewed and the questionnaire was filled out by trained persons (Diabetes Educators). The correct answers were marked as aware and incorrect as unaware and made conversions to percentages. Total 300 diabetic patients were assessed.

Results: The level of awareness regarding diabetes and its management was found inadequate. Amongst, 17.7% of male and 11.3% of female diabetics were aware that why glycemic control is important. Similarly, 17.7% of male and 11.3% of female respondents know the importance of blood glucose monitoring. Only 23 male and 12 female diabetics were aware of hypoglycemia symptoms and management. In our study, 32.2% of males and 24.6 % of females were aware of the risk associated with smoking and drinking for diabetes and that these factors can escalate complications. In our study, only 4% of males and 2.4 % of females were aware that there are classes for diabetes care. In our study 41.4%males and 37.3% of females had significant physician follows up. In this study, 77% of patients claimed to adhere to their treatment only 23% claimed that they were irregular with their medication. The overall level of awareness in female patients as compared to male patients was found low.

Conclusion: The overall level of awareness in both male and female diabetics was found low, and comparatively female patients have poor awareness.

Key Words: Diabetes Mellitus, Awareness, Diabetes education.

I. INTRODUCTION

High blood sugar levels are the major sign of a series of metabolic illnesses known together as diabetes mellitus **[1].** This is due to abnormal Insulin secretion, abnormal Insulin effect, or both. When beta cells in the cells of the pancreas that produce Langerhans are destroyed, insulin-dependent diabetes type 1 results **[2].** Different forms of Type-2 Diabetes are characterized by varying degrees of insulin resistance and degrees of insulin secretory failure **[3]**.415 million individuals, or one in eleven adults, have diabetes mellitus [T2DM], according to the 2015 International Diabetes Atlas. More than 80% of people with T2DM live in poor and middle-income countries, although the disease is as prevalent in high-income nations**[4].** To alleviate this growing problem, health systems are essential for reducing premature mortality and disability rates and enhancing people's overall quality of life**[5]**. An epidemic of type 2 diabetes mellitus has been declared worldwide. Uncontrolled glucose levels lead to T2DM development, increased complications, and increased risk of death, making combination treatment with various medications or Insulin a common need **[6]**. Awareness is the key to dealing with this disease; only by understanding what diabetes is, what causes diabetes, and what raises your risk of developing diabetes can you take steps to prevent it.**[7].** Family doctors often diagnose diabetes mellitus. However, uncontrolled Diabetes results from either a lack of responsiveness to treatment or insufficient therapy**[8].** Blindness, renal failure, vascular and heart disease, etc., are only some of the consequences and comorbidities that might arise. Early diagnosis and treatment are both facilitated by screening individuals before the onset of symptoms. Yet, they may not lessen the prevalence of organ failure**[9]**. Diabetes mellitus is associated with significant rates of morbidity and mortality resulting from micro and macrovascular complications.**[10]**.Macrovascular and microvascular problems may be avoided with early glucose control.**[11]**.The self-care practices of

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individuals are influenced by their knowledge about diabetes; the more they know about their illness, the more they would have self-management skills.**[12].**Patient awareness about diabetes, complications, medication adherence, diet plans ,and lifestyle modifications can establish patient-specific goals, like the effectiveness of medications and decrease in like hood of adverse events in all types of diabetes and in all age groups of the diabetic population**[13].**In a country like India, the prevalence of diabetes among adults in urban areas is as high as 12 to 14 percent. Considering the population of India, the numbers are huge and increasing at a tremendous rate.**[14**].The fact that most the people of Diabetes Mellitus do not experience any symptoms and present only after complications is worrying and therefore it is importance to diagnose and treat it early**[15].**Some people with diabetes may wish they could be less aware of their diabetes. However, in a busy world, diabetes awareness is key.**[16].**If they have Type 2 DM, chances are that it's more or less impossible to lose weight. The medications alone help you gain or at least maintain weight.So there's a lot of misunderstanding out there. It's only by raising awareness that we can help everyone else to understand what we live with.**[17].**By talking about diabetes and the effect is has on our lives, we help keep healthcare administrators and politicians focused on the job of providing us with the care and information we need to successfully live with our diagnosis.**[18].**Poorly-controlled diabetes that affects your nerves or the blood supply of your extremities can lead to diabetic foot sores or ulcers. In addition to taking medication, follow up with your doctor frequently, monitor your A1c, and control your diet and lifestyle.If managed effectively with the right support, treatment and lifestyle changes, diabetes can be successfully controlled and individuals can maintain a balanced lifestyle.**[19].**Education is one of the key components in ensuring better treatment and control of diabetes. There is also evidence to show that increasing knowledge regarding diabetes and its complications has significant benefits including increase in compliance to treatment, thereby decreasing the complications associated with diabetes.**[20,21]**

The objective of this study was to determine the comparative level of awareness of male and female diabetic patients (irrespective of diabetes type), and to how much extent they know about diabetes, associated complications, problems, and management.

II. METHODOLOGY

The study was based on the collection of data over a period of six months, from April 2022 to September 2022.

Study design: Survey-based study of diabetes patients

Study Setting: OPD, General Medicine Department, SGT Hospital

Sample size: Data for 300 patients will be collected

Duration of the study: 6 months from IEC approval

Inclusion criteria:

1. Diabetes mellitus Patients
2. Patients visiting OPD, General Medicine Department, SGT Hospital
3. Males and females both will be studied

Exclusion criteria:

1. Patients > 18 years of age
2. Patients with severe chronic inflammatory disease as co-morbidity

Data have collected using a structured and pre-tested questionnaire with details on demography, behavioral aspects, physical activity, dietary patterns, and medical information. Data was collected by interviewing diabetes patients and filling out questionnaires with the permission of relevant physicians and after obtaining the written consent of the subject. It includes questions about the prevalence of uncontrolled Type-2 diabetes mellitus and the use of Basal Insulin in its management in a peri-urban healthcare tertiary hospital. We have found how many uncontrolled type-2 DM patients receive basic insulin therapy. Knowledge and awareness of different aspects of Diabetes. All questions will be asked in the local language, avoiding the use of specialized medical terms. The questions will be asked directly to the subjects, and their responses will be marked in a structured form, avoiding missing out on any critical point. All the data from 300 subjects will be summarized and tabulated to interpret the data. A correct response will be inferred as aware.

III. STATISTICAL ANALYSIS:-

Descriptive statistics will be used to calculate the frequency, average, and percentage. Statistical analyses will be performed using Graph Pad Prism (Ver. 5.0). Results will be expressed as frequencies (percentages, means) for quantitative variables. The Chi-square test will be used to test differences in proportions. A $P < 0.05$ was considered significant.

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Table:- Awareness of T2DM in Male and Female Patients.

Questions	Awareness in Male Number	% Male Awareness	Awareness in Female Number	% Female Awareness	P value
1-A general idea of diabetes mellitus	38	21.8	25	19.8	0.675
2-Importance of glycaemic control	46	26.4	23	18.3	0.096
3-General awareness of diabetes complications	37	21.3	25	19.8	0.764
4-Why blood glucose monitoring is important?	42	24.1	24	19.0	0.294
5-About insulin (patients on insulin)	33	19.0	21	16.7	0.609
6-Target blood sugar levels	56	32.2	42	33.3	0.834
7-Management of hypoglycemia	52	29.9	31	24.6	0.313
8-Basics of diet modifications /diet misconceptions	65	37.4	43	34.1	0.565
9-Basics of lifestyle modifications	47	27.0	28	22.2	0.344
10-Is it important to keep your diabetes level record?	47	27.0	22	17.5	0.05
11-Have you attended any diabetes classes before?	7	4.0	3	2.4	0.434

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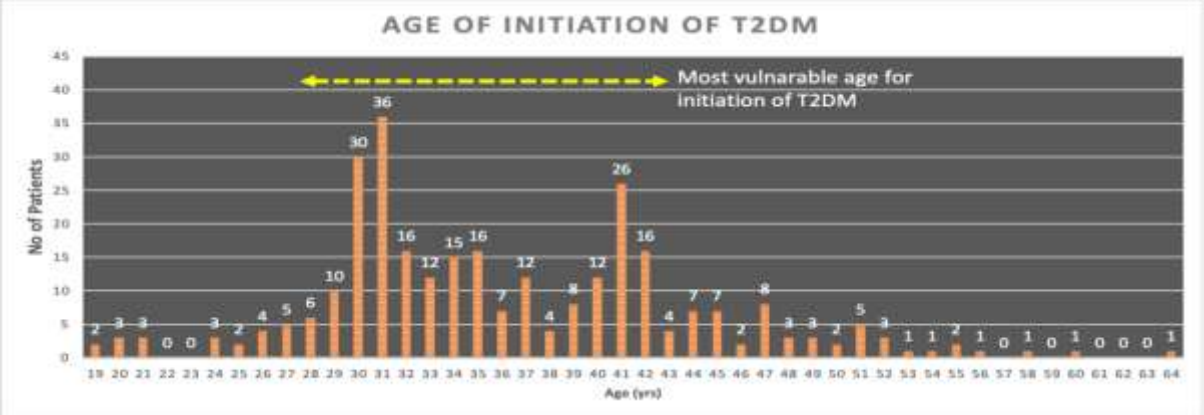
12-Is smoking and drinking a risk factor for diabetes and escalates it complications?	56	32.2	31	24.6	0.153
13-Management of diabetes in during fasting & Pregnancy	29	16.7	48	38.1	0.00003
14-Significance of physician follows up	72	41.4	47	37.3	0.476

The number and respective percentage indicate the individuals aware of the concern variable; total diabetic population n=300; male=174 and female=126 *(Chi-Square Test was used; A p-value of ≤ 0.05 was taken as significant)

Figure 1:-Age of initiation of type-2 diabetes mellitus in the survey of 300 uncontrolled type-2 diabetes mellitus patients. Data are expressed as the number of patients with T2DM at a given age in years.



Another important demographic information was the age of initiation of T2DM. In this Fig1 we can appreciate that in the 300 patients surveyed, the high vulnerability was observed in the age group of 29-42 years. A total of 204 patients of the 300 surveyed were in this age group. This is an exciting observation not reported earlier. Therefore, we have considered this group to understand the disease profile further.

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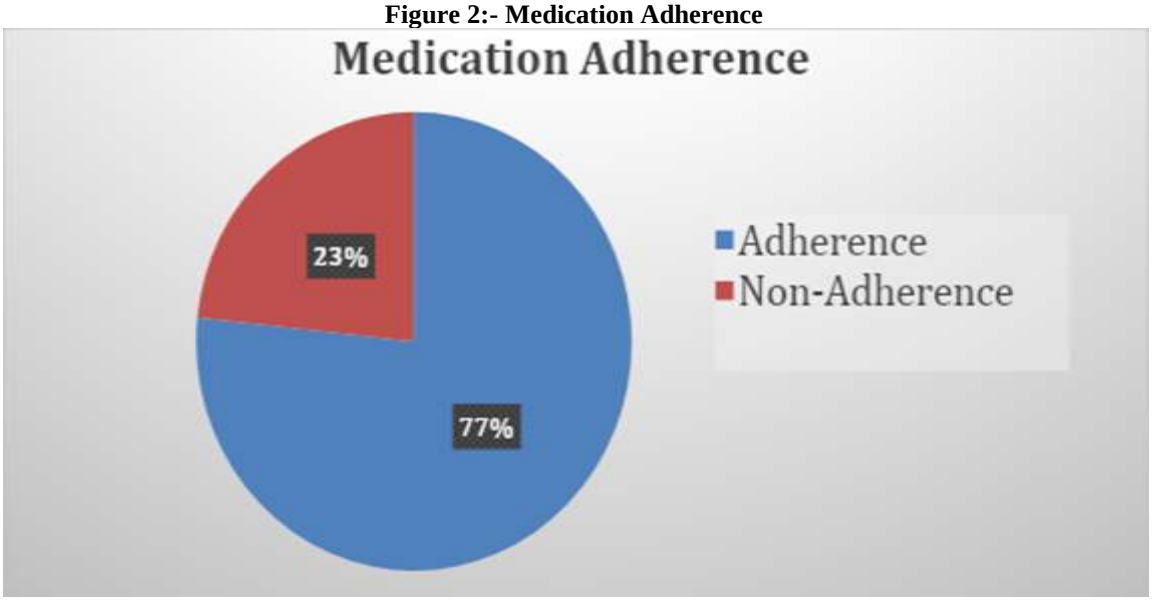
Figure 2:- Medication Adherence



The next obvious question to survey was if the patients were adhering to their therapies. Of the 300 patients surveyed a majority of 77% of patients claimed to adhere to their treatment regimen as shown in Fig 2. Only 23 % claimed that they were irregular with their medication

IV. RESULTS

The level of awareness regarding diabetes and its management was found inadequate. Amongst, 17.7% of male and 11.3% of female diabetics were aware that why glycemic control is important. Similarly, 17.7% of male and 11.3% of female respondents know the importance of blood glucose monitoring. Only 23 male and 12 female diabetics were aware of hypoglycemia symptoms and management. In our study, 32.2% of males and 24.6 % of females were aware of the risk associated with smoking and drinking for diabetes and that these factors can escalate complications. In our study, only 4% of males and 2.4 % of females were aware that there are classes for diabetes care. In our study 41.4%males and 37.3% of females had significant physician follows up. In this study, 77% of patients claimed to adhere to their treatment only 23% claimed that they were irregular with their medication. The overall level of awareness in female patients as compared to male patients was found low.

V. CONCLUSION

In summary, the present study provides a glimpse of the current status of knowledge and awareness of diabetes in our chosen regions in India. The study emphasizes the need for improvement in knowledge and awareness among diabetic subjects to enhance diabetes care and manage its complications. We have shown that > 90% of patients surveyed had suboptimal glucose metabolism control or uncontrolled T2DM. Supplementing Basal insulin therapy with OHA does help in achieving a better clinical outcome. For this special awareness, initiatives are highly recommended and be implemented to achieve a better prognosis.

Awareness of different aspects of T2DM management and control is abysmally low in peri-urban areas of Gurugram among both men and females. Although, this ignorance is furthermore acute in rural populations than in urban ones, and there is an urgent need to educate communities. Effective strategies to manage T2DM are a priority, considering the extent of the disease spread, suboptimal disease control, and low awareness

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