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STUDY ON KNOWLEDGE, ATTITUDE AND PRACTICES OF DIABETES MELLITUS AMONG DIABETIC PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: Diabetes is one of the leading causes of death in the world. India currently represents 49% of the world's diabetes burden, with an estimated 72 million cases in 2017. Poor awareness, negative attitudes and inadequate self-care practices among diabetic patients are some of the important variables influencing the progression of diabetes and its complications, which are largely preventable through education and involvement of the patient. **Objective:** The objective was to assess the Knowledge, Attitude and Practice (KAP) regarding diabetes mellitus among diabetic patients attending General Medicine OPD department. **Materials and Methods:** Cross-sectional, questionnaire based study was done in 90 diabetic patients over a period of 6 months from October 2018 to February 2019 at NMCH&RC Raichur. **Results:** Most of the patients were in the age group of 40-50 years (37.7%) and female patients were more 51(56.66%) than the male patients 39 (43.3%). Majority of the patients were illiterates 84(93.3%). After analyzing the KAP scores, it was found that patients had poor knowledge, attitude and good practice towards Diabetes. The mean score of knowledge, attitude, and practice were found 1.99 (± 2.803), 1.167 (± 0.753) and 3.711 (± 2.057) respectively. **Conclusion:** These findings may be due to the illiteracy level. I strongly feel that there is a need to design and develop individualized diabetes educational program and also clinical pharmacist trained in diabetes management counsel patients during every visit could help to improve the knowledge and attitude of the diabetic patients.

KEYWORDS: Diabetes mellitus, knowledge, Attitude, Practice, Patient Counselling.

INTRODUCTION

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar. Hyperglycaemia, or raised blood sugar, is a common effect of uncontrolled diabetes and over time leads to serious damage to many of the body's systems, especially the nerves and blood vessels.

According to WHO, in 2014, 8.5% of adults aged 18 years and older had diabetes. In 2016, diabetes was the direct cause of 1.6 million deaths and in 2012 the cause of another 2.2 million deaths by higher-than-optimal levels of blood glucose, through an increased risk of cardiovascular and other diseases. India currently represents 49 percent of the world's diabetes burden, with an estimated 72 million cases in 2017, a figure expected to almost double to 134 million cases 2025.

At 5 deaths per 1,00,000 population, Tamil Nadu had the highest death rate from diabetes among Indian states, followed by Punjab (44) and Karnataka (42), all significantly higher than the national averages (23).[1]

Classification of diabetes mellitus

The vast majority of diabetic patients are classified into one of two broad categories: type 1 diabetes caused by an absolute deficiency of insulin or type 2 diabetes defined by the presence of insulin resistance with an inadequate compensatory increase in insulin secretion. Women who develop diabetes due to the stress of pregnancy are classified as having gestational diabetes.

A proper assessment and understanding of KAP factors is particularly helpful in the area of chronic condition such as DM for which prevention and control necessitate a life long adoption of healthy lifestyles. Adequate knowledge about a disease has a potential impact on the patient's attitude and practice in the management of their illnesses.

However, a little information on the assessment of KAP's is available from developing countries where DM has been recognized as a major health problem. The knowledge and attitudes of the patients have an impact on the management of the disease condition which helps in improving their condition and also to control the complications.[2]

Patient involvement is paramount for the successful care of diabetes. The principal task of the health care team is to give each patient knowledge, self- confidence and support. Patients with diabetes and their families provide 95% of their care themselves, and, as a consequence, educational efforts to improve self- management are central components of any effective treatment plan.

The role of self-management behaviour is clear even in studies that address relationships between pharmacologic treatment and outcomes at the physiologic level. For example, both the Diabetes Control and Complications Trial (DCCT) and the United Kingdom Prospective Diabetes Study, (UKPDS) required patients to adhere to complex and intensive treatments over long periods of time. The primary goals of DM management are to reduce the risk for microvascular and macrovascular disease complications, to ameliorate symptoms, to reduce mortality, and to improve quality of life. Appropriate care requires goal setting for glycemia, blood pressure, and lipid levels, regular monitoring for diabetic complications, dietary and exercise modifications, appropriate medications, appropriate self monitoring of blood glucose (SMBG), and laboratory assessment of the aforementioned parameters.

Studies have confirmed that the complications of diabetes can be reduced by proper control of blood glucose. The proper control is dependent on the patient's adherence to medications, life style modifications, frequent monitoring of blood glucose, etc and can be influenced by proper education and counselling of the patient. Pharmacists, being one of the indispensable members of the health care team, have an immense responsibility for counselling these patients.[3]

Diabetes, if untreated, can lead to various complications such as neuropathy, nephropathy, retinopathy, hyperlipidema, diabetic foot ulcers, infections, etc. These complications adversely affect the quality of life of the patient. Quality of life is a multidimensional concept referring to a person's total well being, including his or her psychological, social, and physical health status. It is also well established that pharmacist provided patient counselling improves the quality of life of the diabetic patients.

Role of pharmacists in diabetes management

Because of the rapid expansion of available therapeutic agents to treat diabetes, the pharmacist's role in caring for diabetic patients has expanded. The pharmacist can educate the patients about the proper use of medication, screening for drug interactions, explain monitoring devices, and make recommendations for ancillary products and services.

The pharmacist, although not the health care professional to diagnose diabetes, is important in helping the patient maintain control of their disease. The pharmacist can monitor the patient's blood glucose levels and keep a track of it. During their contact, the patients can ask the pharmacist any questions they did not ask the physicians and can get further information regarding diabetes. The pharmacist can also counsel the patients regarding insulin administration regularly so that the onset of complications can be postponed by having tight glycemic control. Another important role of pharmacist is always being available to answer the questions of the patients. Overall, it is the pharmacist's role to help a diabetic patient in the best possible way to cope with their disease.[3]

Our study main aim is to assess Knowledge, Attitude and Practice (KAP) regarding diabetes mellitus among diabetic patients.

MATERIALS AND METHODS

This cross-sectional study department with a sample size of 90 patients which included both males and females was carried out in general medicine out-patient department of Navodaya Medical College Hospital and Research Center, Raichur. This study was approved by Committee by issuing ethical clearance certificate. A suitably designed KAP questionnaire was filled in at a face to face interview with participant.The data collection form contains information about socio demographic characteristics, KAP questionnaire about patient awareness on illness, risk factor, symptoms, complications, self-care practices, lifestyle modifications and management. The questionnaire had 28 questions (knowledge-18, attitude-4, practice-6 questions) each correct answer was given a score of ‘one’ and each wrong answer was given a score of ‘zero’. The awareness was assessed by giving scores based on the answers given by the participants during the interview.

Inclusion Criteria

- All diabetic patients of age between 18 to 80 years old irrespective of gender visiting general medicine out-patient department
- Patients who are willing to participate and give oral consent

Exclusion Criteria

- All In-patients, pediatric patients, pregnant women including those with gestational diabetes and lactating women and patients who are not willing to give oral consent to participate in the study.

RESULTS

The data collected from different patients are presented in figures (4-11) and tables (11-14)

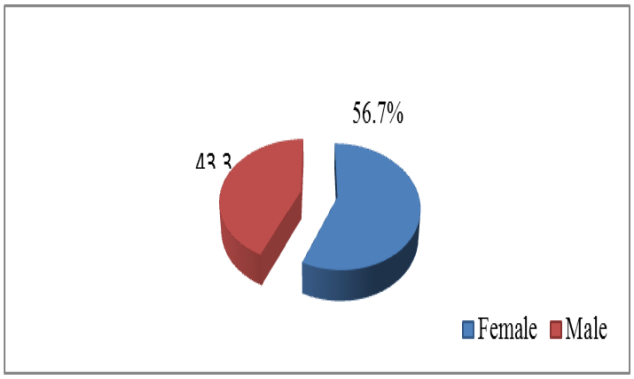

Fig 1: Distribution according to gender (n=90).

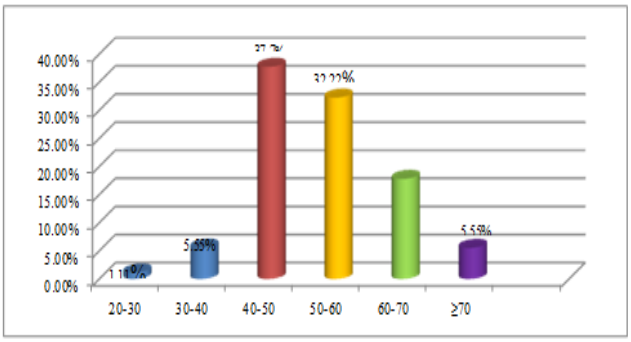

Fig 2: Distribution according to age group (n=90).

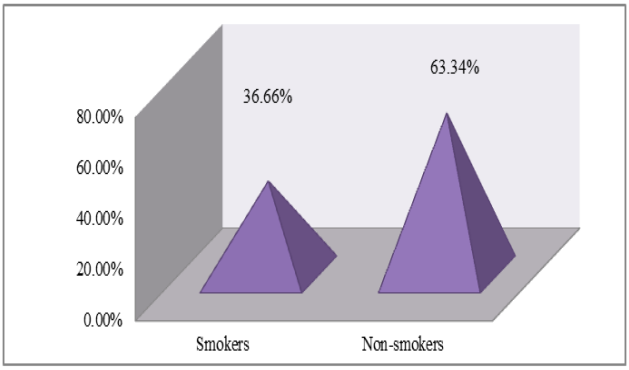

Fig 3: Distribution according to smoking habit (n=90).

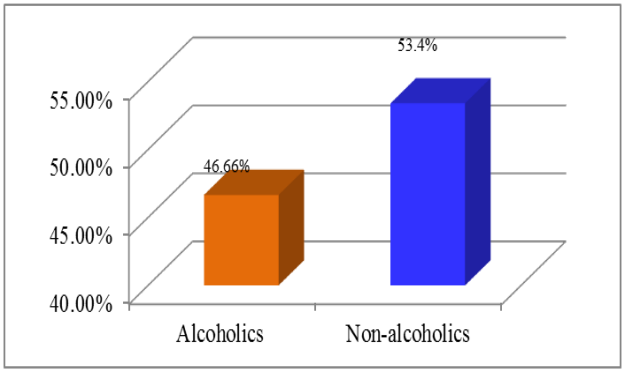

Fig 4: Distribution according to alcohol consumption (n=90).

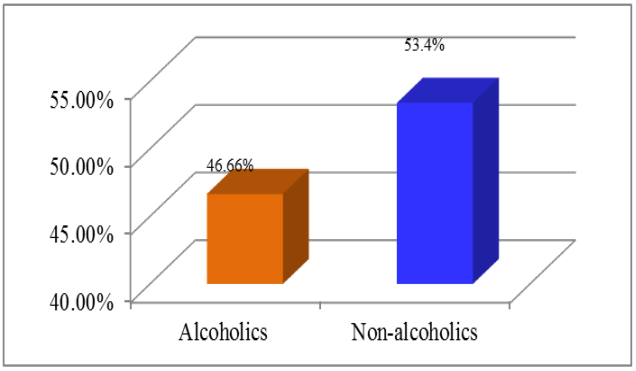

Fig 5: Distribution according to Family History of Diabetes Mellitus (n=90).

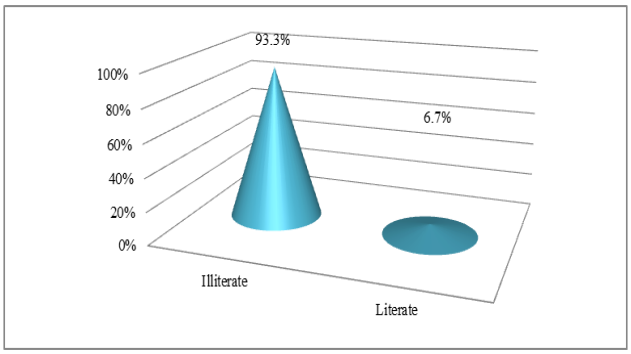

Fig 6: Distribution according to Educational Status (n=90).

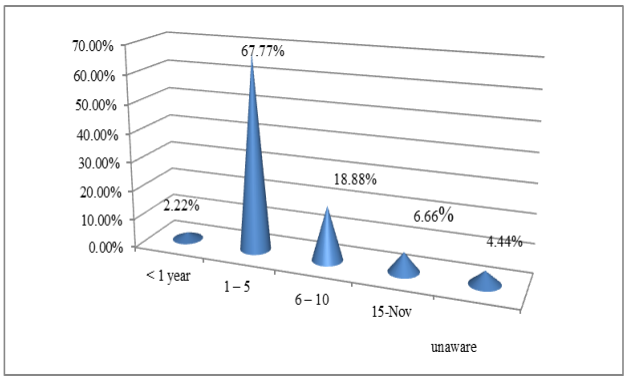

Fig 7: Distribution according to Duration of disease (n=90).

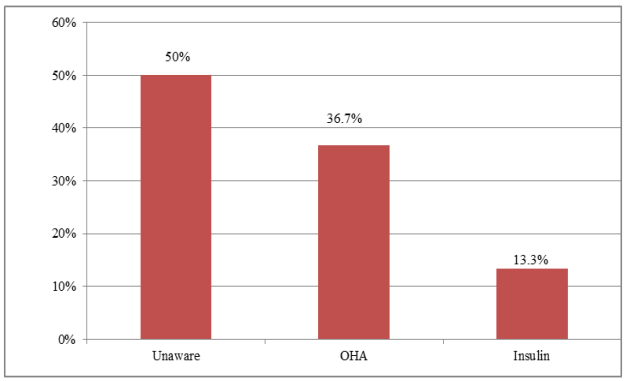

Fig 8: Distribution according to types of medication (n=90).

Table 1: Assessment of kap among diabetic out patients (n=90).

Sl No	QUESTIONS	Yes	No
1	Diabetes is a condition in which the body contains..	13 (14.44%)	77 (85.56%)
2	The Major cause of diabetes is…	10 (11.11%)	80 (88.89%)
3	The symptom(s) of diabetes is/are ….	39 (43.33%)	51 (56.67%)
4	Diabetes, if not treated…	3 (3.33%)	87 (96.67%)
5	The most accurate method of monitoring diabetes is….	3 (3.33%)	87 (96.67%)
6	In a diabetic patient, high blood pressure can increase or worsen…	4 (4.44%)	86 (95.56%)
7	A diabetic patient should measure his or her blood pressure.	29 (32.22%)	61 (67.78%)
8	The lifestyle modifications (s) required for diabetic patients is/are…	04 (4.44%)	86 (95.56%)
9	A diabetic patient should have his or her eyes checked ….	5 (5.55%)	85 (94.45%)
10	Regular urine tests will help in knowing….	19 (21.11%)	71 (78.89%)
11	The important factors that help in controlling blood sugar are	7 (7.77%)	83 (92.23%)
12	A regular exercise regimen will help in….	20 (22.22%)	70 (77.78%)
13	The well-balanced diet includes….	8 (8.88%)	82 (91.12%)
14	For proper foot care, a diabetic patient….	0	90 (100%)
15	Treatment of diabetes comprises…	3 (3.33%)	3.33% (16.67%)
16	Diabetes cannot be treated with….	0	90 (100%)
17	Upon control of diabetes , the medicines	2 (2.22%)	88 (100%)
18	How do you manage hypoglycemic symptoms…?	0	90 (100%)
19	Do you exercise regularly…?	13 (14.44%)	77 (85.56%)
20	Are you following a controlled and planned diet…?	13 (14.44%)	77 (85.56%)
21	Do you miss taking the doses of your diabetic medication…?	75 (83.33%)	15 (16.67%)
22	Are you aware of blood sugar levels falling below normal when you are taking drugs …?	1 (1.11%)	89 (98.89%)
23	When was your blood pressure checked last…?	69 (76.66%)	21 (23.34%)
24	When did you have your last eye examination…?	27 (30%)	63 (70%)
25	When was your last urine exam done?	68 (75.55%)	22 (24.45%)
26	When was your last blood sugar checked?	69 (76.66%)	21 (23.34%)
27	When did you have your last lipids checked?	69 (76.66%)	21 (23.34%)
28	When was your last visit with your physician?	70 (77.77%)	20 (22.23%)

Table 2: Mean scores of the patients.

Sl no	Variables	Mean ± SD score
1	Knowledge	1.911±2.803
2	Attitude	1.167±0.753
3	Practice	3.711±2.057
4	Overall	6.789±5.613

Table 14: Response towards knowledge, attitude and practice.

		N (%)	Mean	Std. Deviation	95% Confidence Interval of the Difference		t Value	P Value
					Lower	Upper		
Knowledge	Good Score	5 (5.6)	10.6	0.89443	7.36512	11.01436	10.021	<0.001
	Poor Score	85 (94.4)	1.4103	2.0286				
Attitude	Good Score	14 (15.6)	3.1429	0.36314	2.02707	2.46917	20.211	<0.001
	Poor Score	76 (84.4)	0.8947	0.38571				
Practice	Good Score	71 (78.9)	4.7042	0.7999	4.11481	4.87259	23.57	<0.001
	Poor Score	19 (21.1)	0.2105	0.41885				

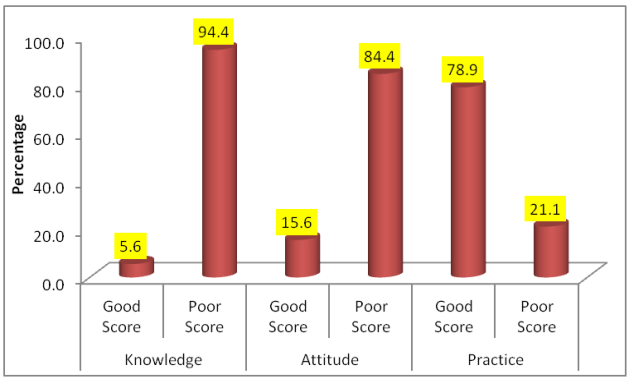

Fig 9: Response towards knowledge, attitude and practice.

DISCUSSION

Out of 90 patients 51 (56.66%) were female and 39 (43.33%) were male **(fig 1).** The analysis showed that diabetes occurs more in women than in men, which get confirmed by demographic results and is largely due to culture, tradition, lifestyle difference and obesity among female. This finding is in accordance with results of the previous studies conducted by Bimani Z et al.[4]

Among the total prescriptions collected, age was taken into consideration by dividing into 6 age groups being kept at interval of 10 years each .The large number of patients were in age group of 40–50years (37.7%) followed by 50-60 years (32.2%), 60-70 years (17.77%), 30-40 and > 70 years (5.55%), and least were found in the age group of 20-30 years (1.11%) **(fig 2)** this data suggest that middle aged and older adults are at higher risk due to combined effects of increasing insulin resistance and impaired pancreatic islet function with aging associated with age related adiposity and physical inactivity.

Among 90 patients, 57 (63.34%) were non-smokers, 33 (36.66%) were smokers as shown in **(fig 3).** It was also observed that 48 (53.4%) were non-alcoholics, 42 (46.6%) were alcoholics as mentioned in **(fig 4).**

(Fig 5) shows Most of them were uneducated 84 (93.3%), similar findings have been reported by Zeyana S et al.[4]

About 78 (86.6%) patients reported negative family history of diabetes mellitus which is shown in the table and figure . a study conducted in Erode by Malathy R et al., showed negative family history of DM. **(fig 6).**

This study was found that although 67.7% of patients presented with DM from 1 to 5 years of age flowed by 6 to 10 years (18.8%) as shown in the table and figure the study by Malathy et al.[5] showed similar findings as shown in **(fig 7).**

As shown in **(fig 8)** illustrates patients prescribed with insulin and with oral hypoglycemic agents. This data shows that most of the patients prescribed oral hypoglycemic agents (36.7%) which may be due to its advantage like no weight gain, no hypoglycemia etc. this results were supported Zeyana S et al.[4]

Patient's awareness and knowledge about the disease is the greatest weapon to fight against diabetes. In this study it was found that better practice of diabetes management among the participants irrespective of their

educational status. But the lack of knowledge and awareness of diabetes found in this study participants as well as in the community are the important weakness to be addressed. The mean score of knowledge, attitude, and practice were found 1.99 (± 2.803), 1.167 (± 0.753) and 3.711 (± 2.057) respectively. which were supported by the results of the previous study conducted by Mehta RS et al[7]., and Rahaman S K et al.[8]

Knowledge Attitude and Practice of patients regarding Diabetes Mellitus

Knowledge level of patients regarding Diabetes Mellitus

Among 90 patients, 13 patients (14.44%) knew that diabetes is a disease and only 10 patients (11.11%) knew the major causes of diabetes. About 39 patients (43.33%) knew the symptoms of diabetes. Only 3 patients (3.33%) knew the complications of diabetes if not treated. Only 3 patients (3.33%) knew the accurate method of monitoring the diabetes. 4 patients (4.44%) knew that high blood pressure can worsen diabetic condition. About 29 patients (32.22%) were aware that the diabetic patient should measure his or her blood pressure. Only 4 patients (4.44%) knew about the lifestyle modifications required for diabetic patient. Only 5 patients (5.55%) knew that a diabetic patient should have his or her eyes checked. 19 patients (21.11%) were aware that regular urine tests will help in knowing the diabetes condition. Only 7 patients (7.77%) were aware about the important factors that help in controlling blood sugar. About 20 patients (22.22%) were aware regular exercise regimen has beneficial role in diabetes condition. Only 8 patients (8.88%) knew the well-balanced diet of diabetes mellitus. None of the patients were aware about proper foot care in diabetes condition. Only 3 patients (3.33%) knew about the treatment of diabetes. 2 patients (2.22%) knew upon control of diabetes the medicines can be stopped immediately. None were aware about the hypoglycemic symptoms of diabetes mellitus. This data showed that the patients have poor knowledge regarding diabetes with was shown in Table 1**.**

In contrast to basic knowledge, specific knowledge on Diabetes Mellitus was less. For example very few participants knew about major causes, consequence if diabetes not treated accurate method to monitor diabetes, important factors that help in controlling blood sugar. This may be due to poor educational status of the participants. All these findings were comparable with the study done by Upadhyay D et.al.[9]

Attitude level of patients regarding Diabetes mellitus

Very few patients 13 (14.44%) were on regular exercise. Only 13 patients (14.44%) followed planned and controlled diet. Majority of the patients 75 (83.33%) were missing the dose of diabetic medication. Only one patient (1.11%) knew about blood sugar levels falling below normal while taking the drugs this data suggest that patients had poor attitude towards diabetes mellitus as shown in Table 1.

Here it was observed that participants had a negative attitude towards diabetes mellitus i.e., they were unaware about the need of regular exercise, controlled diet these results were consistent to previous study conducted by Upadhyay D et.al.[9]

Practice levels of patients regarding Diabetes Mellitus

Majority of the patients (69, 76.66%) knew that when the last BP checkups was done and 27 patients (30%) remember when they had their eye examination done. About 68 patients (75.55%) knew their last urine checkups. About 69 patients (76.66%) remember about last blood sugar checkup and 69 patients were aware about last lipid checkup about 70 patients (77.77%) remembered their last visit to physician. This data showed that the practice o the patients towards diabetes mellitus were impressive and the same illustrated in Table no 12.

From the results o the practice questions, it was found that the participants had good knowledge regarding the importance of frequent health.

CONCLUSION

The overall study concludes that the patients had poor knowledge, attitude and good practices towards diabetes. The mean score of knowledge, attitude, and practice were found 1.99 (± 2.803), 1.167 (± 0.753) and 3.711 (± 2.057) respectively. These findings may be due to the illiteracy level. This suggests that the need for educational interventions to improve to knowledge and attitude of the diabetes patients. I strongly feel that there is a need to design and develop individualized diabetes educational program that could help in diabetes management and improvement of quality of life. This study encourage a positive outlook: all that is required is that a diabetes educator preferably a clinical pharmacist trained in diabetes management counsel patients during every visit and I believed that such counseling program could definitely have immense impact on the profession of pharmacy, giving it an even greater place in the medical management of patients.

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