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A Study to Assess the Knowledge, Attitude and Practice about Diabetes among Diabetic Patients in Pondicherry

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ABSTRACT

The prevalence of diabetes mellitus is growing rapidly worldwide. Education to diabetic patients would be more effective if the level of knowledge, attitude and practices of the patients is known. This study was conducted to assess the knowledge, attitude and practice regarding diabetes among patients with diabetes mellitus in Pondicherry. The cross sectional questionnaire based descriptive study was conducted among100 diabetes patients. Out of 100 patients 41% were males and 59% females. Majority of the patients were in the age group of 40 – 59 years. The knowledge about symptoms (35%) and complications(16%) was poor. 50 – 60% of the patients had positive attitude towards physical exercise and periodic eye, blood pressure examination .The practice regarding moderate physical exercise and regular blood glucose, eye, lipid profile, cardiac status monitoring were found to be low. Only 44% of them follow proper foot care in indoor / outdoor. Though more than fifty percent of the patients had positive attitude regarding diabetes, but their knowledge and practice were low in most areas of diabetes care indicating the need for additional educational efforts. The results of this study indicated that diabetes education should be improved.

Keywords: Type 2 diabetes, knowledge, attitude, practice.

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INTRODUCTION

The non-communicable diseases, particularly the upsurge of diabetes mellitus, pose a grim challenge to India in this century. Diabetes mellitus (DM) is characterized chronic hyperglycemia resulting from a diversity of etiologies, environmental and genetic factors [1]. The World Health Organization (WHO) describes diabetes mellitus as the most common endocrine disease in the world [2]. It is estimated that there are currently 285 million people with diabetes worldwide and this number is set to increase to 438 million by the year 2030[3]. According to the recent WHO report, India today leads the world with over 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030[4].

Epidemiological studies from different parts of our country showed that Diabetes in adult urban Indian population varies from 5.4% in northern states to as high 12.3 – 15.55 in Chennai, 5.6% in Pondicherry, South India,12.3 – 16.8% in Jaipur, Central India while 3/5 of rural population above the age of 15 years have diabetes[5,6,7].

Many causes have been postulated for the rise in the number of cases, including urbanization, sedentary lifestyles, poor nutrition, and obesity. If left untreated, diabetes leads to various complications such as neuropathy, nephropathy, retinopathy, hyperlipidemia, foot ulcers, and infections [8]. So people with DM who wish to live normal lives need to have knowledge about their illness and the management of DM [9]. Knowledge is the greatest weapon to fight against diabetes. Proper guidance and education of the patients will show significant improvement in diabetes management. And the education will be effective only if the characteristics of the patients' knowledge, attitude and practices about diabetes are known. KAP surveys provide baseline for evaluating intervention programs.

Knowledge refers to their understanding about diabetes; Attitude refers to their feelings as well as any preconceived ideas that they may have towards the disease; Practice refers to the ways in which they demonstrate their knowledge and attitude through their actions. In India various studies are showing poor knowledge of diabetic patients regarding the disease [10, 11]. Limited studies are available assessing the existing knowledge, attitudes and practices among diabetics in Pondicherry population. So this study was taken up to evaluate the diabetic patients of our area regarding their awareness about DM, its presentation, various complications, management and prevention measures.

METHODS AND MATERIALS

The cross sectional descriptive study was conducted in the diabetic outpatient department of Sri Manakula Vinayagar Medical College and Hospital of Pondicherry during the month of February 2012. All diabetic patients visited the clinic were enrolled in the study after getting informed written consent. Purpose of the study was explained to the patients. The structured questionnaire containing both open and closed ended questions was prepared by the investigators and suitably modified after consultation with experts and was used as a data collection tool. The participants were interviewed individually by the investigator with the

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questionnaire both in English and local language Tamil focused on the Knowledge, attitude and practice (KAP) of diabetes mellitus including basic characteristics (Annexure -1). The patient profile includes age, gender, and educational status, duration of disease, diabetic family history, smoking status and medication taken. The KAP questionnaire consisted 21 questions (knowledge-10, attitude-4 and practice-7 questions). The data were entered in MS Excel and analyzed using the SPSS version 12.0 statistical software and presented in terms of proportions.

Annexure -1
KAP questionnaire
Demographic data
Name :
Age(years) : 30 - 39
40 - 49
50 – 59
60 – 69
>70
Sex : Male / Female
Educational status : Illiterate
Primary school
Sec. school
Graduate & above
Duration of diabetes : <1
(years) 1 – 5
5 -9
>10
Diabetic history in family : present / absent
Smoking status : yes / no
Blood pressure :
Blood sugar :
Drugs prescribed :
Knowledge
1. Do you know what is diabetes mellitus?
a) Yes b) No c) To some extent
2. Diabetes is caused by
a) consuming more sugar b) Lack / defect of insulin
c) Hereditary d) don't know e) others (specify)
3. Any other member have / had diabetes?
a) Yes b) No c) don't know
if yes mention the relationship with you.

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4. Common symptoms of diabetes is/are.
a) weight loss / gain b) frequent urination c) frequent thirst & hunger d) All
e) others (specify)
5. In uncontrolled diabetes the blood sugar is
a) high b) low c) don't know d) others (specify)
6. The most accurate method of monitoring DM is
a) checking blood glucose levels b) checking urine sugar c) don't know
d) others (specify)
7. Diabetes can be controlled with treatment?
a) Yes b) No c) don't know d)others (specify)
8. Mode of treatment of diabetes include
a) Diet control / physical exercise b) Insulin/oral drugs c) anti biotic d) don't know e)others (specify)
9. The parts of the body mainly affected by Diabetes is/ are?
a) eyes b) kidneys c) heart d)peripheral nerves e) others (specify)
10. Are you scared of taking Insulin injection?
a) Yes b) No c) don't know d) others (specify)
Attitude
1. Diabetes can be cured completely
1) Agree 2) Neutral 3) Disagree
2. Doing regular exercise will maintain / improve blood sugar levels.
a) agree b) Neutral c) Disagree
3.Symptoms occurring due to hypoglycemia can be controlled?
a) agree b) Neutral c) Disagree
4. All diabetics should have a periodic eye/BP/Cardiac examination.
a) Agree b) Disagree c) Neutral
Practice
1. Are you taking diabetes medication regularly?
a) Yes b) No c) Rarely / sometimes
2. How often you check your blood sugar in home / lab?
a) Once a month b) twice a month c) once in 6 months d) occasionally.
3. Have you modified your dietary plan & continuing the same after diagnosing diabetes?
a) Yes b) No c) Sometimes
4. How often you do moderate physical activity for about 30 – 45 min (cycling, walking, yoga, exercise etc.,)
a) Once a week b) twice a week c) 5 times a week d) Rarely.
5. Are you aware of special blood test called HbA1c to look at your long-term or 'average' blood glucose level.
a)Yes b) No
6. How often you check your eye /blood pressure/lipid profile/cardiac status?
a) Once a year b) Once in 6 months c) once in 3 months d) occasionally
7. Do you follow proper foot care in indoors / out doors ?
a) Yes b)No c) occasionally.
Consent form
I am willing to provide information. My responses can be used

without any change in content.
Yes: _____ No: _____
[Please Sign]
Form checked by :_____

RESULTS

Overall 100 patients participated in this study and all of them were able to complete the study. Out of one hundred, 41patients were males and 59 were females. The maximum numbers of patients (38%) were in the age group of 50- 59 years followed by age group 40 - 49 years (24%). The lowest(10%) were more than 70 years old. 21% patients were illiterate and the remaining were educated but considerable number of patients (36%) were educated only up to primary school level, 25% were educated up to secondary school, and graduate level only 18%. Among the study group the duration of diabetes diagnosed within one year was 16%, between 1 to 5 years 58%, between 5 to 9 years 12 % and more than 10 years was 14% (Figure 1). 50 % of the patients reported positive diabetic family history and the remaining patients didn't have. The family members affected were father, mother (or) both and other first and second degree relatives. 28% of patients had positive smoking history and 72% were not. Oral hypoglycemic drugs were commonly prescribed to major number of patients (92%) and insulin was taken by only few (8%). Drugs like cardiovascular drugs, hypolipidemic agents and other drugs were also taken by considerable number of patients (26%). Patients with fasting blood sugar ≥120mg/dl are 54% and <120 mg/dl are 46%, post prandial ≥180mg/dl are 78% and <180mg/dl are 22%. Demographic data is shown in the Table 1.

Knowledge on diabetes:

Table 2 - represents response of patients' knowledge about DM. The finding of the present study revealed deficiencies in general aspects of diabetic patients' knowledge (9%). Their knowledge about symptoms of diabetes was poor (35%). But 76% respondents knew that diabetes can be controlled by medication, 42% of them agreed that dietary modification, regular exercise and regular drug therapy is important in the management of diabetes(Figure 2).We found that patients have limited knowledge about complications of diabetes. 30% of them felt that mainly kidneys were affected by DM followed by eyes (16%) and peripheral nerves (12%). Heart related complications were least known to the patients (6%) (Figure 3). It was also noted that taking insulin was disfavored by 48% of patients.

Attitude and practice:

To assess the attitude of people towards lifestyle characteristics like diet, physical activity and health seeking behavior in DM, it was found that 33% of patients still believed that DM is curable completely. 56% of patients had positive attitude towards doing regular physical

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exercise for the improvement of raised blood sugar levels and 59% believed that periodic eye, BP & cardiac examination is necessary. Only 51% were aware that hypoglycemia can be controlled. In our study the encouraging part was 85% of patients were taking diabetic medication regularly and (81%) of patients had changed their dietary habits after diagnosing diabetes. The practice regarding doing moderate physical exercise (Figure 4) and periodic eye, lipid profile, cardiac status monitoring were found to be low(Figure -5). Amongst the diabetic patients, the frequency of blood sugar testing was only 39% tested once a month, 27% twice a month, 18% once in six months and 16% tested occasionally. Only 44% of them were seem to follow proper foot care in indoor / outdoor. It was also noted that majority (74%) of the patients didn't know about HbA1C and only 26% knew it.

Table 1: Demographic data

S. No		Number of patients (%)
1.	Age	30 - 39 - 12 40 - 49 - 24 50 – 59 - 38 60 – 69 - 16 >70 - 10
2.	Gender	Male - 41 Female - 59
3.	Duration of Diabetes	<1yr - 16 1 – 5 yrs - 58 5 – 9 yrs - 12 >10 yrs - 14
4.	Educational status	Illiterate - 21 Primary school - 36 Sec. school - 25 Graduate & above - 18
5.	Diabetic history	Positive - 50 Negative - 50
6.	Smoking status	Positive - 28 Negative - 72
7.	Blood sugar level	FBS - Adequate < 120mg/dl - 46 Inadequate ≥120 mg/dl - 54 PPS -Adequate<180 mg/dl - 22 Inadequate ≥180 mg/dl - 78

Table 2: Patients response to Knowledge questions

	Questions to assess Knowledge	% of correct responses
	What is diabetes mellitus?	43
	Diabetes is caused by	9
	Common symptoms of diabetes is/are	35
	In uncontrolled diabetes the blood sugar is	71
	Accurate method of monitoring DM is	87
	Diabetes can be controlled with treatment?	76
	Mode treatment of DM	42
	Parts of body affected by Diabetes	1

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Table 3: Patients response to Attitude questions

	Questions to assess Attitude	% of correct responses
	Diabetes can be cured completely	33
	Regular exercise will improve blood sugar levels	56
	Hypoglycemia symptoms can be controlled?	51
	Diabetics should have a periodic eye /BP/ Cardiac examination.	59

Table 4: Patients response to Practice questions

	Questions to assess Practice	% of responses
	Are you taking diabetes medication regularly?	Yes - 85
	Blood sugar examination (1) Once a month (2) twice a month (3) Once in 6 months (4) Occasionally	 (1) 39 (2) 27 (3) 18 (4) 16
	Dietary modification after diagnosing DM	Yes - 81
	Moderate physical activity for 30-45 min (1) Once a week (2) Twice a week (3) 5 time a week (4) Rarely	 (1)25 (2) 7 (3) 8 (4) 60
	HbA1c	Yes - 26
	Checking BP /Lipid profile / Cardiac status/ Eye examination (1) Once a year (2) Once in 6 months (3) Once in 3 months (4) Occasionally	 (1) 11 (2) 21 (3) 6 (4) 62
	Proper foot care in indoors / out doors?	Yes - 44

Figure 1: Duration of diabetes(years)

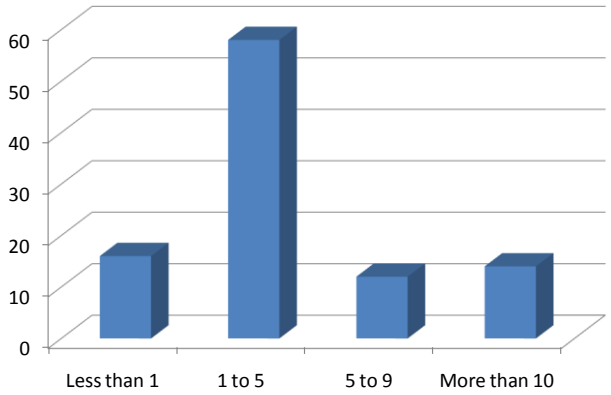

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Figure 2: mode of treatment %

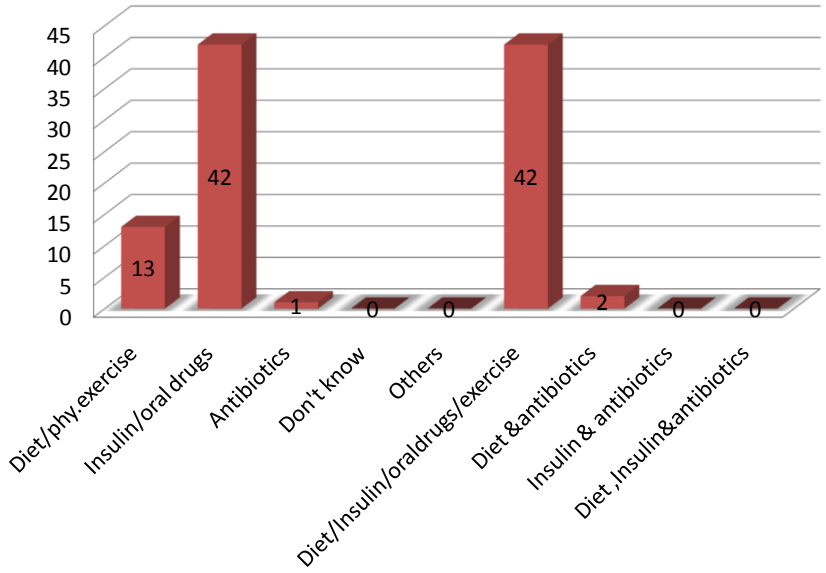

Figure 3: knowledge about complications

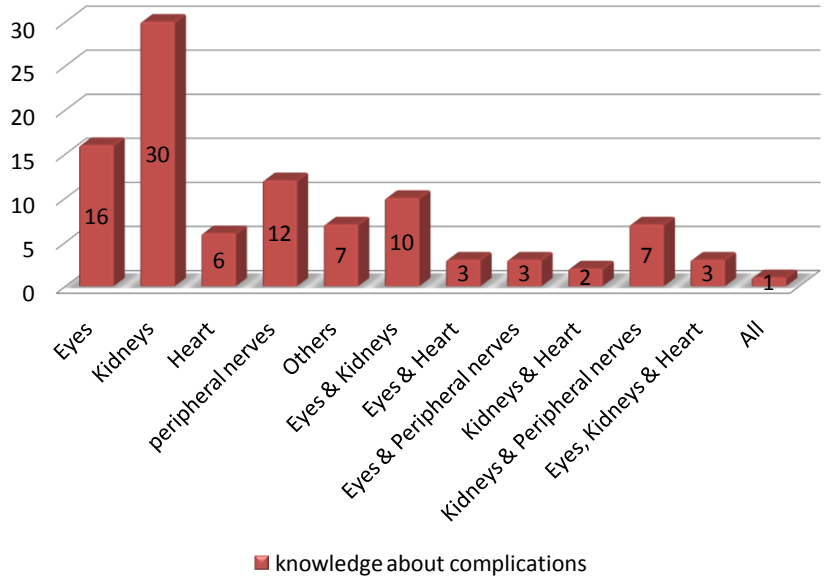

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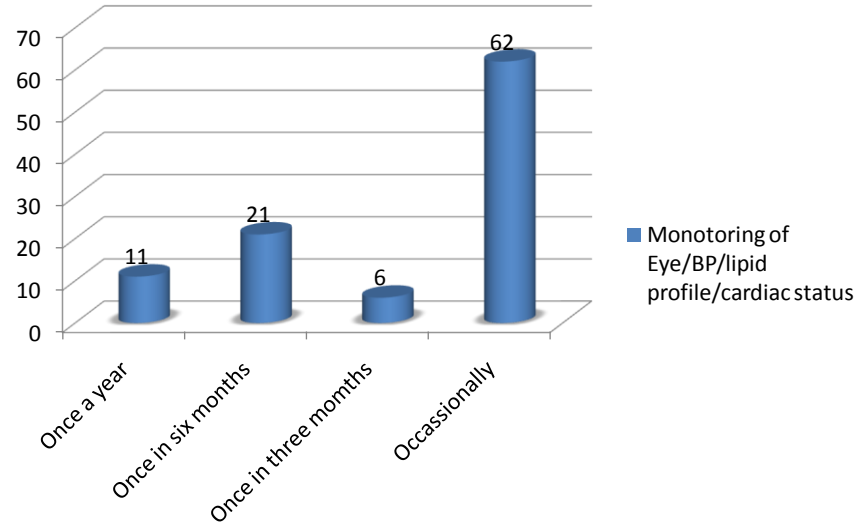
Figure 4: Physical activity

Figure 5:Monotoring of Eye/BP/lipid profile/cardiac status



DISCUSSION

Diabetes is one of the most preventable diseases of all non communicable disease. WHO report predicts that the main increase in diabetes would be in >65years age group in developed countries, in India and other developing countries, the highest increase would occur

in the age group of 45 – 64 years which includes people in the peak of their lives. Our studies also revealed that majority of the patients (62%) were in the age group of 40 – 59 years [4]. 50% of the individuals had positive family history of diabetes which implies that study population had a genetic contribution to their diabetes etiology.

Knowledge of diabetes was assessed by questions related to the nature of the disease, symptoms, method of detection of diabetes, complications, importance of diet, exercise and drug compliance in controlling the disease etc. During evaluation of knowledge part in our study, it was found that general awareness of disease was poor, only 43% of the patients knew about the condition diabetes [12-14]. This may be correlated with poor literacy rate (21%) [15]. Public awareness study also showed low scores in general knowledge, risk factor of diabetes but good understanding of symptoms and complications of DM [16]. But it was observed that in our study majority of the patients were aware of monitoring and treatment of diabetes. Surprisingly their awareness regarding common symptoms and complications of DM was poor. We found that only 35% were aware of common symptoms of diabetes and the renal complications (30%) was the most common complication followed by eye (16%). Unfortunately knowledge about frequency of neurological problem was found only 12% cases [10]. To increase the patient well being and decrease economic burden of DM, it is essential to educate the diabetic population about early diagnosis, proper monitoring and management of the disease. Improving knowledge of the people can improve their attitude towards diabetes and change their practices to embrace healthier lifestyles such as eating healthy foods, and engaging in physical activity [11].

In our study patients are well aware that DM can be controlled with proper treatment (76%) and about 42% agreed with diet control and drug therapy for control of high blood sugar level [15, 17]. Highest scores were obtained on mode of detection of diabetes (87%).

The attitude and practice towards regular exercise & dietary modification was found to be favorable in majority of the patients however, compliance to dietary modification was reported high (81%) where as occasional exercise pattern was seen with most of the patients (60%). Physical activity is the vital factor linked to metabolic improvement and lower overall mortality [18, 19]. Moreover our study revealed that diabetic patients believe mostly on drugs & dietary modification to control their disease condition. Management of chronic disease is usually linked with life style modification and for effective disease prevention and treatment behavioral changes are required. Importantly lifestyle changes are necessary to control the disease which includes dietary adjustment, exercise, monitoring of blood glucose, sometimes monitoring urine changes, and following an appropriate drug regimen [20]. In our study more than two third of the patients followed regular medication and modified dietary plan. Considerable number of patients still believed that diabetes can be completely cured. Many patients (51%) were aware of symptoms of hypoglycemia & its management. More than 50% patients in our study reported to have checked their blood glucose level once in six months, occasionally etc., whereas less number of patients (39%) only monitor regularly.

With regard to practice of checking lipid profile, cardiac status and eye it was noted that majority of patients (62%) were not taking consultation/ check up. Only 44% of patients knew about the importance of foot care. Self care among individuals with diabetes is necessary for improved glycemic control and reduced complications [11]. Self care can be imparted more by health education practices [21]. Improving patients practice and attitude towards diabetes can be also be done in many ways out of which group education and patient counseling plays important role.

CONCLUSION

Our study reflected poor awareness, knowledge and practice about diabetes and this should be improved. Education and counseling regarding all aspects of diabetes is essential. Individual and group education about diabetes should be planned which facilitates better understanding of the disease, its prevention and management. Continuing education of diabetes and its complications is crucial and this should be accompanied by a regular assessment of their knowledge. Continuing medical education programs on diabetes for medical and paramedical personnel also can be held regularly in order to update their knowledge regarding diabetes so that they can provide better diabetes care and education to the patients.

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