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Knowledge, Attitude and Practice about type 2 Diabetes Mellitus in an adult population attending a Primary Health Centre in rural Jammu.

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Abstract
Background: *Diabetes Mellitus (DM) 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. It is an important risk factor for blindness, vascular disease, brain diseases renal failure, and limb amputations. DM is increasing in developing countries due to unhealthy lifestyle, rapid westernization, and poor knowledge and practice of disease.*
Objectives: *To study the knowledge, attitude and practice of diabetic patients attending a Primary Health Center in rural area of Jammu.*
Methodology: *An Out Patients based, descriptive, observational study was carried out among adult diabetic patients attending Primary Health Center above the age of 20 years. Detailed history and physical examination was done. Level of knowledge, attitude and practice towards diabetes mellitus was assessed.*
Results: *Total 195 Diabetes Mellitus (Type 2)patients were included in the study. 48% were males and 52% were females. Majority of patients (46%) were in the age group of 31-40 years. Patients had poor knowledge , attitude, practice regarding Diabetes.*
Conclusion: *Adequate knowledge, positive attitude and good practices are important for effective control of diabetes mellitus. Patients require continuous support from family members to bring about a change in lifestyle. Also, people have to be educated through mass media on diabetes mellitus and its risk factors for its effective control in the community.*
Key words: *Attitude, Diabetes Mellitus, knowledge, practice, Primary Health Center.*

I. Introduction

Diabetes Mellitus (DM) 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.[1]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. Diabetes mellitus has become a cause of growing public health concern in developing countries, as it has been for a long time in the most developed ones.[2,3]Diabetes can lead to increased morbidity and mortality.[4]The prevalence of Type 2 is projected to increase, making type 2 DM a pandemic. [5]The reasons for the increase in the prevalence of diabetes mellitus in developing countries may include unhealthy lifestyle, rapid westernization, poor knowledge, negative attitude and poor practices towards DM among the general population .There exists a large gap between the knowledge, attitude and practice towards diabetes among diabetic patients . Knowledge about diabetes mellitus, appropriate attitude and practices are vital to reduce the prevalence and morbidity associated with DM .However, very few studies have focused on this area and there is a lack of the knowledge, attitude and practices data among Indian diabetic patients. There is improper guidance about the disease due to lack of understanding of patients characteristics i.e. personality and attitude of the patient.[6]Obtaining information about the level of awareness about diabetes in a population is the first step in formulating a prevention program for diabetes.[7]A study from Pakistan highlighted the fact that a proper education and awareness program can change the attitude of the public regarding diabetes[6] ,as a large gap between knowledge and attitude among the diabetes patients was found [6] and proper knowledge regarding various aspects of health education program can improve the knowledge of patients and change their attitude.[8] Knowledge about Diabetes Mellitus, appropriate attitude and practices are vital to reduce the prevalence and morbidity associated with DM.[9,10] However, very few studies have focused on this area and there is a lack of the knowledge, attitude and practices data among Indian diabetic patients. Therefore, the present study was conducted to study the knowledge, attitude and practice of diabetic patients attending Primary Health Center (Kotbhalwal) in rural area of Jammu.

II. Material And Methodology

An observational, descriptive, Out Patients based study was carried out among adult diabetes type 2 patients, attending the Primary Health Center for the assessment of knowledge, attitude and practice of Diabetes among the patients. This study was carried out from November 2014 to April 2015.The study was carried out after getting the verbal consent from the participants who were enrolled in the study. This Cross-sectional study used a KAP questionnaire developed by Subish *et al*[11] The questionnaire had 25 questions (knowledge-18, attitude-4 and practice-3 questions)and each correct answer and was given a score of 'one' and each wrong answer was given a score of 'zero'.

III. Results

Altogether 195 patients were enrolled in the study. Among these, males were 110(56.41%) and females were 85 (43.58%). The greatest number of patients were in the age group of 45-50 years (37.91%) followed by 40-45 years (21.98%).The response of the patients regarding the knowledge related questions are listed in Table 1.

Table 1. Response to knowledge questions.

Questions answered correctly	Number of patients (%)
Diabetes is a condition in which the body contains…	69 (37.91)
The major cause of diabetes is……	37 (20.33)
The symptom(s) of diabetes is/are…..	69 (37.91)
Diabetes, if not treated…….	68 (37.36)
The most accurate method of monitoring diabetes is...	106 (58.24)
In a diabetic patient, high blood pressure can increase or worsen….	51 (28.02)
A diabetic patient should measure his or her blood pressure…..	12 (6.59)
The lifestyle modification(s) required for diabetic patients is/are…..	47 (25.82)
A diabetic patient should have his or her eyes checked….	88 (48.35)
Regular urine tests will help in knowing…..	29 (15.93)
The important factors that help in controlling blood sugar are	72 (39.56)
A regular exercise regimen will help in……	16 (8.79)
The well-balanced diet includes……	39 (21.43)
For proper foot care, a diabetic patient…	23 (12.64)
Treatment of diabetes comprises…	8 (4.40)
Diabetes cannot be treated with…..	14 (7.69)
Upon control of diabetes, the medicines…..	78 (42.86)

Table 2: Demographic details of the study population involved in assessment of KAP's of diabetes

Variables	Number of general population	%
Gender		
Male	94	48
Female	101	52
Total	195	100
Educational status		
Illiterate	59	30
Primary school	74	38
Secondary school	42	22
Graduate	20	10
Total	195	100
Marital status		
Married	172	88
Unmarried	23	12
Total	195	100
Age (years)		
21-30	35	18
31-40	90	46
41 or above	70	36
Total	195	100
Smoking (cigarettes/day)		
Non smokers	129	66.66
Past smoker	24	12.5
Smokers	42	20.83
Total	195	100
Alcohol		

Non-alcoholic	73	37.5
Past alcoholic	16	8.33
Alcoholic	106	54.16
Total	195	100
KAP: Knowledge, attitude and practices		

From the results of the practice questions, it was found that the participants have poor knowledge regarding the importance of frequent health check up's.

Table 3. Response to attitude questions.

Questions Number of patients	**answering correctly(%)**
Do you exercise regularly……..?	121 (66.48)
Are you following a controlled and planned diet……?	156 (85.71)
Do you miss taking the doses of your diabetic medication……?	123 (67.58)
Are you aware of blood sugar levels falling below normal when you are taking drugs…….?	39 (21.43)

Table 4. Response to practice questions.

Questions	**Responses**	**Number of patients(%)**
1. When was your blood pressure checkedlast?	One week ago	51 (26.15%)
	One month ago	90 (46.15%)
	Two months ago	43 (22.05%)
	Six months ago	11 (6.04%)
2. When did you have your last eye examination?		
	One year ago	03 (1.65%)
	One month ago	56 (28.71%)
	Six months ago	52 (26.66%)
	One year ago	40 (20.51%)
	Two years ago	28 (14.35%)
3. When was your last urine exam done.	Not done at all	55 (30.22%)
	One month ago	49 (26.92%)
	Six months ago	37 (20.33%)
	One year ago	23 (12.64%)
	Not done at all	73 (40.11%)

The mean scores of the study population regarding the knowledge, attitude and practice outcomes were evaluated and the details are mentioned in Table 5.

Table 5.Mean scores of the patients.

Variables	**Mean**
Knowledge	48.58
Attitude	109.75
Practice	43.64
Overall	201.97

IV. Discussion

We found the KAP scores of the patients to be low .Studies have reported that level of awareness depends on socioeconomic gradient, culture and ethnic variation .[12,13,14]Understanding of these variables is highly important in designing strategies for the prevention of diabetes. A recent study conducted among the diabetic patients of Western Nepal reported poor KAP scores[15] and the plausible factors could be lack of awareness, unavailability of information and literacy level of the study population. Another recent study involving young diabetic Saudi women also reported poor KAP scores.[16]However, a study from Malaysia identified a good knowledge, attitude and practice score.[17]The difference in the findings among different studies may be due to the differences in the literacy of the study patients, the training received by them and availability of information on diabetes .In J&K ,generally these facilities are not available for the patients and hence might have contributed to a low level of KAP scores. A systematic review concluded that diabetes patients might perceive better self-efficacy in disease management with self-monitoring of blood glucose, and would have a better understanding about the possible factors that affect diabetes management .[18]Moreover, self monitoring of blood glucose might also improve medication adherence and motivate patients to make necessary lifestyle

changes. It is well understood that diabetes management requires patient involvement for a better disease control.[19,20] Improving knowledge level of the patients regarding the drugs can be done by many ways including group education[21]as well as through patient counseling. Patient counseling by the pharmacist can play a vital role in imparting education to the diabetes patients .[22]Strategies to modify lifestyle which help in control of DM include providing diabetes leaflets as well as by direct education programs. Knowledge of the patients regarding the importance of Self Monitoring of Blood Glucose and regular blood pressure (BP) checkup is essential . Limitations of this study were that it was conducted only among the outpatients and hence may not be generalizable to the overall diabetic population .In conclusion, this study revealed a low level of knowledge, attitude and practice among the diabetes patients. This suggests the need for awareness programs for the patients so as to improve their knowledge regarding diabetes.

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