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## KNOWLEDGE AND ITS COMPLICATIONS OF DIABETES AMONGST THE KNOWN DIABETIC PATIENTS – A HOSPITAL BASED STUDY

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### ABSTRACT

**Introduction:** At present India is considered as the diabetic capital of the world. There are approximately 3.5 crore diabetics in India. This is expected to increase up to 5.2 crore by 2025. Keeping in view the alarming increase in the incidence and prevalence of diabetes in India, the W.H.O. has declared India as the “Diabetic capital” of the world. Increasing patient knowledge regarding disease and its complications has significant benefits with regard to patient compliance to treatment and to decreasing complications associated with disease.

**Objective:** To assess the level of knowledge regarding diabetes. Study design It is a cross sectional study.

**Results:** The major finding of the study is lack of awareness of diabetes and its complications.

**Recommendations:** An Awareness & Education programme is required to empower diabetic patients & also to increase their quality of life.

**Keywords:** Diabetes, complication, knowledge, awareness.

### INTRODUCTION

The incidence of diabetes is rising throughout the world. The figures estimated in 1995 were 135 million escalating to 151 million in 2001<sup>(1)</sup>. It is anticipated to be 300 million by 2025 all over the globe<sup>(2)</sup> of which more than 75% will be in the developing countries<sup>(3)</sup>.

There are approximated 3.5 crore diabetics in India which is expected to increase up to 5.2 crore by 2025. Keeping in view the alarming increase in the incidence and prevalence of diabetes in India, the W.H.O. has declared India as the “Diabetic capital” of the world<sup>(4)</sup>.

Adequate knowledge of diabetes is a key component of diabetic care. Many studies have shown that increasing patient knowledge regarding disease and its complications has significant benefits with regard to patient compliance to

treatment and to decreasing complications associated with disease<sup>(5)</sup>. In this study, we tried to evaluate the level of knowledge of diabetes and its complications among the population of diabetes visiting the diabetic clinic in BLDE University’s Sri. B. M. Patil Medical College Hospital & Research Centre.

### MATERIALS & METHODS

We conducted a cross sectional study using pretested questionnaire by interview technique. 249 subjects were collected; and the subjects were diabetic patients attending diabetic clinic in BLDEU’S teaching Hospital. The questionnaire consists of questions that tested the patients knowledge of diabetes and its complications. It was a time bond study, conducted in the month of October to December 2009.

### Limitation of the Study

1. Consecutive cases of Type 2 diabetes aged  $\geq 18$  years were selected for this study from the out patients attending to our Hospital.
2. New cases of diabetes were included.

### Statistical methods

Data were analyzed using SPSS 15<sup>th</sup> version. Knowledge score were calculated for correct answers given by the patients. Mann Whitney 'U' test was used to find the significant differences and linear regression was applied to find the influence of independent variables on knowledge score.

### RESULTS

In this study out the 249 patients interviewed 159(64%) were males and 90(36%) were females, & 233(94%) had type II and 16(6%) had type I diabetes. Total knowledge scores for each patient were calculated for correct answers. The maximum score attained was 35 (out of 40 maximum score). It was surprising that both male and female scored 35 and when compared the median scores of male and female it was statistically not significant ( $P=0.468$ ). 79(32%) patients did not know the risk factors involved in developing the disease. Multiple linear regression analysis was done, using the scores obtained as the dependent variable and level of education, duration of diabetes, type of diabetes and residence of patients as independent variables. The analysis showed that significant association with educational status and duration of diabetes ( $P=0.000$ ) and no association was found with type of diabetes and residence of the patients ( $P= 0.05$ ). (Table 1)

Out of 249 Diabetic patients only 48(19%) were aware that diabetes could be prevented. 51(20%) knew their level of fasting blood sugar and 61(24%) about post prandial blood sugar and only 47(19%) had idea about their Hb level. Out of total study subjects 134(54%) did not know that the kidney function tests should be performed in

diabetes. Only 92% (37%) patients had the knowledge that measures can be taken for preventing complications in diabetes, 92(37%) patients knew about symptoms of hypoglycemia and 76 (37%) patients opened that sweet should be consumed when they become hypoglycemic. 113(45%) patients knew that treatment should be continued throughout the life. (Table 2)

Here 128 (27%) patients had awareness that family history of diabetes was one of the cause and 140(30%) opined that obesity was also risk factor for diabetes. 76 (22%) Patients said that diabetes could affect eyes, 46 (13%) said kidney, 78 (22%) said foot and other complications like heart attacks 103(30%) and lung 45(13%). 92(37%) Patients had the knowledge that if preventive measures are available for preventing complications in diabetes. (Table 3 & 4).

### DISCUSSION

The major finding in the study was the lack of awareness of diabetes among the diabetic patients. In this study the knowledge score by men and women were equal but finding was dissimilar to that reported by Michele Gulabani *et. al* <sup>(6)</sup>. According to Michele Gulabani *et al* the mean score in men was 2.84 points higher than that in women and the difference was found statistically significant ( $P=0.016$ ). Vishwanathan *et al* <sup>(7)</sup> study revealed that low score was in women (78.5%) than in men (62.5%) and it was found statistically significant.

Only 14% patients knew what preventive measures should be taken to prevent the disease and 140(56%) were aware of the cause of diabetes. 45% patients correctly said that treatment should be continued throughout the life. Overall 13% of them gave correct answer about common cause of death among diabetics. This indicates a significant lack of knowledge of preventive aspects of diabetes in population. The most common cause of death among diabetes is cardio vascular disease

(8) but in our study 18% of patients opined that Diabetes affects lungs and kidney.

So most of the patients may not be able to take appropriate preventive measures and may seek medical aid only at very late stages. This is worrying in the context of the fact that India currently leads the World with over 32 million diabetic subjects and these numbers are expected to increase to 79 million by the year 2030.

### CONCLUSION & RECOMMENDATION

This study confirms that patient's knowledge about Diabetes and its complications is limited. This underscores the urgent need to improve the knowledge and awareness about diabetes particularly in developing countries like India. Thus it is recommended that awareness and Education programs are required to empower diabetic patients and also to increase their quality of life.

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**TABLE – 1**

VARIABLES	N (%)	Max score	Mean±SD (Median)	Conclusion 95% C.I.
1) Sex Male Female	159(64%) 90(36%)	35 35	10.92±8.78 (9.0) 10.67±9.45 (8.0)	N S (p=0.468)
2) Residence Urban Rural	159(64%) 91(36%)	35 34	10.25±8.39 (10.5) 9.4±9.4 (6.0)	N S (p=0.595) (-3.07,1.76)

3) Type of family Joint Nuclear	65(26%) 184(74%)	35 35	9.94±8.86(7.0) 10.4±7.59(9.0)	
4)Educational Status Illiterate Primary School Degree	79(32%) 32(13%) 68(27%) 70(28%)	34 35 35 35	8.93±8.05(7.0) 11.24±9.78(10.0) 10.34±8.27(9.0) 16.51±9.13(14.5)	N S (p=0.000) (1.87,3.54)
5) Type of Diabetes Type I Type II	16 (6.0) 233(94.0)	34 35	10.97±9.66(7.0) 11.61±9.74(9.0)	N S (p=0.128) (-6.7, 1.62)
6)Duration of disease < 1 year 1 - 5 year 5 -10 year 10 -15 year > 15 year	13 (5.0) 78 (31) 57 (23) 92 (37) 29 (12)	34 35 35 34 35	7.38±7.01(5.5) 10.83±9.96(7.0) 9.18±8.68(6.15) 11.89±9.37(11.0) 12.06±8.70(13.0)	Significant (p = 0.01) (0.068, 0.502)

NS:-Not Significant

**Table: 2 Knowledge about Diabetes**

Knowledge about diabetes	Yes (%)	No (%)	Don't know (%)
1) Diabetes can be prevented	48(19)	9 (37)	110 (44)
2) Know about level of FBS	51 (20)	106(43)	92(37)
3) Know about PPBS	61 (24)	102(43)	86 (34)
4) Hb level	47 (19)	115(46)	87 (35)
5) KFT could be performed	34 (14)	134(54)	81 (33)
6) Regular inspection of feet	123(49)	62 (25)	64 (26)
7) Personal protection from injury & fire	106(43)	74 (30)	69 (28)
8) Symptoms of hypoglycemia	92 (37)	72(29)	74(30)
9) Sweet should be consumed when they were hypoglycemic	76 (31)	122(48)	61 (24)
10)Whether treatment should be continued throughout life	113(45)	49 (20)	87 (35)

**Table: 3 Knowledge about causes of diabetes**

Causes of Diabetes	Number	Percentage
Obesity	140	30
Hereditary	128	27
Consumption of more sugar	113	24
Mental stress	90	19
Total	471	100

**Table: 4 Knowledge of diabetic complications**

Organs that could be damaged by diabetic	Number	Percentage
Eyes	76	22
Kidney	46	13
Heart	103	30
Foot	78	22
Lung	45	13

Note: Multiple answers