To Assess the Knowledge & Practice about Diabetes Mellitus among Diabetic Patients of Rural Field Practice Area, North Karnataka: A Cross-Sectional Survey

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Abstract

Introduction: Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use its insulin. According to the World Health Organization report, India today heads the world with over 32 million diabetic patients, and this number is projected to increase to 79.4 million by the year 2030. Recent surveys indicate that diabetes now affects a staggering 16% of the urban population and 5-8% of the rural population in India.

Objectives: To study the diabetic profile & to assess knowledge about Diabetes mellitus among diabetic patients of Rural field practice areas.

Methodology: A cross-sectional survey was conducted at the Rural health Training Centre, Ukkali, under the department of Community Medicine, among the diabetic patients attending the Diabetic clinic for a period of six months. A Pre-designed, pre-tested questionnaire was used to assess the socio-demographic profile of patients, profile of diabetes & knowledge about diabetes mellitus.

Results: A total of 110 diabetic patients with a mean age of 66yrs ± 6 (M 52%, F 48%) showed irregularity in treatment due to the cost of treatment & frequent changing of treatment providers (40%). The majority of patients think that eating excess sugar causes diabetes (72%), it runs in the family (48%) & around 60% are not having any idea about hypoglycemia. Overall knowledge found was poor.

Conclusion: There is a need to increase awareness about chronic diseases like diabetes mellitus among people by strengthening the IEC activities in PHCs, RHTCs & Private hospitals because this will reduce the suffering of people not only physically but also economically.

Keyword: Diabetes,Knowledge, Practice, self-care

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.[1] According to the World Health Organization (WHO) report, India today heads the world with over 32 million diabetic patients and this

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number is projected to increase to 79.4 million by the year 2030. Recent surveys indicate that diabetes now affects a staggering10 16% of urban population and 5-8% of rural population in India.[2]

Complications associated with diabetes can be reduced by the early diagnosis of the disease and proper treatment. Patient education has been termed as the corner stone for patients with Type II Diabetes Mellitus. Patients need to make informed decisions about diet, exercise, weight control, blood glucose monitoring, use of medications, foot care, eye care and control of macro vascular risk factor.[2]

The use of a knowledge, attitudes, and practices (KAP) based survey is considered a good resource model to access the qualitative and quantitative information held by the individual& will help to assess the effectiveness of health education interventions. There is strong evidence that educated diabetic patients with good knowledge and health literacy achieve better disease control and management involving non-pharmacological treatment and pharmacological drug therapy.[3-5] Hence a survey was planned to assess the awareness and practice towards the diabetes and self-care among the rural population.

Material and Method

A cross-sectional survey was conducted at Rural health Training Centre, Ukkali under department of Community Medicine among the diabetic patients attending the Diabetic clinic at for the period of six months. Thosepeople with diagnosed diabetes were enrolled into the study after explaining them the purpose of the survey(Informed consent was taken).Institutional Ethics Committee clearance was obtained before the start of the study. With 95% confidence level and margin of error of ±10%, and anticipated the percentage of adequate knowledge regarding diabetesamong diabetic peoples, a sample size of minimum 100 diabetic patients by using the formula: $n=z^2p(1-p)/d2$ where Z= z statistic at 5% level of significance, d is margin of error 10%, p is the percentage of adequate knowledge regarding diabetes (50%).

A Pre-designed, pre-tested questionnaire were used to assess the socio-demographic profile of patients, profile of diabetes like duration, treatment taken, type of treatment, complication experienced. The proforma also contains the questionaries related to knowledge regarding diabetes like causes of diabetes, treatment options, side-effects associated with treatment, complications due to diabetes, foot care. The information collected was entered in excel sheet and Data analysis was done forfrequency distribution& tests of significance.

Observations

Total 110 diabetic patients with mean age of 66years ± 6 (range = 51 to 76 years with nearly equal sex distribution (M 52%, F 48%) were interviewed during the study period.

Table 1 - Socio-demographic profile of Diabetic patients

Variables		Frequency	%
Age (years)	51 – 60	71	64
	61 – 70	24	22
	71 onwards	15	14
Gender	Male	52	47
	Female	58	53
Occupation	Agriculture	57	52
	Housemaker	37	33
	Business	05	05
	Not working	11	10
SE status	Class V	66	60
	Class IV	31	28
	Class III	11	10
	Class II	02	02
Education	Illiterate	77	70
	Literate	33	30

According to the table I, majority of the diabetic participants were in the age group of 51 to 60 years, females more than males, involved in agriculture by occupation, belonging to class-IV socio-economic status and illiterate by education.

Table 2–distribution of participants according to the profile of diabetes

Variables	Groups	Frequency (n=110)	%
Diabetic since (years)	<1 yr	13	12
	1 – 3 yrs	12	11
	4 – 5 yrs	61	55
	>5 yrs	24	22
Treatment	OHG	98	89
	Insulin	12	11
Regularity of treatment	Regular	80	73
	Irregular	30	27
Hypertension	Yes	53	48
	No	57	52
h/o stroke	Yes	06	05
	No	104	95

Eye sight	Normal	74	67
	Reduced	36	33
Treatment from	Private	56	51
	Government	52	47
	Others (AYUSH)	02	02

According to table II, mean years of being diabetic was 5 years & SD ± 4 with minimum 6 months to maximum 10 years duration. Majority (89%) were on oral hypoglycemic treatment, majority were taking treatment regularly (73%), 48% were also having hypertension, 5% had history of stroke, eye sight reduced in 33% participants and 51% were taking treatment from private doctors followed by Government (47%) health centers.

Table 3: Patient's Diabetes Knowledge Questionnaire (n=110)

Q. No.	Questions	Yes	No	Don't know
1.	Eating excess sugar causes diabetes	72%	18%	10%
2.	Diabetes is caused by lack of Insulin	15%	10%	75%
3.	Insulin is necessary to control the blood sugar	12%	06%	82%
4.	If diabetes is not treated, the blood sugar will be high	52%	13%	35%
5.	Diabetes runs in the family	48%	16%	36%
6.	Diabetes cannot be cured	49%	26%	25%
7.	High Fasting blood glucose level is indicative of DM	11%	41%	48%
8.	Diabetes can be monitored regularly by urine sugar test	22%	23%	55%
9.	Diet modification is necessary to control diabetes	24%	16%	60%
10.	Wounds heal slowly among diabetics	51%	12%	37%
11.	Diabetics should take self-care about feet	45%	30%	25%
12.	Diabetes can affect Eye sight	30%	18%	52%
13.	Diabetes can affect Kidneys	25%	15%	60%
14.	Diabetes can affect sense like touch	10%	12%	78%
15.	Low sugar is commonly seen among diabetics on treatment	30%	25%	45%

According to the table III, overall knowledge regarding diabetes and its care among diabetic patients was (average 30%) below average. Most of the diabetics know that wounds on feet will heal

slowly (51%), so they should take self-care of feet or wounds (45%) but do not practice any foot care to prevent occurrence of wounds.Majority of patients think that eating excess sugar causes diabetes (72%), it runs in family (48%). Majority were unaware about the role Insulin in diabetes (82%), importance of diet modification in treating diabetes (76%), and other systems affected like eyes (70%) & Kidney (75%). Around 70% are not having an idea about the hypoglycaemia, a very common side effects of diabetes treatment & its prevention.

Table 4: Distribution of participants according to the Practice of diabetic care (n=110)

Variables		Frequency	%
DM was diagnosed	Routine check-up	22	20
	Community screening	63	57
	Symptoms	14	13
	Complications	11	10
Treatment initiated after diagnosis	within 24hrs	27	05
	One week	18	16
	One month	87	79
Reasons for irregularity in treatment	Financial	64	58
	Consulting another doctor	24	22
	wait & see attitude	12	11
	AYUSH treatment	10	09
Expenditure for DM treatment monthly	Rs. < 1000	73	66
	Rs. > 1000	37	34
Frequency of blood sugar check	Once in month	23	21
	One to three months	55	50
	Three to six months	32	29
Self-care of foots	Yes	18	16
	No	92	84

According to the table IV, expenditure for the management of the diabetes was found around Rs.1,000 per month including consultation, travelling, wound care & or hospitalization among 66% of the participants. About 21% participants get their sugar tested in nearby PHC/RHTC/private Labs monthly where as 50% once in 3 to 6 months and 29% once in 3 to 6 months. Most common reason for irregularity in taking treatment found was increasing cost of tablets (58%) & consulting change of doctor for treatment (22%).

Discussion

Among 110 diabetic patients with mean age of 66years ± 6 (M 52%, F 48%) showed irregularity in treatment due to thecost of treatment & frequent changing of treatment providers (40%). Overall knowledge found was poor. Majority of patients think that eating excess sugar causes diabetes (72%), it runs in family (48%) & around 60% are not having an idea about the hypoglycemia. Most of the diabetics were having adequate knowledge regarding slow wound healing on feet (51%), need of self-care of feet or wounds (45%) but do not practice any foot care to prevent occurrence of wounds (16%).

Al-Yahya A et al showed in their study that the most common barrier to comply with regular follow-up was inadequate knowledge about the importance of periodic eye exam 47.1%. Patients with low socio-economic status had a significantly poor knowledge regarding diabetes (P<0.0001) and diabetic retinopathy (P<0.015), respectively. However, patients with low educational level had a significantly poor knowledge (p<0.0001) and poor practice regarding diabetes (P<0.013), respectively.[6]

HyderMK et al the impact of Prediabetes Education Program (PEP) was assessed by administration of questionnaire before and after PEP with an interval period of 30 days. Baseline assessment of knowledge among prediabetics shown that 90% had poor knowledge but after PEP program 43% had average knowledge and 44% could score good knowledge. Baseline assessment of attitude exhibited 30% with negative attitude but after counseling 68% shown positive attitude. Regarding practice assessment 35%

had very poor and 52% shown poor practice but after PEP 71% shown good practice and 15% shown very good practice. Prediabetes education program could bring significant improvement in knowledge attitude and practice.[7]

Chakravarty R et al, the mean (SD) age of the respondents was 35.2 (±12.61) years and 62% had a graduate or higher level of education. The median KAP scores were 10 (8-12), 5 (3-5) and 2 (2-3) out of a maximum of 18, 5 and 6, respectively. Higher educational and socioeconomic levels were associated with better attitude scores, but knowledge levels were comparable. Correlations between KAP scores were poor. This study reveals that laypeople have appropriate knowledge and attitude regarding diabetes mellitus to some degree but there are important lacunae and practices are often found wanting.[8]

Jaiswal K et al, conducted a cross-sectional, questionnaire-based survey in patients (n=100) of a tertiary care teaching hospital in central India. Among them, 46% participants were in the age group of 41-60 yrs. About 94% patients were aware about high blood sugar level & 90% monitoring it. About 85% were aware of hypoglycemic symptoms and its treatment and 80% knew about development of other complications. Regular checkup was done by 70%, while 73% were adhered to treatment.[9]

Muhammad FY et al, conducted hospital based cross-sectional study and level of KAP was found to be directly related to glycemic control ($P < 0.01$). The level of education (odds ratio [OR]: 5.0 and 95% confidence interval [CI]: 0.196–0.452) and monthly income (OR: 4.4 and 95% CI: 0.123–0.326) were found to be independent predictors of diabetes-related KAP.[10]

Conclusion

There is a need to increase the awareness about the chronic diseases like diabetes mellitus among the people by strengthening the IEC activities in Primary health care levels, because this will not only reduce the suffering of people physically but also economically. This is addressed byregular public sensitization and motivational health educational campaigns to improve thetreatment outcomes of Diabetes mellitus in India.

Ethical clearence: Taken

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Conflicting of Interest: Nil

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