ORIGINAL ARTICLE

EFFECT OF AWARENESS OF DIABETES ON CLINICAL OUTCOMES OF DIABETES: AN OBSERVATIONAL STUDY AT A PRIVATE HOSPITAL IN GUJARAT

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ABSTRACT

Introduction: Rapid increase in diabetics is observed especially in developing world. Semi urban and rural areas are adopting life style of metro and urban areas which also bring lifestyle related disease like diabetes. Proper knowledge regarding the natural history of disease, risk factors, complication and its treatment help in better management of diabetes. This study conducted to assess existing awareness and gaps regarding diabetes in patients of diabetes in a private hospital.

Methods: This was cross sectional study conducted among 80 patients using a semi-structured pre-tested questioner. Total 50 questions were included in the proforma. Appropriate statistical test was applied for data analysis.

Results: Mean knowledge score was 19.06 (SD=3.75) out of 50. Dividing questions in to different aspects of disease knowledge, mean scores were found to be below half of the maximum scores in all area except symptoms where it was 4.26 out of maximum 8. Gender, level of education and age was found to be significantly associated with level of knowledge while type of occupation is not associated with it. Mean level of random blood sugar, BMI and systolic blood pressure were 126.12 mg/dL, 30.49 kg/m^2 and 143 mmHg respectively which are higher than normal.

Conclusion: Lower awareness regarding diabetes may lead to poor self management of disease which ultimately reflects in to poor control of clinical outcomes.

Keywords: Diabetes, awareness, self management, complications

INTRODUCTION

The 1997 WHO report has shown that there is a significant increase in the number of people affected with diabetes and this tendency is scheduled to raise in geometric proportions in the next couple of decades. In 1995 it was 124 million, 2000 - 153 and will further rise to 299 million in 2025. Unfortunately, the impact of this increase will be borne by the developing countries. These countries will see more than a 200% rise in the number of diabetics, whilst the developed countries will have a relatively small increase in numbers of around 45% [1]. India is home to around 40 million diabetics and this number is thought to give India the dubious distinction of being home to the largest number of diabetics in any one country while over 65% of which are not aware of their condition [2], by 2025 this is expected to nearly double to 69.9 million.

Adding to this, the WHO predicts that while the major rise in diabetes would be in more than 65 years people in developed countries, in developing countries, including India, the highest rise would be in the people aged 45 – 64 years which highest productive phase of their lives. It can have a enormous downbeat blow on the economy of developing countries. Diabetes has thus turn out to be a great economic challenge as it depletes between 5 – 25 % of the income of an average Indian family.[3] This highlights the urgent need to improve the knowledge and awareness about diabetes especially in developing countries like India.

Even though the prevalence rate in urban is more than rural area but according to Indian task force on diabetes screening has shown that the unknown to known diabetes ratio is about 1.8:1 in urban areas, whilst it is as high as 3.3:1 in rural places[1]. Lifestyle habits from the cities had started to replicate in semi-urban and rural area[4]. Traditional lifestyle in rural area is replaced by western lifestyle that resulted in overreliance on motorized transport and consumption unhealthy diets rich in carbohydrates, fats, sugars and salts. These lifestyles have contributed to a rise in levels of obesity and overweight in the population increasing the risk for diabetes. Hence a much larger

comprehensive prevention program is needed to reach the mass population.

Improving patient knowledge on diabetes will allow them to better contribute to their care and is small investment for large benefit. Another study shows that intensive diabetes education and care management can improve patient outcome, glycaemic control and quality of life of patient[5]. Training in self management is integral to the treatment of diabetes. Proper management requires patients to be aware of the nature of the disease, its risk factors, its treatment and its complications. Many studies had shown importance of education in management of diabetes [6, 7].

India is currently lacking structured education and information programme regarding diabetes. Obtaining information on level of awareness about diabetes is the first step in formulating a prevention programme. But a less attempts are done to assess the educational need of the patients and studies are mostly from urban area. Abysmally lower awareness must be present in rural area, very few of them are diagnosed and on regular treatment. So in present study we had assessed the existing knowledge of diabetic patient regarding disease in Acharya Vinoba Bhave rural hospital which mostly caters the rural population. Further we had explore its association with patient specific characteristics and develop educational strategies to further improve patients self management skills.

METHODOLOGY

A descriptive cross – sectional clinic based study was carried out at private institute providing preventive and curative services for diabetes. Structured questionnaire was self administered containing demographic data and knowledge based questions on diabetes regarding definition, causes, symptoms, treatment, diet and complication. Total 50 items were present each containing one point. All the items were compulsory carrying one point for correct answer, zero for incorrect and don't know remark. Questionnaire took thirty minutes to complete. As per pilot study done with same questionnaire the mean score was 13.4 ± 4.89 with acceptable difference of ±1, confidence level 95%, minimum sample size is 91 patients. We had to contact 123 patients to get eighty fully filled questionnaires.

Based on scores, level of knowledge was graded as <33.3% - poor, 33.3-66.6% - average and >66.6% good. Appropriate statistics was used to analyze the collected data.

RESULTS

Table 1 shows that: 36 % were in age group of 41-50 yrs followed by early incidence in less than 40 yrs. 61 % diabetics were from rural area, 28% farmer by occupation and all the patients were qualified atleast upto SSC. Significant difference in mean knowledge score was found among different gender and educational qualification.

Table 1: Socio-Demographic characteristics of study participants

	Diabetics (%)	Knowledge (mean±SD)	P Value
Sex			
Male	46 (57.5)	13.42±3.47	0.049
Female	34 (42.5)	11.99±2.70	
Age (yrs)			
31-40	26 (32.5)	13.50±2.89	0.130
41-50	29 (36.3)	12.83±2.98	
51-60	19 (23.7)	11.91±3.01	
>60	6 (7.5)	10.87±2.01	
Education			
Up to Primary	30 (37.5)	10.91±4.02	0.009
Up to Secondary	29 (36.3)	11.59±4.11	
Graduate	16 (20.0)	14.05±2.04	
Above graduate	5 (6.2)	15.67±3.77	
Occupation			
Laborer	22 (27.5)	11.38±2.65	0.252
Clerical	18 (22.5)	12.83±3.39	
Self employed	24 (30.0)	12.48±3.46	
Professional	16 (20.0)	13.79±5.19	

Table 2 shows that 17.5 % had poor knowledge on condition called diabetes, 32.5%, 16.3%, 36.3%, 33.8% and 32.5% were poorly aware of etiology, symptoms, treatment, diet and complications. Overall only 12.5% had good knowledge on diabetes. Mean score for definition, etiology, symptoms, treatment, diet in diabetes, complications was shown in table 2. Overall mean score was 19.06 ± 3.75 out of 50.

Table 2: Knowledge of subject on various aspects of Diabetes

Knowledge Aspects	Max. Score	Mean ± SD	Poor (<33.3%)	Average (33.4-66.6%)	Good (>66.6%)
What is Diabetes?	4	1.57±0.85	14 (17.5)	43 (53.8)	23 (28.8)
Symptoms	8	4.26±1.17	13 (16.3)	27 (33.8)	40 (50.0)
Etiology	7	3.02±1.24	26 (32.5)	29 (36.3)	25 (31.3)
Treatment	5	1.67±1.00	29 (36.3)	29 (36.3)	22 (27.5)
Diet in Diabetes	21	6.87±2.22	27 (33.8)	42 (52.5)	11 (13.8)
Complications	5	1.67±0.98	26 (32.5)	37 (46.3)	17 (21.3)
Overall	50	19.06±3.75	8 (10.0)	62 (77.5)	10 (12.5)

Figure in parenthesis indicate percentage

Table 3 shows taht Mean blood glucose level of patients was 126.12 ± 3.57, BMI 30.49 ± 5.23 kg/ m2 while BP was 143 ± 5.58/ 89± 5.13 mm Hg.

Table 3: Clinical parameters of study participants

Clinical Aspects	Mean ± SD
Random Blood Sugar	126.12±3.57 mg/dL
Body Mass Index	30.49±5.23 kg/m^2
Systolic Blood Pressure	143±5.58 mmHg
Diastolic Blood Pressure	89±5.13mmHg

DISCUSSION

Participants in this included 57.5% males and 42.5% females. The mean age was 47 ± 3.4 yrs. Most people with diabetes in low income and middle income countries are middle aged (45-64yrs) not elderly which is contrary to popular belief that diabetes is disease of elderly[8]. So physician not only faces dual challenge with more patients but these patients will require lifelong treatment and ruin the national economy. There is significantly decrease in knowledge score of elderly which is in line with others[9, 10]. Aged has decreased cognitive functions, less education and more barriers in practicing self care their middle aged counterparts.

Significant difference of knowledge score was found according to gender that correlates with the other studies. Males are more exposed to diabetes education from various sources. Finding a relationship between literacy and health outcome implies an inability to acquire and understand health related information which is important mediating factor for determining good outcome[11]. 17% had poor knowledge about the condition called diabetes and more than half believe it to be a communicable disease. 32.5% had poor knowledge on etiology of diabetes as half of them were aware of hereditary nature of disease while other risk factor was known to only 30- 40% of patients. 50 % had good knowledge on signs and symptom of diabetes. This was the only area where patients mean percentage score crosses 50%. Only 48% thinks diabetes to be manageable and just one fifth of them were aware of life-long treatment and regular revision of drugs. The questions related to dietary management reveals that many misconceptions were present regarding fasting and frequency of meal while only 38% and 34% opined for dietary modification and physical exercise as a part of management regime. Mean score of knowledge regarding complications of diabetes was just 1.67± 0.98 out of maximum 5. Less than one fourth know the importance of foot care and follow up investigations to be done for early diagnosis.

General awareness of diabetes mellitus in present study was very poor when compared with other studies [12, 13, 14]. The difference in finding among different studies may be due to difference in literacy status, gross income of country and patients exposure to diabetic education. The present study states very low awareness among patients than the other carried in this part of world as all were done in urban set up [12, 13, 15, 16].

Random blood glucose level of patients were (126.12 ± 3.57 mg/dl) higher than normal. Blood pressure was also found to be at cut off value, though all these patients were under treatment since at least last one year. BMI too was alarmingly high (30.49 ± 5.23 kg/m2). Another study had shown the direct influence of knowledge on attitude and practice of patients[17]. The management of diabetes is dependent to a great extent on affected person's own ability to carry out the self care in their daily lives and patient's education is essential component of achieving this objective.

CONCLUSION

As a consequence of low awareness about the diabetes among patients, is affecting their ability of self management and hence having a negative impact on outcome of diabetes.

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