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Research Article

A study of knowledge about the diabetes type I and II, among diabetic patients in Geetanjali medical college and hospital, Udaipur, Rajasthan, India

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ABSTRACT

Background: Diabetes education, with improvement in knowledge, attitudes and skills, leads to better control of the disease. The objective of this study was to assess knowledge of diabetic patients about symptoms, risk factors, complications and prevention.
Methods: This cross-sectional study was carried out to define level of knowledge regarding diabetes among diabetic patients attending IPD and OPD from Geetanjali medical college and hospital in Udaipur, Rajasthan, India, during the study period of 1st December 2015 to 30th May 2016. A pre-constructed and pre tested questionnaire was used to assess the knowledge.
Results: Among 300 respondents, males and females constituted 45% and 55% respectively. 96.0% aged ≥30 years. Nearly one third of patients were illiterates. About 64.3% of the patients have been diabetic since more than 5 years and majority of them 91.7% were of type II. Positive family history of diabetes was reported in 70% of patients. It was found that every patient under study knew that both genders could be involved with diabetes. The assessment regarding the knowledge of diabetes was good and they were having good knowledge about symptoms, risk factors and complications of diabetes. They also knew about the lifestyle which can prevent from diabetes.
Conclusions: The overall average knowledge regarding diabetes was found among participants. Thus, still there is a need to provide periodic health education to the diagnosed patients so that this knowledge-application gap is narrowed down.

Keywords: Diabetes, Knowledge, Life style, Symptoms, Risk factors, Complication

INTRODUCTION

Diabetes mellitus have a special place among non-communicable diseases because it is one of the leading killers of the present time. It possesses a considerable burden to the society in terms of public health. According to WHO, India heads the world with over 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030.[1] World health statistics 2012, published by WHO reveals that, the prevalence of raised fasting blood sugar in those aged ≥25 years is 11.1% and 10.8% among Indian males and Indian females against an overall global prevalence of 9.8% in males and 9.2% in females.[2] Keeping in view the alarming rise in incidence and prevalence of diabetes in India, WHO declared India as "diabetic capital" of the world.[3]

Diabetes is a lifelong disease with a variety of complications. One can only achieve control over the

blood sugars and complete cure is a distant reality. Thus it becomes the responsibility of the patient to acquire certain skills, and modify some of the behavior's to achieve a good glycemic control and thus prevent complications.

In the Indian socio-cultural scenario, it has been reported that the adherence to treatment regimens is very poor due to poor attitude towards the disease and poor health literacy thus in turn conveying that self-care practices are very poor.[4] Adherence to treatment regimen is not the only self-care practice but it also comprises the adherence to a healthy diet, being physically active, monitoring of blood sugars, and risk reduction behavior's on which patients usually tend to be reluctant. Thus if one adheres the self-care practices, he can achieve a good glycemic control. Health education can be given to improve the self-care practices among diabetics. But education can be effective only if we first understand the knowledge and practices of the patient with regard to the disease, complications and its management.

METHODS

This cross-sectional study was carried out to define level of knowledge regarding diabetes among 300 diabetes patients attending IPD and OPD from Geetanjali medical college and hospital in Udaipur city of Rajasthan, India during the study period of 1st December 2015 to 30th May 2016. After receiving approval from the human research and ethical committee (HREC), the information will be collected on a pre-tested, pre-structured, well designed scheduled questionnaire prepared for further statistical analysis to fulfill the objectives of study. The subjects will be explained with purpose of the study, interview based and assure for secrecy and confidentiality of the information which they provided us, after obtaining the written consent, the demographic profile.

Sample size estimation was assuming 95% confidence level and 80% power and 6% to be the absolute error with the proportion of 50% prevalence and 10% safety margin a total of 300 cases has been obtained using statistical method of sample size determination;

$$\text{Sample size (n)} = \frac{(Z_{\frac{\alpha}{2}}+Z_{(1-\beta)})^2 \ P(1-P)}{E^2}$$

The objective of this study was to access the knowledge of diabetic patients regarding the disease features, risk factors and its complications. And to access the knowledge of diabetic patients concerned with diabetes mellitus. And to access the knowledge about life style factors to prevent diabetes.

RESULTS

A total of 300 participants were taken under study in which 45.0% males and 55.0% females. Majority of the patients (96.0%) aged more than equal to 30 years. 34.3% of patients were illiterate and 32.0% were ≤ secondary and 33.7% were more than secondary. Most of the patients 64.3% have been diabetic since more than 5 years and majority of them 91.7% were of type II. Positive family history of diabetes was reported in 71.0% of patients (Table 1).

Table 1: Characteristics of studied diabetic patients.

Characteristic variables	Number of patients	Percentage (%)
Gender		
Male	135	45.0%
Female	165	55.0%
Age (years)		
Less than 30	12	4.0%
More than equal to 30	288	96.0%
Educational status		
Illiterate	103	34.3%
Less than / equal to Secondary	96	32.0%
More than Secondary	101	33.7%
Duration of diabetes		
Less than 1 year	20	6.7%
1-5year	81	27.0%
5-10 year	115	38.3%
More than10 years	78	26.0%
Can't recall	6	2.0%
Type of diabetes		
Type 1	25	8.3%
Type II	275	91.7%
Family history of diabetes		
No	87	29.0%
1st degree relatives	144	48.0%
2nd degree relatives	69	23.0%

Table 2: Respondent's correct knowledge regarding diabetes mellitus (n=300).

Variables	Numbers	Percentage (%)
What is diabetes?	187	62.3%
What causes diabetes?	163	54.3%
Is diabetes Hereditary?	201	69.0%
Is diabetes Infectious?	274	91.3%
How can diabetes be diagnosed?	279	93.0%
Is exercise beneficial for control?	235	78.3%
Is dietary modification beneficial for control?	226	75.3%
Stop smoking / alcohol is beneficial?	221	73.7%
Once controlled drugs should be stopped?	240	80.0%
Diabetes can be cured?	215	71.7%

On the knowledge regarding diabetes questionnaire, the assessment regarding the knowledge of diabetes was good as 187 (62.3%) of the population knows what diabetes is and 163 (54.3%) knows the causes of diabetes. It was observed that 201 (69.0%) had knowledge about the hereditary nature of the disease, 274 (91.3%) correctly answered regarding non-infectious nature of the disease and 279 (93.0%) had correctly answered that diabetes can be diagnosed by blood sugar examination. 235 (78.3%) were aware of importance of exercise for the control of disease while 226 (75.3%) said that modification in diet is essential for the control of the disease. 221 (73.7%) said that quitting smoking or alcohol is beneficial for control. Drugs should be continued even after control of blood sugar was the response from the 240 (80.5%) and 215 (71.6%) knows that diabetes can be cured (Table 2).

Table 3: Respondents correct knowledge about symptoms of diabetes (n = 300).

Symptom	Number of patients	Percentage (%)
Frequent urination	249	83.0 %
Frequent hunger	40	13.3 %
Frequent thirst	26	8.7 %
Weight loss	50	16.7%
Numbness in feet	60	20.0%
Don't know	40	13.3%

Table 4: Respondents correct knowledge about risk factors of diabetes (n = 300).

Risk factor	Number of patients	Percentage (%)
Family history	180	60.0%
Increasing age	188	62.7%
Smoking	86	28.7%
Overweight	216	72.0%
Lack of regular exercise	197	65.7%
Gestational diabetes	79	26.3%
Low birth weight	47	15.7%
Mental stress	240	80.0%
Impaired glucose tolerance	12	4.0%
Sedentary lifestyle	242	80.7%
High cholesterol level	125	41.7%
Hypertension	127	42.3%
Oily foods	214	71.3%
Fast food	191	63.7%
Soft drinks	198	66.0%
Don't know	2	8.0%

It was found that every patient under study knew that both genders could be involved with diabetes. It was observed that 249 (83.0%) knew that frequent urination is the most common symptom of diabetes whereas symptoms such as frequent huger, frequent thirst, weight loss and numbness in feet was low. Besides, 40 (13.3%) of them don't had any knowledge about the symptoms of diabetes (Table 3).

It was observed that mental stress, sedentary life style, overweight and oily food i.e. 80.0%, 80.0%, 72.0% and 71.2% respectively were common risk factor of diabetes known to patients. On the other part substantial number of the respondents were aware of the other common risk factors of diabetes such as intake of soft drink, lack of regular exercise, eating fast food, increasing age and family history respectively. Besides, the knowledge regarding the risk factors such as hypertension, high cholesterol level, smoking, gestational diabetes, low birth weight and impaired glucose tolerance respectively was low and 8.0% patients were found to have no knowledge regarding the risk factors (Table 4).

Table 5: Respondents correct knowledge about complications of diabetes (n = 300).

Complication	Number of patients	Percentage (%)
Heart disease	234	78.0 %
Kidney disease	32	10.7%
Eye disease	165	55.5 %
Foot problems	60	20.0%

Regarding knowledge about complications of diabetes, heart disease was stated to be the highest in patients which was 234 (78.0%) followed by eye disease 165 (55.5%), foot problems 60 (20.0%) and kidney diseases 32 (10.7%) (Table 5).

Table 6: Knowledge of respondents about life style factors to prevent diabetes (n = 300).

Factors	Number of Patients	Percentage (%)
Healthy diet	220	73.3 %
Regular exercise	125	41.7 %
Weight control	120	40.0%
Don't know	75	25.0%

Healthy diet was indicated to be the most important lifestyle factor known to 220 (73.3%) that could help in prevention of diabetes. Knowledge of other lifestyle factors which can prevent diabetes such as regular exercise and weight control factors were lacking behind. However, 25.0% don't know that life style can prevent diabetes (Table 6).

DISCUSSION

The increasing prevalence of diabetes and its complications in India would pose a real threat to existing health services. Awareness of the risk factors of diabetes can assist in its early prevention and reduce its incidence. The present study depicted that 71.1% of the subjects had correct knowledge about diabetes being a non-curable

disease and hence, as many as 58.0% believed that anti-diabetic drugs cannot be stopped once the sugar levels are controlled. Similar results were obtained in a study conducted in Andhra Pradesh, India.[5] The finding suggests need for adequate counseling of all diabetic patients not only at the time of diagnosis but time and again at each and every follow up visit in order to reinforce the importance of drug compliance. The findings of the present study were quite similar to the findings of studies conducted on knowledge on risk factors of diabetes in different population groups.[6] The present study reveals that even though majority of the subjects (69.0%) were aware about the hereditary nature of type 2 diabetes mellitus, myth that excess consumption of sugar causes diabetes was highly prevalent (70.7%). In contrast to our findings, a study conducted in Warangal revealed that 63.5% of the participants correctly knew that there was no relation between excess sweet consumption and causation of diabetes.[7,8]

This could be because of more number of literate study subjects in the study done in Warangal, India. In the present study, it was observed that majority of the subjects, 73.3% and 41.7%, was aware about beneficial effects of healthy diet and regular exercise in diabetes respectively. Similar results were also obtained in various other studies done in Gujarat and Karnataka, respectively.[9]

The findings are consistent to the study conducted in Saudi Arabia, where obesity and lack of physical exercise were the risk factors of diabetes as most frequently stated by the respondents.[10] However, in a Chennai study, it was found that knowledge about the role of obesity and physical inactivity in the occurrence of diabetes was very low, with only 12% of study subjects reported these as the risk factors for diabetes.[1] In this study, many respondents were not aware of other major risk factors, such as gestational diabetes mellitus (GDM), IGT, hypertension, and smoking. International literature has portrayed that people with IGT are at an increased risk of type-2 diabetes, and 50% of them actually develop the disease.[3]

CONCLUSION

Overall, the respondents participated in this study have good knowledge about diabetes and average awareness regarding risk factors, complications and symptoms of diabetes. Diabetes education and socio-demographic factors need to be considered to improve the awareness regarding the risk factors of diabetes. It has been found that there is knowledge regarding modification of lifestyles to prevent diabetes. From public health perspective, there is a critical need for innovative target oriented prevention programs for people who are at risk of diabetes as awareness programs may motivate general population and high-risk individuals to adopt a healthy lifestyle, undergo routine medical check-ups, and be an active player in the prevention of diabetes.

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