

Study of awareness of diabetes mellitus among diabetics and non-diabetics and drug utilisation pattern in diabetics attending tertiary care general hospital in India

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ABSTRACT

Background: Diabetes Mellitus (DM) is one of the most challenging public health problems. It is important to know about the awareness level of a disease condition in a population, which plays a vital role in future development, early detection and prevention of disease.

Methods: A total of 200 subjects were interviewed and their details were noted in a specially designed data collection form. The questionnaire contained a series of questions related to demographic characteristics and awareness of DM including general knowledge, risk factors and complications of diabetic and non-diabetic patients.

Results: Among 150 subjects were diabetic and 50 were non-diabetic. 60 (40%), 14(28%) of diabetics and non- diabetics were between the age of 41-50. 101 (67.3%) were male, 49 (32.6%) were female. 101 (67.3%) of the study participant had family history of diabetes in diabetic. 45 (44.5%) diabetic, 20 (40.81%) non-diabetic male knows the risk factor for diabetes mellitus and 35 (34.6%), 21 (42.8%) were aware of symptoms, 09(8.9%), 03(6.1%) awareness on complication of diabetes. 21 (20.7%), 06 (12.2%) doesn't know about Risk factors.

Conclusions: The present study conclude a current situation of knowledge and awareness of diabetes mellitus and also emphasizes the need for improvement in knowledge and awareness on diabetes mellitus among the diabetic as well as non-diabetic subjects in order to achieve prevention and better control of diabetes risk factors, complications and its management.

Keywords: Attitude, Diabetic, Diabetes mellitus, Knowledge, Non-diabetic

INTRODUCTION

Diabetes mellitus (DM) is a major clinical and public health problem in developed and developing countries. The prevalence of type 2 DM is increasing now in developing countries. In India an estimated 40 million people had diabetes in 2007, accounting for about 20% of the world's diabetic population and 171 million individual suffering from diabetes around the worldwide.^{1,2} Its incidence is increasing rapidly, and is estimated that this

number will almost double throughout the world by the year 2030.^{3,4} The increase in incidence of diabetes in developing countries follows the trend of urbanization and lifestyle changes. Non-communicable diseases such as diabetes, cardiovascular diseases, chronic obstructive lung diseases, hypertension, mental illness and cancer have already surpassed communicable diseases as the leading causes of death in India.¹

Diabetes is a metabolic syndrome characterized by inappropriate high blood glucose resulting in the form of either low level of insulin or in the form of abnormal resistance to insulin effect coupled with inadequate level of insulin secretion to compensate.⁵ Risk factors for diabetes include both non-modifiable (age/ethnicity/family history) and modifiable ones (adiposity, decreased physical activity and dietary factors).⁶ The characteristic symptoms are excessive urine production (polyuria), increased thirst and increased fluid intake (polydipsia) and blurred vision. These symptoms are likely to be absent if the blood glucose is only mildly elevated.² Diabetics are at higher risk of heart disease, stroke, high blood pressure, blindness, kidney disease, nervous system disease.⁷ Macrovascular and microvascular complications cause significant morbidity and mortality among diabetic people.⁸ The present study aimed to determine the level of awareness, knowledge and attitude about diabetes and analysis of the drug utilization pattern in diabetics.

METHODS

This observational study was conducted at NRI General Hospital during the period of 6 months in accordance with the Declaration of Helsinki after obtained Institutional Ethical Committee approval. Written informed consent will be obtained from the study participants. Patients will be screened prior to selection and eligibility will be assessed according to the specified inclusion and exclusion criteria.

A total of 200 subjects were interviewed and their details were noted in a specially designed data collection form. Among them 150 subjects were diabetic and 50 were non-diabetic. The questionnaire contained a series of questions related to demographic characteristics and awareness of DM including general knowledge, risk factors, complications and drugs used by the patients. The entire questionnaire will be available in English but is explained to the patient in their own language. Quaternaries were Obtained Socio-demographic data with Sex (male/female) Age, Locality (Urban/Semiurban/Rural), Education (Illiterate/Primary school level/High school level/college level/Graduate), Family history of DM (Yes/No), Duration of diabetes if diabetes is positive.

Inclusion criteria

- Diabetic patients with Type 1 or Type 2 DM
- Non-diabetic individuals who are willing to participate in this study
- Patients aged >15 years.

Exclusion criteria

- Mental retardation
- Drug addiction
- Pregnant women
- Participants who are not willing to give consent

Statistical analysis

The analysis will be done by paired t- test. The awareness of the diabetic condition will be done by using the log ranked test.

RESULTS

A total of 200 subjects were interviewed and their details were noted in a specially designed data collection form. Among them 150 subjects were diabetic and 50 were non-diabetic. Almost 60 (40%) of diabetic participants were between the age group of 41-50, non-diabetics were 14(28%) and following another diabetic age groups were 31-40 years, 51-60 and above 60 years which were 52 (34.6%), 17 (11.3%) and 11 (7.3%) and non diabetic groups were 15 (30%), 12 (24%) and 04(8%) respectively. More than half 101 (67.3%) in diabetic male and 49 (32.6%) were female. 29(58%) were males and 21 (42%) participants non-diabetic in female. The majority 55 (36.6%) of the participants were Hindus in diabetics and 18 (36%) were non-diabetics in Christian religion. Nearly 105 (70%) Subjects were married in diabetics and 39 (78%) were in non-diabetics. Regarding the educational status of study subjects, majority of them 64 (42.6%) were primary school in diabetics and 20 (40%) were in Secondary school (Table 1).

Table 1: Socio demographic characteristics of study.

Demographic data	Variables frequency (%)	Variables frequency (%)
	diabetics	Non-diabetics
Age in year	15 - 30	05(10)
	31 - 40	15(30)
	41 - 50	14(28)
	51 - 60	12(24)
	>60	04(8)
Sex	Male	29(58)
	Female	21(42)
Religion	Muslim	10(20)
	Christian	18(36)
	Hindus	17(34)
	Others	05(10)
Marital Status	Married	39(78)
	Single	05(10)
	Divorced	01(2)
	Widowed	05(10)
Educational Status	Illiterate	15(30)
	Primary school	12(24)
	Secondary school	20(40)
	Higher education and above	13(26)

Health Profile of Study Subjects, Majority 101 (67.3%) of the study participant had family history of diabetes in diabetic patients and only 10 (20%) were family history of diabetes in non diabetic participants. Concerning duration of drug treatment 60 (40%) of study participants were 1-3 years and 49 (32.6%), 41 (27.3%) were 3-5, above 5 years duration of treatment in diabetes patients. (Table 2).

The knowledge regarding the risk factors of diabetes. 45 (44.5%) diabetic patients and 20 (40.81%) non-diabetic male patients were having idea that hereditary is one of the major risk factor for diabetes mellitus. 35(34.6%) diabetic and 21(42.8%) non-diabetic male participants were aware of symptoms like Polyuria, polydypsia abnormal sensation of feet, numbness of hands, nocturia weight loss. Only 09 (8.9%) diabetic and 03 (6.1%) non-diabetic male participants have the awareness on complication of diabetes. 21 (20.7%) diabetic and 06 (12.2%) non-

diabetics doesn't know about Risk factors, Symptoms and complications of diabetes. (Table 3).

Table 2: Family history of DM and duration of insulin therapy.

Variables		Diabetic variables frequency (%)	Non-diabetic variables frequency (%)
Family history of DM	Yes	101 (67.3)	10 (20)
	No	49 (32.6)	40(80)
Duration of insulin therapy for diabetic patients	1 - 3yr	60 (40)	-
	3 - 5yr	49 (32.6)	-
	>5yr	41 (27.3)	-

Table 3: Gender wise knowledge on diabetes among diabetic patients.

Parameters	Diabetic male patients (%)	Diabetic female patients (%)	Non-diabetic male patients (%)	Non-diabetic female patients (%)
Risk factors	45(44.5)	12(41.3)	20(40.81)	07(33.33)
Symptoms	35(34.6)	13(44.8)	21(42.8)	08(38)
Complications	09(8.9)	01(3.4)	03(6.1)	01(4.7)
Don't Know	21(20.7)	03(10.3)	06(12.2)	05(23.8)
Total	101	29	49	21

DISCUSSION

There is very little data on the level of awareness about diabetes in developing countries like India. Such data is extremely important to plan the public health polices with specific reference to implementation of national diabetes control programmers. A quarter of people living in Chennai were unaware of a condition called 'diabetes' and 60% of people with diabetes did not know that their disorder could affect their organs¹. Many people did not know that diabetes was preventable or what steps could be taken to minimize the risk of developing the disorder⁸. Training of the individual is an integral part for self-management of diabetes.⁷

The monetary costs of managing diabetes drain between 5-25% of an average Indian family's income¹. Given this situation, it is imperative that urgent steps are taken to prevent DM. DM is emerging as a major public health challenge in The Gambia and that the current health infrastructure is inadequate to address this challenge, effective control and prevention strategies based on sound educational programs need to be defined and implemented.⁹ Those living with this condition should be properly educated on lifestyle changes and diet modifications so as to prevent lifelong complications. These programs should also target community and

religious leaders as well as other social groups (including schools) because the impact of this disease is felt by the entire population. Our findings show that awareness and knowledge about diabetes were less among diabetic patients. The mean age of our study population was 40-50 years, as age is one of the risk factors for the development of diabetes.¹⁰ Similar findings are seen in previous studies where there is a high prevalence of diabetes among the elders.^{11,12} Many patients are illiterate in this study group, as educational level is positively associated with knowledge of the disease.⁹ Similar finding was seen in a study done in rural area of Chennai, which reports that the higher the educational levels, the higher the knowledge about diabetes.¹³

CONCLUSION

The present study concludes a current situation of knowledge and awareness of diabetes mellitus and also emphasizes the need for improvement in knowledge and awareness on diabetes mellitus among the diabetic as well as non-diabetic subjects in order to achieve prevention and better control of diabetes risk factors, complications and its management.

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Conflict of interest: None declared

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