



STUDY OF KNOWLEDGE AND AWARENESS ON DIABETES MELLITUS AND INSULIN USAGE IN DIABETIC PATIENTS AT TERTIARY HEALTHCARE CENTRE

Anjaneya Prasad V., Anjani Kumar C*, Rama Devi Ch and Vinay Reddy B

Department of General Medicine, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences & Research Foundation, Chinoutpalli, Andhrapradesh

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ABSTRACT

Background: Worldwide diabetes is recognized as one of the leading causes of death and disability. Insulin is an important part of diabetes treatment, but one-third of patients fail to take their insulin as prescribed. Since, diabetes treatment continues for lifetime, there is a need to assess the knowledge and understanding of patients in relation to their disease process and its management.

Materials and method: A cross sectional, knowledge and attitude survey was carried on patients with type II diabetes mellitus patients attended medicine diabetes OPD in tertiary care Hospital during the period of July 2017 to June 2018. 100 diabetic Patients ≥ 18 years of age, willing to respond to the study questionnaire were interviewed.

Results: Regarding the Knowledge on diabetes only 28% of subjects have moderate understanding about diabetes 72% has poor understanding. Only 44% of subjects have moderate knowledge about complications of diabetes. 60% of subjects know why insulin is prescribed for diabetes 40% of subjects doesn't know why it is prescribed with 28% of the subjects think insulin can cause harm to them.

Conclusions: Our study shows that majority of the diabetes patients had average knowledge and awareness towards diabetes mellitus and insulin therapy. Hence, proper education and awareness programmes must be planned to educate people on proper directions and attitude towards diabetes and insulin usage in order to avoid unnecessary complications.

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INTRODUCTION

Diabetes mellitus is a metabolic disorder with various etiological factors characterized by chronic hyperglycaemia due to disturbance of carbohydrate, fat and protein metabolism which resulted from either insufficient insulin secretion or resistance to the action of insulin or either both.^(1,2)

India is rapidly emerging as the diabetes capital of the world. Currently, there are approximately 63 million diabetics in India, second only to China, and this figure is likely to increase substantially by 2025.⁽³⁾

Diabetes is a silent disease, many sufferers became aware that they have diabetes only when they develop one of its life threatening complication.

Diabetes related complications such as diabetic retinopathy⁽⁴⁾, neuropathy, and cardiovascular disease result in a significant morbidity and mortality rate which have placed a heavy financial burden on the society.

Knowledge of diabetes mellitus can assist in early detection of disease and reduce the incidence of complications.

The treatment for DM includes administration of Oral Hypoglycaemic agents and Injectable Insulin therapy along with life style modifications. The insulin therapy requires coordination and understanding of both the individual with diabetes and those responsible for diabetic care.

Inadequate knowledge regarding insulin is likely to influence its acceptance and adherence. Being an Injectable drug, its use is more likely to be influenced by misconceptions than OADs.

A large proportion of type 2 diabetics also eventually require insulin for blood sugar control and the assessment of their knowledge and attitude towards insulin, even if not using this drug, was considered important to evaluate the gaps that need to be addressed.⁽⁶⁾

Studies have consistently shown that improved glycemic control reduces the rate of complications and evidence suggests that patients, who are knowledgeable about DM self-care, have better long term glycemic control.

*Corresponding author: **Anjani Kumar C**

Department of General Medicine, Dr. Pinnamaneni Siddhartha Institute of Medical Sciences & Research Foundation, Chinoutpalli, Andhrapradesh

MATERIALS AND METHODS

Study design

A cross sectional, observational, KAP (knowledge, attitude and practice) survey was carried out in type II diabetes mellitus patients. The study was conducted during the period of July 2017 to June 2018 after obtaining the institutional ethical committee approval in outpatient department of tertiary care Hospital.

Inclusion criteria - Adult Diabetic Patients ≥18 years of age, who were willing to respond to the study questionnaire, were interviewed in a language they understood, and the questionnaire was accordingly filled by the investigator.

Exclusion criteria - Patients who were not physically or mentally able to conduct the interview were excluded. Written informed consent was obtained prior to interview.

Table 1

Demographic data	Variables	Frequency (%)
Age in years	18-30	4
	31-40	12
	41-50	40
	51-60	16
	>60	28
Sex	Male	48
	Female	52
Educational status	Illiterate	52
	Primary school	40
	Secondary school	7
Family history of diabetes	Higher education	1
	Yes	60
Duration of diabetes	No	40
	< 1yr	12
	1-5 yrs	40
	5-10 yrs	20
	> 10 yrs	28

Table 2

Variables	Mean	Standard deviation
Fasting blood glucose	146.9	34.4
Postprandial HbA1c	208	39.1
	10.5	1.81

Table 3

Variables	Frequency (%)
on OHAS Only	63
on OHAS + Insulin	37

Table 4

	Good – moderate Understanding	Poor understanding
What do you understand by diabetes?	28%	72%
What are the complications of diabetes?	44%	56%
Do you know the role of diet and exercise in control of diabetes?	YES	NO
Are you aware of HbA1c levels?	92%	8%
	12%	88%

Do you ask physician in case you have queries?	28%	72%
Do you know why insulin is prescribed for diabetes?	48%	52%
Do you think insulin can cause harm?	28%	72%

Table 5

Advised but not using what is the reason?	Dislike 50%(10)	Financial 30%(6)	Fear of hypoglycemia 20%(4)
Are you confident about self administering insulin?	Yes 21.6% (8)	Partly 29.7% (11)	No 48.6% (18)
Where do you keep your insulin?	Refrigerator 43.2% (16)	Room temperature 29.7% (11)	Not fixed 27% (10)
Do you rotate the site?	Yes 21.6% (8)	Sometimes 32.4% (12)	No 45.9% (17)
Where do you inject insulin	Upper arm 31.5% (5)	Abdomen 57.75% (21)	Thigh 29.72% (11)

RESULTS

Total of 100 study participants were interviewed using Structured Questionnaire with response rate of 100%. From the total Sample Size Population almost 40% of the respondents were between the age group of 41-50 years, 28% above 60 years, 16% between 51-60 years, 12% between 31-40 years and rest 4% are in age group of 18-30 yrs. Of the subjects 52% of them are females and 48% are males.

Majority of the participants (52%) were Illiterate, 40% have primary schooling and only 8% have Secondary Schooling. 60% of the subjects have family history of diabetes. Concerning duration of diabetes 40% subjects were 1-5 years duration, followed by 28% above 10 years duration, 20% (5-10 years), and 12 % (less than 1 year duration).

Study population were having Mean Fasting blood glucose levels 146.9± 34.4, postprandial blood glucose levels 208± 39.1 And HbA1c Values of 10.5±1.81.

Regarding the Knowledge on diabetes only 28% of subjects have moderate understanding about diabetes 72% has poor understanding. Only 44% of subjects have moderate knowledge about complications of diabetes. 92%of subjects have good knowledge about role of diet and exercise in control of diabetes, and 8% have poor knowledge. 88% of subjects are unaware of HbA1C level. Out of total subjects only 28% subjects ask physician about the queries partially or completely remaining 72% of subjects hesitate to ask queries to the physician.

60%of subjects know why insulin is prescribed for diabetes 40% of subjects doesn't know why it is prescribed with 28% of the subjects think insulin can cause harm to them. Out of 63 OHAs using patients 20 members were advised insulin but they are not using because of dislike 50%, financial issues 30% and fear of hypoglycaemia 20%.

Out of 37 insulin using subjects only 21.6% are completely confident about self-administration of Insulin and 57.75% of subjects inject insulin over abdomen and 29.72 % over thigh and rest 31.5% individuals on upper arm. Only 21.6% of

subjects rotate injection site. 43.2% of individuals store insulin in refrigerator, 29.7% at room temperature and 27% of individuals doesn't know where to preserve the insulin.

DISCUSSION AND CONCLUSION

This study assessed the knowledge and practice of diabetic patients towards the disease and its management. The findings showed lack of awareness of disease among the subjects. Aided by increasing urbanization, rural to urban migration, adoption of sedentary lifestyle, and unhealthy food habits, the diabetes pandemic continues to snowball worldwide. These adverse factors interact with the already heightened genetic predisposition for diabetes among Indians, leading to onset of diabetes at a younger age.^[7]

In addition to modification of diet and lifestyle and institution of insulin or other anti-diabetic drugs, the management of this complex metabolic disease needs continuous educational and counselling efforts. Many studies also had shown that diabetic patients had poor level of knowledge about the disease and self care management.⁽⁸⁻¹²⁾

Despite these limitations, this study provides a "situation analysis" regarding knowledge about diabetes and its management in patients visiting hospitals. This can be utilized as baseline to identify educational needs and to plan more effective diabetes care services.

Studies from the Indian subcontinent have shown that substantial expenditure is incurred by people with diabetes; resources could be saved by earlier detection, effective management, and effective reduction in diabetes comorbidities and complications through insulin-based improved diabetes care.⁽¹³⁾ Diabetes clinics in tertiary care hospitals are probably in the best position to launch interventional and educational programs with the help of local physicians, healthcare workers, community leaders, and mass media.

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