Original Research Article

A Study to Assess the Knowledge and Practices of Self Administration of Injection Insulin among Diabetic Patient Attending Out Patient Department of Krishna Hospital, Karad

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ABSTRACT

Background: Diabetes mellitus (DM) is recognized as one of the leading cause of death and disability worldwide, India is in leading position with largest number of Diabetics. As per World Health Organization (WHO), it is expected that approximately 60 million people by the year 2017 and 80 million people by 2030 in India and 366 million people in the world will be affected by Diabetes mellitus.

Materials and Methods: Objectives are to assess the level of knowledge of patient with diabetes mellitus regarding self administration of insulin injection, assess the practices regarding self administration of insulin injection among the diabetic patient, to determine the association between the knowledge and practice of patient with diabetes mellitus regarding self administration of insulin injection related demographic variable. Descriptive approach. Total sample 40 and convenient sampling technique was used. Data was collected by using a self structured questionnaire. The data were tabulated and using descriptive and inferential statistics.

Results: Out of 40 samples 0% having poor knowledge, 19 (47.5%) having average knowledge, 21 (52.5%) having good knowledge. Out of 40 samples 1 (2.5%) having poor practice, 33 (82.5%) having average practice, and 6 (15%) having good practices. It is evident that there is an association between demographic variable educational status and knowledge level of patient and residency with the practice level of patient.

Conclusion: The main outcome of the study that the diabetic patient must have the knowledge and practice regarding self administration of inj Insulin. If providing proper education may increase their knowledge and practice level.

Key words: Knowledge, practice, self administration, Diabetes mellitus.

INTRODUCTION

Diabetes mellitus is a silent disease and is not recognized as one of the fastest growing threats to public health in almost all countries of the world. It is also called the "disease of prosperity". Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. Diabetes has emerged as a major health care problem in India. According to Atlas published by the International Diabetes Federation (IDF) there were an estimated 40 million persons with diabetes in India 2007 and the number predicted to rise to almost 70 million people by 2025. The countries with largest number of diabetic people will be in India, china and

U.S.A by 2030. WHO estimates that mortality from diabetes, heart disease and stroke costs about $210 billion in India in the year 2005. Much of the heart disease and stroke in these estimates was linked to diabetes. WHO estimates that diabetes, heart disease and stroke together will cost about $ 333.6 billion over the next 10 years in India alone. [1]

Need for the Study

The greatest challenge faced by the modern world is Diabetes mellitus (DM). The lifestyle disease known to be restricted to urban population in the country till a few years ago has now invaded rural India as well, with as much as 3% of the total rural population being diagnosed with diabetes. Urban diabetic patients are estimated to account for nearly 10% to 11% of the total 25 million patients in India. The disease presently affects 10% of the affluent class and nearly 33% of the lower levels of population. The prevalence of diabetes is 16.6% in Hyderabad, followed by Chennai with 13.5%, Bangalore with 12.4%, Delhi with 11.6%, and Mumbai with 9.3%. By 2025, the number of diabetes patients is expected to increase by 41% in developed countries to 72 million from the present level of 51 million. In developing countries, the incidence of the disease would surge by 170% to 228 million from 84 million. [2-4]

In patients with diabetes, physicians are often concerned about increasing functional limitations that may impede a successful self-management. In particular, the correct handling of the insulin injection requires complex self-management abilities. Among these functional limitations, loss of visual acuity, loss of manual abilities and cognitive decline are of most importance. [2-4]

By looking at the statistics it is clear that diabetes is affecting the people in drastic way. By reviewing the previous studies it's evident that the diabetic patients have lesser knowledge regarding its management especially in the aspects such as self administration of insulin injection.

Awareness and knowledge regarding diabetes is still grossly inadequate in India. Massive diabetes education programmers are urgently needed both Urban and rural India. [4]

Objectives of the study
1. To assess the level of knowledge of patient with diabetes mellitus regarding self administration of insulin injection.
2. To assess the practices regarding self administration of insulin injection among the diabetic patient.
3. To determine the association between the knowledge and practice of patient with diabetes mellitus regarding self administration of insulin injection related demographic variable.

RESEARCH METHODOLOGY
Research approach: A descriptive research
Study design & period: Institution based cross sectional study design was used to assess Knowledge and attitude on self-administration of insulin from January 1 to February 20, 2016.
Data Collection Method: Interview with structured questionnaire was performed by revising questionnaires developed from similar study, the objective of the present study to collect quantitative data .the questionnaire was designed in Marathi.
Research setting: The study was conducted in Krishna hospital, which is a teaching and regional hospital located in Karad city, Satara.
Population: All type- diabetic patients who are attending out-patient department in Krishna Hospital, Karad.
Sampling Size: A total of 40 were taken from types one DM with response rate.
Criteria for Selecting Samples
Inclusion Criteria:
All type diabetic patients attending at Krishna hospital chronic follow up clinic were included in this study.
Exclusion Criteria:
Diabetes patients who were severely ill, age less than 18 year and psychiatric

patients were excluded from the study.

Development of tool: After an extensive review of literature and with the help of expert the structured questionnaires were prepared to assess the knowledge and practice of self administration of injection insulin among diabetic patient attending outpatient department of Krishna hospital Karad.

Section 1: Demographic variable - age, sex, religion, education, onset history of DM, income, marital status, duration of insulin therapy, family history of DM.

Section 2: Structured questionnaires for assessing knowledge. It contains 10 questions.

Section 3: Structured questionnaires for assessing practice. It contains 10 questions.

The tool which was developed in English was translated into Marathi, retranslation was done and language validity was established.

Pilot study: The study was conducted with 10% samples. The purpose to conduct the pilot study is to verify the feasibility to conduct main study and design on plan of statistical analysis.

Data collection procedure: Formal permission was obtained from the nursing college principal, Medical Director of K.I.M.S KARAD. A total of 40 diabetic patient who administer self injection insulin. The objective of study was explained to all 40 patients and written informed consent was obtained. Structured Interview method used.

Plan for data analysis: The data collected, organized, tabulated, and analyzed by using descriptive and inferential statistics and in stat software.

ANALYSIS AND INTERPRETATION

Table: 1 Frequency and percentage distribution according to socio demographic data N=40

Sr no	Socio demographic variables	Frequency	Percentage (%)
1	**Age (years)**		
	35-55	21	52.5
	56-75	19	47.5
	76-95	00	00
2	**Gender**		
	Male	23	57.5
	Female	17	42.5
3	**Religion**		
	Hindu	26	65
	Muslim	14	35
	Christian	00	00
4	**Education**		
	Illiterate	05	12.5
	Primary	17	42.5
	Secondary	10	25
	Higher secondary	03	7.5
	Diploma	02	05
	Graduate	03	7.5
5	**Onset history of DM**		
	1-4Yrs	21	52.5
	5-9Yrs	11	27.5
	>10Yrs	08	20
6	**Income**		
	5000-10,000 RS	23	57.5
	10,000-15,000 RS	15	37.5
	15,000-20,000 RS	02	5
7	**Family history of D.M**		
	Yes	08	20
	No	32	80
8	**Duration of insulin therapy**		
	< 1 year	20	50
	3-5 years	17	42.5
	>5 years	03	7.5
9	**Residence**		
	Urban	15	37.5
	Semi –urban	07	17.5
	Rural	18	45
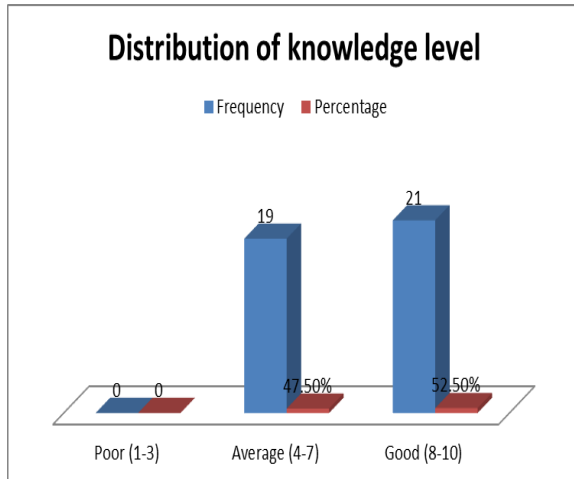
Graph 1: Shows distribution of knowledge level N=40

Result: By above we can conclude that in overall 40 patients participated in study, the knowledge level of patient is assessed good, average and poor. 21(52.5%) were having good knowledge, 19(47.5%) were having average knowledge; none of them were having poor knowledge. Here majority is for good knowledge level 21(52.5%).
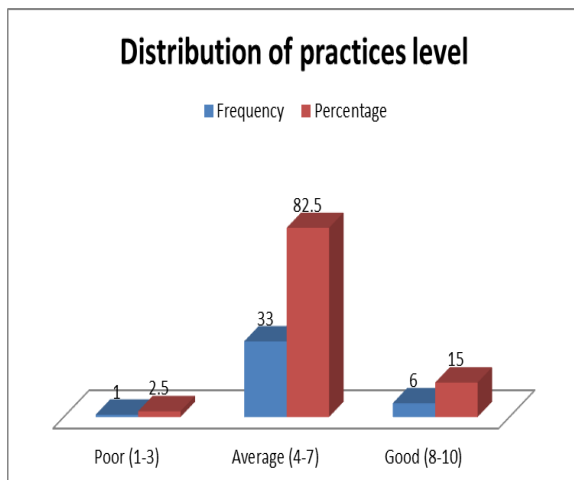
Graph 2: Shows distribution of practices level N=40

Result: By above we can conclude that in overall 40 patients participated in study, the practices level of patient is assessed good, average and poor .6 (15%) is having good practices,33(82.5%) is having average practices and 1(2.5%) is having poor practices respectively here majority is average practices level i.e. 33(82.5%).

Result: By above we can conclude that in overall 40 patients participated in study of practice and knowledge of self administration of injection insulin,

knowledge score was 7.225±1.405 and practice score was 6.000±1.519.

Table 2: Shows knowledge and practice score and association regarding self administration of injection insulin among diabetic patient. N=40

Sr. No	Knowledge	practice
Mean ±SD	7.225±1.405	6.000±1.519
Min.	4	3
Median	9	10
Max	8	6
Standard Error of mean	0.2221	0.2402
Score	7.225±1.405	6.000±1.519
Good	8.63	7.519
Average	7.225	6.000
Poor	5.82	4.481

Table 3: shows unpaired t-test between knowledge and practice N=40

Unpaired t-test		P value	t-test
Knowledge ± SD	Practice ± SD	<0.0003 extremely significant	3.744 with 78 d.f
7.225±1.405	6.000±1.519		

Result: In the above table P value is 0.0003 which is < 0.5 knowledge and practices have significantly associated.

Table: 4 Shows association between knowledge and practice of self administration of injection insulin with their Education N=40

Knowledge and practice of self administration of injection insulin		
Education	**One-way ANOVA**	
	Knowledge	**Practice**
	Mean ±SD	**Mean ±SD**
Primary	6.663±1.399	5.5±1.102
Secondary	7.5±1.179	6±1.333
Higher Secondary	8.5±0.5345	7.375±1.996
One-way ANOVA		
Education	**Knowledge**	**Practice**
P-value	0.0024	0.0081
F-value	7.116	5.500

Result: By above we can conclude that association between knowledge and practice is highly significant i.e. p value of knowledge and practice of education is<0.5

Table: 5 Shows association between knowledge and practice of self administration of injection insulin with their Residence N=40

Knowledge and practice of self administration of injection insulin		
Residence	**One-way ANOVA**	
	Knowledge	**Practice**
	Mean ±SD	**Mean ±SD**
Urban	7.8±1.082	6.86±1.685
Semi-urban	6.42±1.718	4.71±1.254
Rural	7.05±1.392	5.77±1.003
One-way ANOVA		
Residence	**Knowledge**	**Practice**
P-value	0.0780	0.0035
F-value	2.736	6.623

Result: By above we can conclude that

knowledge is not significant i.e. p value is >0.5 and practice value is significant i.e p value <0.5.

DISCUSSION AND SUMMARY

The major findings of the study were as follow:

Findings related to demographic variables were as follows:

Majority of the subjects, 21 (52.5%) who participated in the study are in the age group of 35-55 yrs of age and remaining 19 (47.5%) participated in the study are in age group 56-75 yrs.

Majority of subjects, 23 (57.5%) who participated in the study are male and remaining 17(42.5%) are females.

Majority of subjects, 26 (65%) who participated in the study are Hindus by religion and remaining 14 (35%) are Muslims by religion.

Majority of subjects, 17 (42.5%) who participated in the study are having primary education and very few 2 (5%) are having diploma by education.

Majority of subjects, 21 (52.5%) who participated in the study are having onset history of D.M since in between 1-4yrs and very few 8 (20%) are having on set history of D.M more than 10 years.

Majority of subjects, 23 (57.5%) who participated in the study are having monthly income of 5,000-10,000 Rs and very few 2 (5%) are having monthly income of 15,000-20,000 Rs.

Majority of subjects, 32 (80%) who participated in the study are not having family history of D.M and remaining 8 (20%) are having family history of D.M

Majority of subjects, 20 (50%) who participated are on insulin therapy < 1 years and very few 3 (7.5%) are on insulin therapy from > 5 years.

Majority of subjects, 18(45%) who participated are from rural area and very few 7(17.5%) are from semi urban area.

Findings related to knowledge were as follows:

Data analysis of knowledge of patient regarding self administration of Inj. Insulin says that out of 40 sample 0% having poor knowledge, 19 (47.5%) having average knowledge and 21 (52.5%) having good knowledge. Majority having good knowledge on self administration of inj. Insulin.

Findings related to practice were as follows:

Data analysis of practice of patient regarding self administration of Inj. Insulin says that out of 40 sample 1 (2.5%) having poor practice, 33 (82.5%) having average practice and 6 (15%) having good practice. Majority having average practice on self administration of inj. Insulin.

Findings on association

It is evident that there is an association between demographic variable educational status and knowledge level of patient.

It is also evident that there is no association between demographic variables; age, residency, sex, religion, onset of history, family history, duration and income with the knowledge level of patient.

It is evident that there is an association between demographic variable educational status and residency with the practice level of patient.

It is also evident that there is no association between demographic variables; age, sex, religion, onset of history, family history, duration and income, with the practice level of patient.

DISCUSSION

A similar study was conducted by a Surendranath on October 2011 to assess the knowledge and practice of insulin self administration among patient with diabetic mellitus, knowledge assessment on self insulin administration revealed that 41 (68%) of the subjects had inadequate knowledge; and remaining 19 (32%) of them had moderately adequate knowledge. None of them had adequate knowledge. Assessment of the practice revealed that 43 (72%) of the subjects had poor practice; 17 (28%) of them had fair practice, and none of them had good practice. There was a

statistically significant positive correlation between knowledge and practice on is a (p<0.05). [5]

According to our study revealed that 29 (72%) of the subjects had adequate knowledge and remaining 11 (28%) of them had moderately adequate knowledge. None of them had adequate knowledge. According to our study 24 (60%) of the subjects had fair practice and remaining 16 (40%) of them have poor practice. According to our study there is extremely significant positive correlation between knowledge and practice on ISA (p<0.0003).

CONCLUSION

The main outcome of the study is that the diabetic patient must have the knowledge and practice regarding self administration of inj. Insulin. If providing proper education may increase their knowledge and practice level.

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