Research Paper

A Descriptive Study to Assess the Knowledge and Attitude Among Diabetes Mellitus Patients with a View to Develop a Self-Instructional Module on Prevention of Complication of Diabetes Mellitus in Selected Hospital, Ahmedabad

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ABSTRACT

Researcher conducted a non-experimental descriptive study to assess the knowledge and attitude among diabetes mellitus patients with a view to develop a self-instructional module on prevention of complication of diabetes mellitus in selected hospital, Ahmedabad. The objective of the study was: 1) To assess the knowledge on prevention of complication of diabetes mellitus among diabetes mellitus patients 2) To assess the attitude on prevention of complication of diabetes mellitus among diabetes mellitus patients 3) To develop self- instructional module on prevention of complication of diabetes mellitus among diabetes mellitus patients 4) To find out association between knowledge and attitude scores with their selected demographic variable. A quantative research approach was used in research design. The research used purposive sampling method for selecting 100 patients. Structure knowledge questionnaires and attitude Likert's scale was used were reliable. Descriptive and inferential statistics was used to analyse the data. In this study out of 100 sample 0 sample having poor knowledge was 0%, 54 sample having average knowledge was 54% and 46 sample having good knowledge was 46%. In attitude score showing 44 sample having negative attitude was 44% and 56 sample having positive attitude was 56% regarding prevention of complication of diabetes mellitus. The mean knowledge scores were 26.79 and Standard deviation of knowledge score was 3.52.in association knowledge with age include calculated value of chi-square was 31.71. And tabulated value was 12.59. In attitude score association with gender include chi-square calculated value was 8.89 and tabulated value was 3.84.

In this study through the chi-square test association of knowledge and attitude with the selected demographic variable include knowledge was associated with age and attitude was associated with the gender. It revealed that diabetes mellitus patient having average knowledge and positive attitude regarding prevention of complication of diabetes mellitus. the association between knowledge and attitude with selected demographic variable by using chi-square test revealed that there was significant association at p< 0.05 level of significance. After this study with a view to develop the self-instructional module on prevention of complication of diabetes mellitus.

Key-words: knowledge, attitude, diabetes mellitus, complication

INTRODUCTION

Diabetes mellitus (DM) appears to be a global epidemic and increasingly a major non-communicated disease threatening both affluent and non-affluent society. More than 170 million people worldwide have diabetes, and this figure is projected to more than double by the year 2030, if the current trend is allowed to continue further. High morbidity and mortality rates that will surpass the ravage.

In 2002, diabetes happened to be the leading cause of death, -with 73,249 death certificates referring to diabetes as underlying cause of death and an additional 224,092 death certificate pointed to diabetes as a contributing cause of death. Diabetes is likely to be underreported as a cause of death simply because diabetes leads to many complications that ultimately cause death. Overall, death risk among people with diabetes in twice as that of people of the same age who do not have diabetes. Specially, recent epidemiology data suggests dramatic increase diabetes prevalence among young adults and pregnant women.

The management of diabetes poses a challenge to the medical and nursing staff as well as to the patients themselves. Since diabetes is a chronic disease, most diabetic patients need to continue their treatment for the rest of their lives. The emphasis is usually therefore, on the control of the condition through a tight schedule of blood glucose and urine sugar monitoring, medication and adjustment to dietary modification. Such a chronic condition requires competent self-care, which can be developed from a thorough understanding of the disease process and the management challenges by the patient and family members. This recommends the need for some form of diabetes education and counseling for the patient and family members. Educating and supporting diabetic patients in managing their daily lives are important goals of diabetic patient's care.

Both forms of diabetes ultimately lead to high blood sugar levels, a condition called hyperglycemia. Over long period of time, hyperglycemia damages the retina of the eye, the kidney, the nerves, and the blood vessels. Damage to the retina from diabetes (diabetic retinopathy) is a leading cause of blindness. Damage to the kidney from diabetes (diabetic nephropathy) is leading cause of kidney failure. Damage to the nerves from diabetes (diabetic neuropathy) is leading cause of foot and leg amputation. Damage to the nerves in the autonomic nervous system can lead to paralysis of the stomach (gastro paresis), chronic diarrhea, and an inability to control heart rate and blood pressure with posture changes.

These dramatic changes have had a great impact on urbanization and lifestyle of the Indians. As a result, diabetes mellitus has become the main public-health problem and amenable to change through early recognition at the individual level and surveillance at the population level. Results of studies showed that India is facing three-fold rise in the prevalence of diabetes in urban (5-15%) and in rural (2-6%) areas. India tops in the world with the largest number of diabetic subjects (31.7 million cases of T2DM). This is further compounded by the epidemic of obesity and doubling the cost of diabetes management. Therefore, prevention is important from monetary and from lifestyle modification point of view. Increasing awareness of risk factors and how to prevent these should be emphasized in the population. Apart from this, the lifestyle modifications (physical exercise, diet control, etc.) are appropriate measures in the prevention of diabetes. Furthermore, to control and prevent the T2DM epidemic, it must be approached in an appropriate, socioeconomically and culturally-relevant manner but very little data are available from Gujarat to support this, and for the prevention of diabetes, it is also vital to know the profile of diabetics.

As per the health profile report, the number of diabetic persons in Gujarat stands at 1, 61,578 which is 20.5 percent of the total 7, 87,435 population screened. The Gujarat pips all other states with the higher number of diabetes and hypertension cases as reported in the recent national health profile 2015 by central bureau of health intelligence under ministry of health and family welfare, rarely comes as a shock to people in a state known for its sweet tooth. However other studies have too confirmed a higher prevalence of diabetes federation, nearly 4 crore people in India suffer from diabetes. Out of these 8 to 10 percentage cases of diabetes are in Gujarat

OBJECTIVE OF THE STUDY

- To assess the knowledge on prevention of complication of diabetes mellitus among diabetes mellitus patients.
- To assess the attitude on prevention of complication of diabetes mellitus among diabetes mellitus patients.
- To develop self- instructional module on prevention of complication of diabetes mellitus among diabetes mellitus patients.
- To find out association between knowledge and attitude scores with their selected demographic variable.

LITERATURE REVIEW

The reviewed literature for the present study was organized under the following headings:
2.1 Review literature related to the knowledge of diabetes mellitus.
2.2 Review literature related to the knowledge and attitude on complications of diabetes mellitus.
2.3 Review literature related to the descriptive study of complication of diabetes mellitus.

2.1 REVIEW LITERATURE RELATED TO THE KNOWLEDGE OF DIABETES MELLITUS.

Sridhar Srimath Tirumala Konduru et al (2017), an assessment if diabetes related knowledge, attitude and practice among diabetics and non- diabetics using self-prepared questionnaires for awareness of health promotion. A study was conducted in department of pharmacy practice, Bhimavaram, Andhra Pradesh, India. A prospective and observation al study was done in 100 diabetic and 50 non-diabetic subjects. All in-patient and out patients either gender of age 20-80 years was included in the study. Pediatrics patients, pregnant/lactating women were excluded. A study concluded after analyzing the score, it was found that among diabetic patients 46% had poor knowledge, 45% had medium knowledge and 9% of good knowledge regarding diabetes mellitus where as 64% had noon diabetic had poor knowledge, 34% of non-diabetic had medium knowledge and 2% of non-diabetic had good knowledge regarding diabetic mellitus. Overall, study concludes that diabetic patient had more knowledge regarding diabetes mellitus than non-diabetic subjects.

Sandul Yasodant et al (2016), a multi centric prospective study with a phase of interventional among the diabetic patients in three diverse districts Mehasan, Chhota Udaipur and Ahmedabad of Gujarat, India. A pre-tested pilot validated questionnaire in vernacular language has been administered to 713 and 577 Type-2 diabetic patients in baseline and end line respectively. Data on knowledge about diabetes causes, symptoms, complications, management practices were collected. Data were entered and monitored in Epi Info 7 and analyzed by IBM SPSS 20 software. Baseline knowledge about diabetes causes, symptoms and complications found to be poor in this study. Change in knowledge and improved practices were revealed in end line survey because of an appropriate intervention program. This study found that

the knowledge and practices about management of diabetes could be changed with suitable designed community-based intervention programs.

Mariyam Amin Qureshi et al (2016) A community-based study on knowledge of diabetes mellitus among adult in a rural population of Kerala. A descriptive cross-sectional study was conducted in a rural panchayat of district Ernakulam of Kerala where in 343 adults were randomly interviewed from six randomly selected wards. The interview schedule had 23 items on knowledge, which were assessed in four domains including general awareness of diabetes mellitus. Its risk factors, complication, and lifestyle modification. Each item was given score, maximum score was 23. Knowledge score of less than 9 was consider poor, 9-17 as average and above 17 was taken good. Data were analyzing using SPSS version 11. The study revealed that mean age of the demographic was 17.7±15.74 years with more than half (55.7) having completed their high school education. Mean knowledge score was 15.6 being diabetic, having completed high school education and with a family history of diabetes had significantly better knowledge score (p<0.05). the study concludes that educating community on risk factors is the key strategy for the prevention of diabetes and delaying the onset of disease among high-risk individuals.

2.2 REVIEW LITERATURE RELATED TO THE KNOWLEDGE AND ATTITUDE ON COMPLICATIONS OF DIABETES MELLITUS.
Praythiesh bruce (2018) A study to assess knowledge attitude and practice about diabetes among patients with diabetes attending medicine OPD of tertiary care hospital at kulasekharam. A study was conducted department of community medicine Shree Mookambika Institute Of Medical Science, Kulasekharam, Tamil Nadu. Total sample was 200 in this study. the study was conducted on diagnosis cases of diabetic patients visiting medicine OPD SMIMS, Kulasekharam, Tamil Nadu. In this study, convenient sampling was done and was conducted from May 2016 to October 2016 using pretest posttest, semi structure questionnaires. 200 diabetic mellitus patients were enrolled during the study period. The knowledge a score of the patient was found to be 23.00±1.22, attitude score was 8.00±1.22 and practice score was 8.00±1.22 out of maximum possible score of 25, 10 and 10 for knowledge attitude and practice respectively. Knowledge score had a strong association both with attitude as well as practice score (p< 0.05). a study concludes that knowledge, attitude, practice of diabetic patients was very good.

Ruflat Nasiruddin kazi et al (2017) a study to assess knowledge, attitude and practice about diabetes mellitus and its complication in T2DM patients attending the UHC in Mumbai. This was a cross sectional descriptive study conducted at an urban health center attached to the parent medical college in Mumbai. The knowledge, attitude and practice of the 116 participants who were registered at the non-communicable disease OPD were assessed via a pre-designed, pretest interviewer administered questionnaires statistically analysis used. A study revealed that majority belonged the age group of 40-60 years (69%), 63,8% were women, 91.4% were married and 44.4% were illiterate. 13.8% of the respondents had correct knowledge about the cause of diabetes and 62.9% could correctly identify the symptoms of diabetes. knowledge regarding the complication in diabetes was found to be quite low with only 52.6% correctly identifying one or more complication. He most commonly known complication was neuropathy (83.6%) followed by nephropathy

(57.3). the attitude of the patients with respect to screening of complication was found to be poor and the same reflected in their practices. A study concludes there is lack of understanding of the basics of the disease, its prevention as well as prevention of complication in those suffering from the disease.

Michell gulbani, mary john et al (2015), A cross sectional survey done using the structured questionnaire to assess knowledge of diabetes its treatment and complications among diabetic patients. The sample size was 101 patients attending the integrated medical college, Ludhiana. There were 67 males (66.3%) and 34 females (33.7% in the study population. In this study 90 patients had type 2 diabetes and 11 had type 1 diabetes, 50.5% thought that diabetes to be incurable. 46.5% patients thought that diabetes could be prevented. 71.3% patients did not know the risk factors involved in the development of diabetes. The knowledge concerning the prevention of diabetes complications was partial with only 63.3% of the diabetes taking care of their feet through regular washing. Diabetes is the most common cause of non-traumatic lower limb amputations. Only 57.4% of the patients however knew that the feet are affected in diabetes. Only 64.4% of the subjects know that diabetes affects heart and 26.7 % of the patients did not know that diabetes affects the kidneys. Patients' knowledge regarding the treatment and complications of diabetes showed serious deficiencies more so among women even though most had been diabetic for years. This study recommended to provide knowledge on treatment and complications of diabetes.

Viral N Shah, P K Kamdar, Nishit Shah (2014) A study to assess the knowledge and self-care practices of diabetics in a resettlement colony of Chandigarh. A cross sectional survey was carried out 60 diabetics

aged 20 years and above was identified. Their knowledge and practices regarding diet, genital hygiene, care of foot, wound, complications of diabetes and medications was assessed using a semi structured interview schedule. The results show that 60% opinion that diabetics should consume whatever is cooked in family. 48 diabetics knew that sweets and fatty foods should be avoided but only 18.3 were avoiding them. Genital hygiene was maintained by 51.7% and foot care was done by 63.3% through regular washing. Monitoring blood sugar was poor [46.7%], only 3 knew and were continuing self-testing of urine. Oral anti–diabetic drug compliance rate was 62.9%. None of the patients on insulin injections knew about self-therapy. Knowledge regarding diabetic complications was poor. Therefore, the study was recommended that there is a need of providing knowledge on diabetes.

Dr. K. Akilandeeshwari (2016), A descriptive research design was adapted to conduct the awareness programme on diabetes mellitus. The samples of 50 diabetic patients were selected randomly. Interview method was used to elicit the information. The results show that 10 male patients were having major complications which may be chronic systemic or acute metabolic and also, they do not know when they have to go for follow up. This makes to provide knowledge on complications of diabetes.

Gaurmit Kaur, Ishak Mohhmad, Davinder Kaur (2016), a quasi-experimental study conducted in selected IPDs of Gian Sagar Hospital. Fifty diabetic patients were chosen by purposive sampling technique. Self-reported structured knowledge questionnaire was used to assess the knowledge of the diabetic patients. Study findings revealed that mean pre-test & post-test knowledge score of diabetic patients in experimental group was

18.44 ± 2.501 & 31.12 ± 1.590 respectively with mean difference of 9.80 & also findings were found statistically significant (p<0.05). The findings revealed that the mean post-test knowledge scores of Experimental group & control groups was 31.12 ± 1.590 & 21.32 ±1.952 respectively with Mean difference of 9.80 & also findings were found statistically significant (p<0.05). There was no significant association found between knowledge score & age, habitat, educational status & income (p>0.05). Study findings revealed that Individualized Planned Teaching Programme (IPTP) was effective on knowledge regarding prevention of complications of Diabetes Mellitus among Diabetic patients. There was no association found with knowledge score & selected demographic variables such as age, habitat, educational status and income (p>0.05).

2.3 REVIEW LITERATURE RELATED TO THE DESCRIPTIVE STUDY OF COMPLICATION OF DIABETES MELLITUS.

Mrs. Sumanpreet Kaur, MS. Harmanpreet Kaur (2017) A descriptive study to assess the knowledge regarding diabetes mellitus among the residents of selected rural community, Gurdaspur, Punjab. A non-experimental, quantitative research approach and univariant descriptive research design was used in present study to assess the knowledge regarding diabetes mellitus among selected rural community residents, a self-structural checklist was used to assess the knowledge regarding diabetes mellitus and convenience sampling was used. The study revealed that 100 samples was selected include 90% have average knowledge, 95 have good knowledge and only 1% have poor knowledge. The mean score of good level knowledge was 21.77 with SD ±o.56, the mean score of average knowledge was 16.97 with SD ±0.35 and mean score of poor knowledge was 10 with SD 0. the study concludes that assessment level of the knowledge regarding diabetes mellitus among the residents of community. The result of present study revealed that out of 100 community people, 90% have average knowledge, 9% have good knowledge and 1% having poor knowledge.

Yaa obrinikorang et al (2016), a descriptive study was assessing Knowledge of complications of diabetes mellitus among patients visiting the diabetes clinic at Sampa Government Hospital, Ghana. This questionnaire-based descriptive study recruited a total 630 patients visiting the Diabetes Clinic at the Sampa Government Hospital. Structured questionnaire was used to obtain information such as socio-demographic and knowledge on complications of diabetes. Out of a total of 630 participants, 325 (51.5 %) knew diabetic foot as the most common complication followed by hypertension 223(35.4 %), neuropathy 184 (29.2 %), hypoactive sexual arousal 160(25.4 %), arousal disorder 135(21.5 %), eye diseases 112(17.7 %), heart disease 58(9.2 %), and renal disease 34(5.4 %). Comprehensive assessment of level of knowledge on the complications showed that majority 378(60.0 %) of T2D patients did not have knowledge on diabetes complications, 169(26.9 %) had inadequate knowledge on diabetics complication while 82(13.1 %) had adequate knowledge. The risk factors associated with the level of knowledge of diabetic complications were female gender adjusted odd ratio (AOR) =2.31 (1.56–3.41) married participants AOR = 3.37 (1.44–7.93), widowed AOR = 2.98 (1.10–8.08), basic level of education AOR =0.18 (0.082–0.50), Junior High School (JHS) and above of education level AOR = 0.035(0.017–0.75), 5–9 years of T2D duration AOR = 0.31(0.018–0.57), ≥10 years T2D duration AOR = 0.042 (0.02–0.10) and urban dwellers AOR = 0.36 (0.22–0.68) respectively. Participants knew the individual complication of diabetic mellitus

but lack an in-depth knowledge on the complications. Further expansion of diabetic educative programs like using mass media and involving national curriculum of education can improve self-regulatory awareness of diabetic complications which may reduce the morbidity and mortality of diabetic patients.

MATERIALS & METHODS
RESEARCH APPROACH AND RATIONALE
A non-experimental descriptive design helped the investigator to assess the Knowledge and Attitude among Diabetes Mellitus Patients with A View to Develop A Self-Instructional Module on Prevention of Complication of Diabetes Mellitus in Selected Hospital, Ahmedabad. As total control over the variable under study was not possible completely. Group was randomized. Therefore, a non-experimental research method was used in this study.

RESEARCH DESIGN
Investigator used **quantitative research approach** and selected the non-experimental research design to assess Knowledge and Attitude among Diabetes Mellitus Patients on Prevention of Complication of Diabetes Mellitus. The investigator develops assessed the Knowledge and Attitude among Diabetes Mellitus Patients on Prevention of Complication of Diabetes Mellitus. The investigators developed structure knowledge questionnaires and Likert's scale for assessment of knowledge and attitude Among Diabetes Mellitus Patients on Prevention of Complication of Diabetes Mellitus.

VARIABLE:
Study variable: knowledge and attitude
Demographic variable: in the present study, the demographic variable as age, gender, occupation, education, socio-economic status.

RESEARCH SETTING
Investigator conducted the study in V.S General Hospital, Ahmedabad, and Gujarat. Investigator selected out department patient and in department patient at V.S General Hospital, Ahmedabad.

The criteria and rational for selecting this hospital
The rational for selecting this hospital was familiarity with setting availability of sample and feasibility of conducting the study. It also had facilities for education and research and well equipment and advance technology. This hospital provided availability of large number of patients valuable related to diabetes mellitus and also endocrine department. So, it was easy to collect large number of samples from this hospital.

TARGET POPULATION
In this study the target population consisted of diabetes mellitus patients who were coming for treatment and also admitted in hospital for diabetes mellitus treatment at V.S General Hospital, Ahmedabad, and Gujarat.

STATISTICAL ANALYSIS AND RESULT
Analysis of data collected by Structured Knowledge Questionnaire and Likert scale were as follows:
- Analysis and interpretation of Data collected on Section-I - deals with Personal data of the respondents such as of Age, Gender, Occupation, Education and Socio-Economic status of diabetes mellitus patients in V.S General Hospital, Ahmedabad.
- Analysis and interpretation of Data collected on Section—II - deals with knowledge mean score and Standard Deviation score.

- Analysis and interpretation of Data collected on Section—III - deals with attitude score and percentages.
- The nature of data gives Mean and Standard Deviation of the obtained knowledge of the samples of diabetes mellitus patients.

As the investigator has selected descriptive study design it requires testing of hypothesis. For testing of hypothesis Investigator has formulated null hypothesis.

- **H1**-Their will be significant association between the selected demographic variable and the mean knowledge and attitude score of diabetes mellitus patient at 0.05 level of significance.

- **H01**-Their will not be significant association between the selected demographic variable and the mean knowledge and attitude score of diabetes mellitus patient at 0.05 level of significance.

## ANALYSIS AND INTERPRETATION OF DATA COLLECTED ON SECTION I

This data was collected by using structured knowledge questionnaire and deals with the characteristics of samples in terms of their Age, Gender, Occupation, Education and Socio-Economic status of diabetes mellitus patients.

The analysis of this section was done using frequency and percentage.

TABLE-4.1.1 Frequency and Percentage Distribution of Samples by their Characteristics: Age, Gender, Occupation, Education and Socio-Economic status of diabetes mellitus patients [N=100]

Sr. No	Demographic variables	FREQUENCY	PERCENTAGE
1	**Age**		
	a. 20 years or above	8	8%
	b. 21-30 years	17	17%
	c. 31-40 years	38	38%
	d. 41 years or above	37	37%
	Total	100	100%
2	**Gender**		
	a. male	56	56%
	b. female	44	44%
	Total	100	100%
3	**Education qualification**		
	a. illiterate	27	27%
	b. primary school	44	44%
	c. secondary school	20	20%
	d. graduate or above	9	9%
	Total	100	100%
4	**Occupation**		
	a. laborer	28	28%
	b. govt. employee	8	8%
	c. private employee	33	33%
	d.other	31	31%
	Total	100	100%
5	**Family income**		
	a.10,000 or below	31	31%
	b. 10,000-20,000 Rs	44	44%
	c.20,000-30,000 Rs	16	16%
	d. 30,000 or above	9	9%
	Total	100	100%

Figure 3: pie chart showing percentage wise distribution of age of diabetes mellitus patient
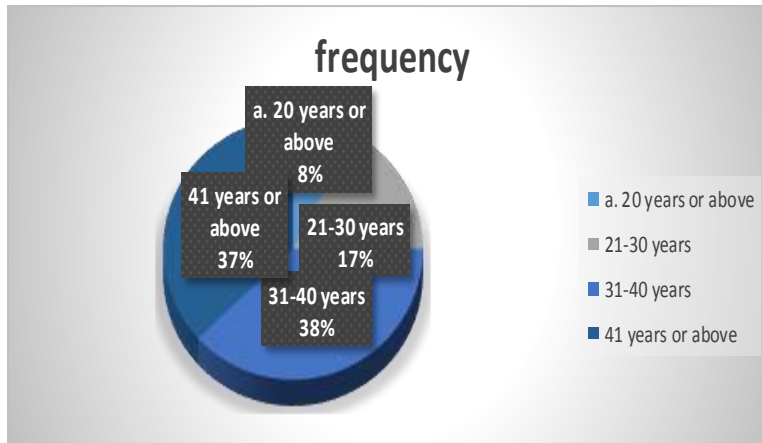
The data presented in Table 4.1.1 denotes that out of 100 samples 38(38%) were in the age group of up to 31 years to 40 years and 8 (8%) was in the age group of 20 years or below years. As regards to gender 56(56%) are male and 44(44%) are female. In 100 sample 44(44%) sample education qualification was primary school and 9(9%) graduation or above. Regarding occupation status 33(33%) sample are private employees and 8(8%) are government employee. In family income include 44(44%) sample income was 10,000-20,000 Rs. And 9(9%) sample income was 30,000 or above.

4.1 ANALYSIS AND INTERPRETATION OF DATA COLLECTED ON SECTION II

This data was also collected using the structured knowledge questionnaire and deals with the four-content area- introduction, risk factor, sign and symptoms and prevention of complication of diabetes mellitus. The analysis of this section was done by the knowledge mean score and Standard deviation.

TABLE-4.2.1 Area-Wise Mean and Mean Percentage, Knowledge Scores of diabetes mellitus patient on prevention of complication of diabetes mellitus [N=100]

Sr. No	Content area	Max. Score	Knowledge score	
			Mean Score	Percentage %
1	Introduction	8	5.24	65.5%
2	Risk factor	2	1.60	80%
3	Sign and symptoms	2	1.26	63%
4	Prevention of complication of diabetes mellitus	28	18.69	66.75%
5	Total	40	26.88	66.97%

From the table 4.2.1 it can be seen that the knowledge area was divided into 4 sub areas i.e. introduction, risk factor, sign and symptoms and prevention of complication of diabetes mellitus. The mean score of area related to introduction was 5.24 (65.5%). The mean score of area related to risk factor was 1.60 (80%). The mean score of area related to sign and symptoms was 1.26(63%) and. The mean score of area related to prevention of complication of diabetes mellitus was 18.69(66.75%).
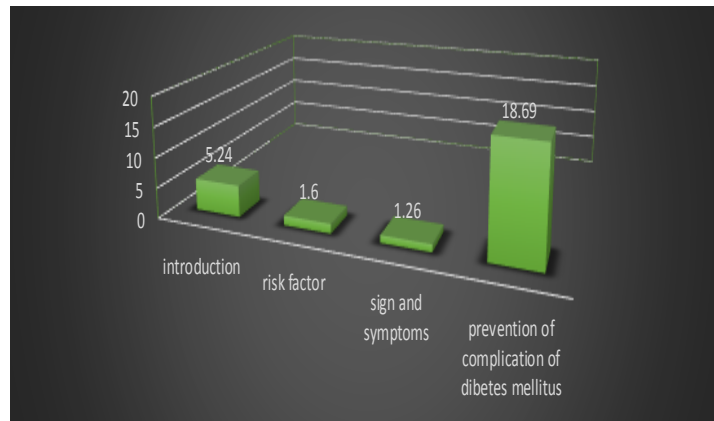
Figure 4: bar graph showing mean score wise distribution of content area.

TABLE 4.2.2Mean and Standard Deviations of Knowledge Scores of diabetes mellitus patient on prevention of complication of diabetes mellitus N=100

Knowledge score	Mean	Median	S.D.
	26.79	27	3.52

The data presented in the above table 4.2.2 shows the knowledge scores obtained by the samples on diabetes mallitus patients. The mean knowledge scores 26.79. The findings also showed that the Standard deviation of knowledge score was 3.52.

TABLE 4.2.3 Percentage distribution of knowledge on prevention of complication of diabetes mellitus of diabetes mellitus patients. N=100

Sr. No	Score	Interpretation	Frequency	Percentage
1	1-13	Poor	0	0%
2	14-27	Average	54	54%
3	28-40	Good	46	46%

Table 4.2.3 shows the frequency and percentage of the sample who score poor, average, good results in the knowledge of prevention of complication of diabetes mellitus on diabetes mellitus patients.

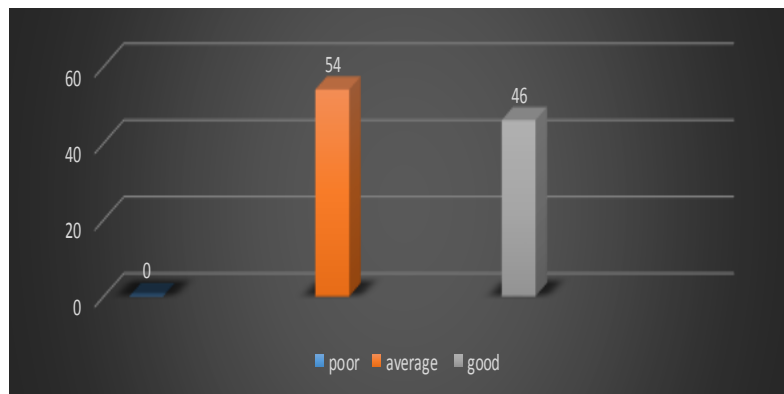In score poor knowledge was 0%, average was 64% and good knowledge was 36%.

Figure 5: bar graph showing frequency wise distribution of poor, average and good categories.

3 ANALYSIS AND INTERPRETATION OF DATA COLLECTED ON SECTION III
Analysis of data collected on Likert scale is as follow:

TABLE 4.3.1 Frequency and percentage wise distribution of sample based on attitude score [N=100]

Sr.no	Attitude	Classification	Frequency	Percentage
1	Negative	20-60	44	44%

2	Positive	61-100	56	56%
Total			100	100%

Data in table 4.3.1 reveals that showing negative attitude was 53(53%) and positive attitude was 47(7%) regarding prevention of complication of diabetes mellitus.
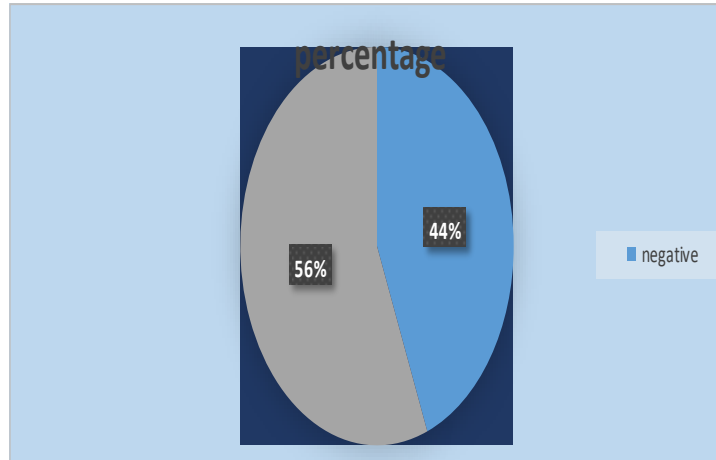

Figure 6: pie chart showing percentage wise distribution of attitude score

4.4 ANALYSIS AND INTERPRETATION FOR ASSOCIATION OF SEECTED DEMOGRAPHIC DATA WITH KNOWLEDGE OF SAMPLES

TABLE 4.4.1 Association of age with knowledge score [N=100]

Age	Knowledge			Total	Calculated value of chi-square	Tabulated value of chi-square
	poor	Average	Good			
20 years or below	0	7	1	8	31.71	12.59
21-30 years	0	15	2	17		
31-40 years	0	25	13	38		
41 years or above	0	7	30	37		
Total	0	54	46	100		

At 5% level of significance DF= 12

Thus, above table indicate that calculated value of chi-square 31.71 was more than the tabulated value of the chi-square 12.59, so it was significantly positive significant at 5% level of significance. Hence there is association between age and knowledge score of diabetes mellitus patients.

4.5 ANALYSIS AND INTERPRETATION FOR ASSOSIATION OF SELECTED DEMOGRAPHIC DATA WITH ATTITUDE SCORE OF THE SAMPLES

TABLE 4.5.1 Association of gender of sample with attitude score N=100

Gender	Attitude		Total	Calculated value of chi-square	Tabulated value of chi-square
	Positive	Negative			
Male	24	32	56	8.89	3.84
Female	32	12	44		
Total	56	44	100		

At 5% level of significance DF= 1

Thus, above table indicate that calculated value of chi-square 8.89 was more than the tabulated value of the chi-square 3.84, so it was significantly at 5% level of significance. Hence there is association between gender and attitude score of diabetes mellitus patient

DISCUSSION

This study addressed to assess the knowledge and attitude among diabetes mellitus patients with a view to develop a self-instructional module on prevention of complication of diabetes mellitus in V.S General hospital, Ahmedabad. The investigator used structured knowledge questionnaires and Likert's scale for assessment of the knowledge and attitude among diabetes mellitus patients. In this study 100 sample participated. In relation to the finding of the study it was revealed that out of 100 sample 0 sample having poor knowledge was 0%, 54 sample having average knowledge was 64% and 46 sample having good knowledge was 36%. And attitude score include out of 100 sample negative attitude was 53(53%) and positive attitude was 47(7%) regarding prevention of complication of diabetes mellitus. In this study also knowledge is associated with the age and attitude is associated with the gender. After that result of the study investigator develop the self-instructional module associated with the prevention on complication of diabetes mellitus.

One similar study Mr. hazaratali panari, Mrs. Vegunarani m. A study to assess the knowledge and attitude on complications of diabetes mellitus among the diabetic patients in selected hospitals at Bijapur, Karnataka, with a view to develop self-instructional module. The study concludes on the basis of the findings the following conclusions were made. It was observed that the maximum number of subjects 26(43.3%) were in the age group of 40-49 years and 26(43.3%) were in the age group 50-59years. 37(61.6%) were males., 19(31.60%) were in

primary education. 40(66.6%) were Hindu., 56(93.3%) were married. 56(93.3%) were married,44(73.3%) was from urban area, 34(56.66%) were in 1-3-year duration of illness, 25(41.6%) frequency of health check-up was twice a year,32(53.3%) has the family history of diabetes mellitus. 32(53.3%) have the family history of diabetes mellitus. 30(50%) source of health information was friends and neighbours.

The findings of the study revealed that there was a significant association between knowledge on complications of diabetes mellitus with selected sociodemographic variables such as education and area of residence were significant at 0.05 levels. Whereas variables such as age, gender, religion, marital status, duration of illness, frequency of health checkup, family history of diabetes mellitus and source of health information were found to be not significant at 0.05 level. Thus, it can be interpreted that there was a significant association between knowledge on complications of diabetes mellitus. The findings of the study revealed that there was a significant association between attitude on complications of diabetes mellitus with demographic variables such as education, marital status and family history of diabetes mellitus was significant at 0.05 level. Whereas variables such as age, gender, religion, area of resident, duration of illness, frequency of health checkup and source of health information were found to be not significant at 0.05 levels. Thus, it can be interpreted that there is a significant association between attitudes of diabetic patient with selected demographic variables.

CONCLUSION

The finding conclusion can be drawn from the study finding:
On the basis of the finding the following conclusion were made. It was observed that maximum number of the subject knowledge

deficit in all Areas of the prevention of complication of diabetes mellitus but more in complication of the diabetes mellitus. In attitude area subject having more positive attitude related the prevention of complication of diabetes mellitus. The finding of the study revealed that was a significant association between knowledge on prevention of complication of diabetes mellitus with selected socio demographic variable such as age of the subject were significant at 0.05 levels. Where's variables such as gender, education, occupation of the patient was found to be not significant at 0.05 level. Thus, it can be interpreted that there was a significant association between knowledge on prevention of complication of diabetes mellitus.

The finding of the study revealed that was a significant association between attitudes on prevention on complication on diabetes mellitus with demographic variable such as the gender were significant at 0.05 level. Where other variable was not significant at 0.05 levels. Thus, it can be interpreted that there is a significant association between attitudes of prevention on complication of diabetes mellitus.

Declaration by Authors
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