International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2018): 7.426

A Study to Assess the Knowledge and Practice of Food, Exercise and Insulin Therapy in Prevention of Complications of Diabetes Mellitus among Diabetic Patients at Selected Hospital at Gulbarga - With a View to Develop Informational Booklet

Robin Abraham

Assistant Professor Welfare Institute of nursing and midwifery Bharuch, G. Stella Gracy Ph.D Student, Maharaj Vinayak Global University, Jaipur

Short heading- Knowledge and practice of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetic patients

Abstract: ***Diabetes Mellitus is a disease which is prevalent worldwide. Diabetes is a chronic disease which is insidious in onset and can be controlled by proper diet, drugs, foot care and exercise. Many times diabetes is diagnosed at the stage of developing complications. Explorative survey approach is used in this present study. Random sampling technique was used to obtain a sample of 60 diabetes mellitus clients. A structured questionnaire was prepared to collect the data. The data was collected by using interview method and data was interpreted in terms of objectives and research hypothesis using descriptive and inferential statistics. The result shows that, there was an inadequate knowledge of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetic clients. There was a significant association between knowledge scores of diabetic patients with their age, gender, education, occupation and source of information regarding diabetes, but there was no association between the level of knowledge score of diabetic patients and other demographic variables those were religion, marital status, diet and family history. There was a poor practice of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetic clients. There was a significant association between knowledge scores of diabetic patients with their age, gender, religion, education, but there was no association between the level of knowledge score of diabetic patients and other demographic variables those were marital status, diet, occupation, family history and source of information. Clients with diabetes mellitus had positive relationship between knowledge and practice regarding food, exercise and insulin therapy in prevention of complication of diabetes mellitus.***

1. Introduction

Diabetes Mellitus is a group of metabolic disease in which the person has high blood glucose, either because insulin production is inadequate or because the body's cells do not respond properly to insulin or both. Complications of Diabetes are divided in to two micro vascular complications and macro vascular complications. The macro vascular complications are transient ischemic attack, stroke, angina, myocardial infarction, cardiac failure and peripheral vascular disease. The micro vascular disease are diabetic retinopathy, microalbuminuria, macroalbuminuria, end Stage of renal Disease, Erectile dysfunction, Autonomic neuropathy, peripheral neuropathy, osteomyelitis and amputation. Macro vascular complication is the major cause of morbidity and mortality in diabetes. According to World Health Organization, at least 180 million people are suffering from diabetes worldwide and the number is expected to double by 2030. At present India is considered as the diabetic capital of the world.

Diabetic and development of complication can be controlled by diet, exercise, and proper insulin therapy. Diabetic diets contribute positively to the maintenance of blood glucose within normal range and minimize the complication. Regular exercise helps to prevent diabetes and its complications. Insulin therapy also helps to better glycemic control and beneficial to patient to prevent complications of diabetes. The complications of diabetes, mainly occurs due to the lack of knowledge regarding management of diabetes. The proper knowledge about diabetes and its management help to prevent complication and promoting a sense of health and wellbeing. It's an urgent need to create awareness among the people about diabetes. Diabetic subjects also require better education in many aspects.

1.1 Objectives of the Study

1) To assess the knowledge and practice of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetic patients.
2) To assess the relationship between knowledge and practice of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetic patients.
3) To find association between knowledge and practice of food, exercise and insulin therapy in prevention of the complications of diabetes mellitus among diabetic patients and with their selected demographic variables.
4) Develop and distribute the informational booklet regarding of food, exercise and insulin therapy in prevention of complication of Diabetes Mellitus for diabetic patients.

2. Materials and Methods

Research approach and design:
Explorative survey approach is used

Setting of the Study:
The study was conducted at Basaveshwar Teaching & General Hospital, Gulbarga.

Population:
Diabetes Mellitus patients who belong to the medical wards and OPD section of Basaveshwar Teaching & General Hospital, Gulbarga.

Sample and Sample technique:
The Systemic random sampling technique was used to obtain a sample of 60 diabetes mellitus clients.

2.1 Description of the Tool

Part I : Demographic Variables It included the items for obtaining data regarding Age, Gender, Religion, Marital Status, Diet, Educational status, Occupation, Family history of Diabetes, Source of information regarding diabetes.

Part II : Structured Knowledge and practice Questionnaire. It was developed to assess the knowledge and practice of samples regarding the knowledge and practice of food exercise and insulin therapy in prevention of complications of diabetes mellitus.

2.3 Data Analysis

Both descriptive and inferential statistics would be used for analysis of data. Frequency distribution and percentage would be used for describe the sample characteristics. Knowledge and practice scores would be analyzed using mean, standard deviation and range. Karl Pearson co-relation coefficient is used to determine the relationship between knowledge and practice. Chi-square would be used to determine association between the knowledge and practice among diabetes mellitus patients with their selected demographical variables.

3. Results

Section-A: Distribution of Demographic variable.

Table 1:

Demographic variables	*Frequency*	*Percentage*
Age		
Below 40yrs	3	5%
41-50yrs	9	15%
51-60yrs	21	35%
61 & Above	27	45%
Gender		
Male	36	60%
Female	24	40%
Religion		
Hindu	33	55%
Muslim	24	40%
Christian	3	5%
Others	0	0%
Marital status		
Single	0	0%
Married	54	90%
Widow/widower	6	10%
Divorce	0	0%
Diet		
Vegetarian	6	10%
Mixed	54	90%
Education		
Non formal	0	0%
Primary	25	41.66%
Secondary	21	35%
Graduate	9	15%
Post graduate and above	5	8.33%
Occupation		
Self employment	9	15%
Govt. employee	13	21.66%
Private	15	25%
Daily wages	6	10%
Un employed	17	28.33%
Family history of diabetes		
Present	39	65%
Absent	21	35%
Source of information regarding DM		
Magazine & Newspaper	13	21.66%
Radio & TV	8	13.33%
Family & Friends	24	40%
Health personnel	15	25%

The result reveals that 27(45%) of respondents were in the age group of above 61 years, In relation to gender, 36(60%) of respondents were found to be males as compared to females of 24(40%) in the study group. Regarding type of Religion, 33(55%) of respondents were Hindu Regarding Marital status, 54(90%) of respondents were married and 6(10%) are widow widower**.** Regarding diet 6(10%) are pure vegetarian and 54(90%) with mixed diet. With respect to Educational status, 27(45%) had primary education, 21(35%) of respondents had completed secondary education. Related to Occupation 15(25%) of the clients were private worker, 17(28.33%) clients were unemployed. Regarding family history of diabetes 39(65%) had a family history was as 21(35%) do not have the any history of diabetes. It's clear from the analysis that the highest 24(40%) each of the patients got the information about diabetes from family and friends.

Section B: Assessment of Knowledge Scores Regarding Food, Exercise and Insulin Therapy in Prevention of Complications of Diabetes Mellitus

Table 2: Level of knowledge Score among diabetes mellitus Clients regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus.

Level of Knowledge	Score Range	Frequency (F)	Percentage (%)
Adequate	14-17	03	05%
Moderate	09-13	21	35%
Inadequate	00-8	36	60%
Total		**60**	**100%**

Assessment of level of knowledge of diabetes mellitus clients regarding the food, exercise and insulin therapy in prevention of complications of diabetes mellitus reveals that, majority 60% of the clients had inadequate knowledge, 35%

of the clients had moderate knowledge and 5% of the client had adequate knowledge.

Table 3: Mean knowledge score of DM clients regarding food, exercise, and insulin therapy in prevention of complications of DM

Knowledge	Statement	Maximum	Knowledge Respondent			Range
			Mean	Mean%	SD	
knowledge regarding the food, exercise and insulin therapy in prevention of complications of DM	17	17	8.38	49.31%	1.46	12

Table 3, Shows the mean, standard deviation and range of knowledge regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients. The obtained knowledge scores was Mean=8.38, SD+1.46 and Range =12. It was inferred that clients with diabetes mellitus had inadequate knowledge regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus.

Section C: Assessment of practice scores regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus

Table 4: Level of Practice Score among diabetes mellitus Clients regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus

Level of Practice	Score Range	Frequency (f)	Percentage (%)
Good	14-17	2	3.30%
Average	Sep-13	24	40%
Poor	00-08	34	56.66%
Total		60	100%

Assessment of level of Practice of diabetes mellitus clients regarding the food, exercise and insulin therapy in prevention of complications of diabetes mellitus reveals that, majority 56.66% of the clients had poor practice, 40% of the clients had average and 3.3% of the client had good practice.

Table 5: Mean practice score of DM clients regarding food, exercise, and insulin therapy in prevention of complication of DM

Practice	Statement	Maximum	Knowledge Respondent			Range
			Mean	Mean%	SD	
Practice regarding the food, exercise and insulin therapy in prevention of complications of DM	17	17	8.25	48.52%	1.43	11

Table 5, shows the mean, standard deviation and range of practice regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients. The obtained practice scores was Mean=8.25, SD+1.43 and Range =11. It was inferred that clients with diabetes mellitus had poor practice regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus.

Section D: Relationship between knowledge and Practice Regarding Food, Exercise and Insulin Therapy in Prevention of Complications of Diabetes Mellitus

Table 6

Area	Maximum score	Mean	Mean%	SD	Range	Correlation coefficient (r)	Result
Knowledge	17	8.38	49.31%	1.46	12	0.79	Positive correlation
Practice	17	8.25	48.52%	1.43	11		

Table-6 shows the mean, SD, mean % and range and correlation coefficient of knowledge and practice regarding diabetes mellitus among diabetes clients. The obtained knowledge score was Mean=8.38 (SD=1.46), mean% was50.29% and the range 12. The obtained practice score was Mean=8.25 (SD=1.43), mean% was 48.52% and the range was 11. Correlation between knowledge and practice was 'r'=0.791. Therefore the true hypothesis H1 is accepted. It was inferred that clients with diabetes mellitus had positive relationship between knowledge and practice regarding food, exercise and insulin therapy in prevention of complication of diabetes mellitus.

Section E: Association between knowledge regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus and selected demographic variables

Table 7: Chi-square test showing the association between knowledge level and demographic variables

Variables	*Above median*	*Below median*	*Table Value*	*Chi-square value*	*Result*
Age					
Below 40yrs	3	0	7.815	16.8	S
41-50yrs	8	1			
51-60yrs	6	15			
61 & Above	7	20			
Gender					
Male	10	26	3.841	5.58	S
Female	14	10			
Religion					
Hindu	14	19	5.991	5.75	NS
Muslim	7	17			
Christian	3	0			
Marital status					
Single	0	0	7.815	0.12	NS
Married	22	32			
Widow/widower	2	4			
Divorce	0	0			
Diet					

Vegetarian	1	5	3.841	1.51	NS
Mixed	23	31			
Education					
Non formal	0	0	9.488	24.01	S
Primary	2	23			
Secondary	10	11			
Graduate	7	2			
Post graduate and above	5	0			
Occupation					
Self employment	1	8	9.488	10.65	S
Govt. employee	7	6			
Private	9	6			
Daily wages	0	6			
Un employed	7	10			
Family history of diabetes					
Present	19	20	3.841	3.51	NS
Absent	5	16			
Source of information					
Magazine and News paper	10	3	7.815	14.76	S
Radio and Television	5	3			
Family members & friends	4	20			
Health personnel	5	10			

S= Significant, NS= Non Significant

There was a significant association between knowledge scores of clients with their age, gender, education, occupation, and source of information regarding diabetes, but there was no association between the level of knowledge score of clients with other demographic variables like religion, marital status, diet and family history. Therefore the true hypothesis H2 is partially accepted.

Section E: Association between practice regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus and selected demographic variables.

Table 8: Chi-square test showing the association between practice level and demographic variables

Variables	Above median	Below median	Table value	Chi-square value	Result
Age					
Below 40yrs	3	0	7.815	7.97	S
41-50yrs	6	3			
51-60yrs	9	12			
61 & Above	8	19			
Gender					
Male	12	24	3.841	3.65	NS
Female	14	10			
Religion					
Hindu	17	16	5.991	8.09	S
Muslim	6	18			
Christian	3	0			
Marital status					
Single	0	0	7.815	0.26	NS
Married	24	30			
Widow/widower	2	4			
Divorce	0	0			
Diet					
Vegetarian	2	4	3.841	0.26	NS
Mixed	24	30			
Education					
Non formal	0	0	9.488	18.65	S
Primary	4	21			
Secondary	10	11			
Graduate	7	2			
Post graduate and above	5	0			
Occupation					
Self employment	3	6	9.488	1.23	NS
Govt. employee	7	6			
Private	7	8			
Daily wages	2	4			
Un employed	7	10			
Family history of diabetes					
Present	19	20	3.841	1.3	NS
Absent	7	14			
Source of information					
Magazine and News paper	10	3	7.815	14.76	S
Radio and Television	5	3			
Family members & friends	4	20			
Health personnel	5	10			

S= Significant, NS= Non Significant

There was a significant association between practice scores of clients with their age, gender, religion and education but there was no association between the level of practice score of clients with other demographic variables like marital status, diet, occupation, family history of diabetes, and source of information regarding diabetes. Therefore the true hypothesis H3 is partially accepted.

4. Discussion

1) Findings related to demographic variables

Majorities (45%) of clients were in the age group of 61years and above, majorities(60%) were males, majorities (55%) were Hindus, majorities (90%) were married, Maximum (90%) of clients were having a mixed diet, Maximum (41.66%) of the clients are primary educated, maximum (28%) were unemployed, Majorities (65%) were having a family history of Diabetes Mellitus, majorities (40%) of clients were got information regarding diabetes from family members and friends.

2) Findings related to knowledge regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients

Clients with diabetes mellitus reveal that, majority 60% of the clients had inadequate knowledge, 35% of the clients had moderate knowledge and 5% of the client had adequate knowledge. Other studies[26, 27, 32] supported the present study result revealed that most of samples were having (60%) inadequate knowledge.

3) Findings related to practice regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients

Clients with diabetes mellitus reveal that, majority 56.66% of the clients had poor practice, 40% of the clients had average and 3.3% of the client had good practice. Other

studies[38, 39, 40] supported the present study result revealed that most of samples were having (56.66%) poor practice.

4) Finding related to relationship between knowledge and practice

The obtained knowledge score was Mean=8.38 (SD=1.46), mean% was 49.31% and the range 12. The obtained practice score was Mean=8.25 (SD=1.43), mean% was 48.52% and the range was 11. Correlation between knowledge and practice was 'r'=0.791. It was inferred that clients with diabetes mellitus had positive relationship between knowledge and practice regarding food, exercise and insulin therapy in prevention of complications of diabetes mellitus.

5) Finding related to association between knowledge and demographic variables

There was a significant association found between knowledge of food, exercise, and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients with their age, gender, education, occupation, and source of information regarding diabetes. There was no significant association found between knowledge of diabetes clients with the religion, marital status, diet, and family history.

6) Finding related to association between practice and demographic variables

There was a significant association found between knowledge of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients with their age, gender, religion and education. There was no significant association found between knowledge of food, exercise and insulin therapy in prevention of complications of diabetes mellitus among diabetes mellitus clients with the marital status, diet, occupation, family history of diabetes, and source of information regarding diabetes.

5. Conclusion

This study concluded that the majority of the clients 60% had inadequate knowledge and the majority of the clients 56.66% had poor practice. The proper knowledge about diabetes and its management help to prevent complication and promoting a sense of health and wellbeing. It's an urgent need to create awareness among the people about diabetes. Diabetic subjects also require better education in many aspects.

References

[1] Clancy J, Mc Vlear J A 'Physiology and Anatomy' Edward Arnold Bandon, Page No 20.
[2] Joyce. M. Black and Jane Hokanson, "Medical Surgical Nursing",6th edition 2001,volume2, Page no. 1375-1438.
[3] Enjoying-life-with-Diabetes.Com. History of Diabetes Timeline of Diabetes History; c2008-10 available from : http:// www. Enjoying-life-with-diabetes.com/history-of- diabeteshtml.
[4] World Diabetes Day 2009. Medindia [online] 2009 [cited 2009 Nov 13]; Available from:URL:http://www.Google.com.
[5] Bruner and Siddharth, "Text Book of medical and Surgical Nursing" ,11th edition 2008, volume2 , Page No:1375-1438.
[6] Katherine L Bate and George Jerums,"Medical Journal Of Australia"2003, 179(9):PP 498-503.
[7] Wild S and Roglic G, Public Health Science, University of Edinburgh, Edinburge, Scotland. Sarah.wild@ed.ac.uk.
[8] Dr. Swaminathan .M, "Hand book of food and nutrition", 5th edition 2007, Bangalore printing and publishing co.ltd, Page no:1,15,92.
[9] Park K. ' Preventive and Social Medicine' 19th Edition. M/s Banarsidas Bhannot, Publishers Page No 328.
[10] Gulabani M, Isaac R, John M. ' Knowledge of Diabetes, its treatment and Complications' The Hindu online edition of India. Indian National News 2008 November; Available from: http//www.ijcm.org.in.
[11] Basawantappa. BT, "Nursing Research", 2010,Jaypee Publication, Page no:1,15,98.
[12] Ramachandran A and Snehalatha C, "Diabetologia" 2001 September, volume 44, issue 9, PP: 1094-1101
[13] Manjunath M and Madhusudhanan, "International Journal Of Biomedical and Advance Research" 2011, volume 2, issue 9, Page no:309-316.