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Research Article

A PRE EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON LEVEL OF KNOWLEDGE REGARDING PREVENTION OF SELECTED COMPLICATIONS AMONG THE DIABETES MELLITUS PATIENTS

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ABSTRACT

A pre experimental study to assess the effectiveness of structured teaching program regarding level of knowledge on prevention of selected complications among the patients with Diabetes mellitus. The 60 study samples selected by non probability sampling technique. The data collected with the help of demographic data, clinical variables and self structured questionnaire regarding prevention of complications. The study results shows that after the STP the level of knowledge improved as 75% achieved adequate knowledge and 18% had moderate knowledge. The effectiveness of STP is proved effective at $p < 0.05$ level. The study conclude that the health care system should improve the knowledge of patients by conducting various education methods.

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INTRODUCTION

Diabetes mellitus is a global increase health problem. According to WHO report globally the number of increase individual projected to rise 366 million in the year 2030. India currently has the highest number of individuals with diabetic mellitus and it is projected to increase 79.4 million in the year 2030. The number of increase in the diabetes mellitus in the developing countries due to industrialization and urbanization. Because of these there is a tremendous change in life style of the individual. Chronic non-communicable diseases has many co-morbidities, in that diabetes mellitus is associated with the highest co-morbidities and complications. This affects all socio-economic background individuals. Diabetes mellitus having high prevalence and awareness, even then the knowledge regarding prevention of complications is necessary to reduce the burden of disease on health care and its economic implications.

An individual diagnosed as Diabetes Mellitus and if not properly controlled it may lead to lifelong complications associated with high in morbidities and mortalities. Due to the poorly controlled DM the complications can occur are a damage to eyes lead to blindness, kidneys (leading to kidney failure,) nerves (foot disorder, impotence), increase risk for macro vascular disease (heart disease, stroke, and poor blood

supply to limbs). These complications are irreversible and that need well equipped management to treat these complications with the qualified personnel. However, to manage this crisis with the qualified personnel and cost effective manner, the patient education becomes a central component in preventing the complications. The improving the knowledge on prevention of complications of diabetes mellitus among the patients with diabetes mellitus is the first step in preventing the complications and control the diabetes mellitus.

In this study the structured teaching program focuses on improving the knowledge regarding diabetes mellitus and the prevention of complications, which will improve the quality of life of the patients.

Aims

This study aimed to improve the level of knowledge on prevention of complications among diabetes mellitus patients.

Objectives

To assess the pre-test level of knowledge regarding prevention of complications of diabetes mellitus among diabetes mellitus patients to assess the effectiveness of structured teaching program on level of knowledge regarding prevention of complications of diabetes mellitus among diabetes mellitus patients.

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To find out the association between the post test level of knowledge and their selected demographic variables among diabetes mellitus patients

MATERIALS AND METHODS

1. Setting and participants: This research is conducted at General Hospital, Haryana. The participants in this study were 60 patients diagnosed as diabetes mellitus without complications of diabetic retinopathy and diabetic foot who were admitted or attended OPD.
2. Tools and Techniques: In this study the tools used were demographic variable, self administered questionnaire to assess the level of knowledge on diabetes mellitus and the prevention of selected complications as diabetics retinopathy and diabetic foot, structured teaching programme.
3. Description of Intervention: There are 27 items to assess the level of knowledge regarding definition, etiology, risk factors, types, and complications of diabetes mellitus, prevention of complications selected with retinopathy, foot ulcer and diabetic diet. The adequate knowledge -76-100%, moderate knowledge 51-75%, and inadequate knowledge 0-50%
4. Ethical Considerations: The investigator took written consent from the patients by explaining the purpose of the information and the confidentiality mentioned and it will be used for the purpose of research.

Table 1 Frequency and percentage distribution of demographic variables

N=60

Demographic variable	Frequency	Percentage
Age		
30-35	7	12
35-40	14	23
40-45	16	27
45-50	23	38
Sex		
Male	41	68
Female	19	32
Education		
Primary	11	18
Secondary	23	39
Higher secondary graduate	11	18
	15	25
Monthly Income		
Less than 3000	10	17
3001-6000	11	18
6001-9000	15	25
More than 9001	24	40
Religion		
Hindu	56	93
Muslim	3	5
Sikh	1	2
Place of resident		
Rural	8	13
Urban	52	87
Year of having DM		
Since 1 year	4	7
Since 2 years	29	48
More than 3 years	11	18
More than 4 years	16	27
Family history of DM		
Yes	20	33
No	40	67

5. Statistical Methods: the descriptive statistical analysis method such as mean, standard deviations and inferential statistics.

RESULTS

The analyzed data has been organized in the following manner.

1. Frequency and percentage distribution of demographic variables among patients with diabetes mellitus patients.
2. Frequency and percentage distribution according to their pre test and post test level of knowledge
3. Effectiveness of structured teaching programme regarding prevention of selected complications of diabetes mellitus.
4. Association between the post test level of knowledge and selected demographic variables.

Table 2 Frequency and percentage according to level of knowledge

N =60

Level of knowledge	Pre test		Post test	
	f	p	f	p
Inadequate	33	55	4	7
Moderate	20	33	11	18
Adequate	7	12	45	75

Table 3 Effectiveness of structured teaching program on prevention of complications on diabetes mellitus

Group	mean	SD	"t"
Pre test	12.93	5.01	
Post test	23.52	4.43	14.96

Table 4 Association between level of knowledge after structure teaching programme and selected demographic variables of patients with diabetes mellitus

Demographic variables post test level of knowledge
Inadequate moderate adequate

Age	F	P	F	P	F	P		
30-35 Year	2	3	1	2	4	7		
35-40 year	2	3	1	2	4	7	37.38*	
40-45 year	1	2	2	3	11	18		
45-50 year	-	-	4	7	19	32		
			Sex					
Male	1	2	4	7	36	60	11.56*	
Female	3	6	7	12	9	15		
			Education					
Primary	1	2	6	10	4	7		
Secondary	1	2	3	5	19	32		
High secondary	1	2	2	3	8	13		
Post Graduate	1	2	-	-	-	-		
Graduate	1	2	-	-	-	-		
			Occupation					
Agriculture	2	33	8	13	14	23		
Business	-	-	2	3	13	22	5.76	
Government Service	1	2	1	2	11	18		
Private Service	1	2	-	-	-	-		
			Monthly income					
Rs. 3000/-	1	2	2	3	7	12		
Rs. 3001- 6000	1	2	4	7	6	10	4.87	
Rs. 6001-9000	1	2	4	7	6	10		
>Rs. 10,000/	1	2	2	3	21	35		
			Religion					
Hindu	4	7	11	18	41	68		
Sikh	-	-	-	-	3	5	1.93*	
Muslim	-	-	-	-	1	2		

		Place of residence					
Rural	-	-	4	7	4	7	
Urban	4	7	7	12	41	68	
		Year of having diabetes Mellitus					
Since 1 year	2	3	1	2	1	2	
Since 2 year	1	2	3	5	25	42	18.87%*
Since 3 year	1	2	4	7	6	10	
Since 4 year	-	-	3	5	13	22	
More 4 year	-	-	3	5	13	22	
		Family history					
Yes	-	-	1	2	19	32	7.02*
No	4	7	10	17	26	43	

p 0.05

it can be identified from above table was significant association between pre test level of knowledge and their demographic variable such as age, sex, education, place of resident, year of having diabetes mellitus and family history are significant P 0.05. In occupation, monthly income and religion study was not significant P 0.05

DISCUSSION

Diabetes mellitus is a group of disease characterized by high level of glucose in blood resulting from direct in insulin production, insulin action, or both. Insulin is a harmon produced by the pancreases when eaten, foods are converted to a type of sugar called glucose that enter the blood steam. Insulin I needed to move glucose into the body cells when it is used for energy and excessive are stored in the liver and fast cells insufficient amount of working insulin caused blood sugar level to rise and large amount of glucose are excreted in the urine consistently high level of glucose in the blood stream, damage the nerve and blood vessels can lead to heart disease, stock, high blood pressure re, kidney disease, amputations and dental disease.

Increase in the prevalence of type and diabetes of 30-60% will occur in many asian pacific countries by 2025 driven by urbanization, sedentary habits and energy rich diets. Obesity insulin resistance, metabolic syndrome and diabetes are classified interrelated.

The study statement was “a pre-experimental study to assess the effectiveness of structured teaching program on level of knowledge regarding prevention of selected complications among the patient with diabetes mellitus in general hospital.

Objective of this were

To assess the pretest level of knowledge regarding prevention of complication of diabetes among patients with diabetes mellitus

To assess the effectiveness of structured teaching program on level of knowledge regarding prevention of complication of diabetes mellitus among patient with diabetes mellitus.

To find out the association between the post test level of knowledge and their selected demographic variables patient with diabetes mellitus

The study was carried out on participants diagnosed with diabetes mellitus selected from general hospital to assess the effectiveness of structure teaching program on prevention of selected complications of diabetes mellitus.

A self structured questionnaire was used to collect the data. A pre experimental one group pretest post-test design was used to evaluate the knowledge of 60 samples (diabetes clients) on prevention of diabetes retinopathy and diabetes foot using purposive sampling technique. The pre-test was followed by implementation of structured teaching program and post-test was conducted after 7 days using same self structured questionnaire to find out the effectiveness.

- The discussion was presented under the following headings.
- Demographic variables of patient with diabetes mellitus.
- Effects of structured teaching programme before and after STP.
- Association between demographic variables and the level of knowledge.
- Demographic variables of patient with diabetes mellitus.

Demographic characteristic of subjects (n=60) according to the show that 11.6% of patient with diabetes mellitus were in the age group of 30 -35 years, 23.33% were 35-40 year, 26.33% of were 45-50 years.

According to their gender that the samples 68.33% of patient with diabetes mellitus were male and remaining 31.67% of patients were female.

According to their education status that. 18.33% had primary education, 2008 38.33% had secondary education, level 18.33% of them had higher secondary education level and 25% of the patient with diabetes mellitus had graduate level.

According to the occupation 40% of the patient with diabetes mellitus were agriculture, 25% were businessmen, 21.67% government service and 13.33% were private service.

According tom monthly income reveals that 16.67% of patient with diabetes mellitus were have less than Rs. 3,000 , 18.33% of them were have Rs. 3001-6000, 25% were sikh and 1.67% of them were Muslim.

According to their year of having diabetes diabetic mellitus 6.67% of the patient having since 1 year, 48.33% were having more than 3 year and 26.67% of patient having more than 4 years.

According to their place of residence 13.33% of patient with diabetes mellitus were from village and 86.67% of them were from city. According of family of diabetes mellitus, 33.33% of the patient having family history of diabetes mellitus

Effects of structured teaching programme before and after STP. Hence the preventions of complications, education must be targeted to the patient with adequate knowledge 45 (75%) moderate knowledge 11 (18%) and inadequate knowledge 4(7%)

The knowledge score of patients with diabetes mellitus were high before STP (Mean 13, SD 5.01) in comparison the score of after STP (Mean 23.6, SD 4.5). The difference was found statistically significant at the level of 95% confidence. The finding can be attributed to the effectiveness of STP on the prevention of complications of the diabetes mellitus by the patient with diabetes mellitus.

A study was conducted by Gearge T 2010 the structured teaching programme focuses on the diagnosis and treatment acute and chronic complication other then those associated with

hypoglycemia and severe metabolic disturbances such as diabetes retinopathy and diabetic foot. So the health teaching improves the information regarding these complications structured teaching programme is a framework for measuring progress in the fight against diabetes. Its complications. It improves the information regarding diabetes care; improve quality of life for people with diabetes ultimately safe.

The prevalence rate of nephropathy is 2.5% to 13% women gender were more found to be significantly increased new invasive therapeutic modality can hence be used to improve the quality of lives of about 75 of patient with type 2 diabetes by partially or significantly decreasing the required exogenous insulin. The long term complications of this procedure need to be observed before it's affective application on a larger scale. Overall has proved to be a very significant breakthrough in the field of medicine.

Association between level of knowledge with respect to demographic variables.

The significant finding to the study notice there was significant association between the level of knowledge experienced by the patient with diabetes mellitus after STP with all their demographic variables occupation, monthly income and religion.

During pretest 55% of patient with diabetes mellitus having inadequate knowledge, 33% patient were having moderately adequate knowledge and 11.7% patient were having adequate knowledge where as during the post test 11.7% of respondent inadequate knowledge, 43.3% were having moderately knowledge and 45% were having adequate knowledge.

The above findings strongly suggest that nurses should inform and educate diabetic clients about the various aspects of management of diabetes mellitus as a part of the routine nursing care. Thus it is hoped that the diabetes education programs that are evolving as a part of multifaceted diabetes management effort will be able to help patients reach higher level of adherence, metabolic control and satisfaction by leading to their more active participation in the management of diabetes.

CONCLUSION

The pre –experimental study conducted with 60 samples of Diabetes mellitus patients who were without the complications of diabetic foot and retinopathy with the purposive sampling method. The data collected from the selected samples with the help of demographic, clinical variables and self structured questionnaire regarding diabetes mellitus and prevention of complications. The study concludded that the STP is effective in improving the level of knowledge and such education program are important to improve the health care services.

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