EFFECT OF AN INFORMATION BOOKLET ON THE KNOWLEDGE REGARDING PREVENTION OF COMPLICATIONS AMONG PATIENTS DIAGNOSED WITH DIABETES MELLITUS IN SELECTED COMMUNITY OF MUMBAI

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Abstract:

Background: According to Diabetes Atlas published by the International Diabetes Federation, India was home to 62.4 million diabetics in the year 2011 and the incidence is on a continuous rise and this number is predicted to rise to almost 70 million people by 2025. The countries with the largest number of diabetic people will be in India, China and USA by 2030. The basic issues focuses on progress and challenges in basic and clinical research on chronic complications of diabetes. The end-stage complications can be severe vision loss, end-stage renal disease or transplant. Many of these life-threatening or disabling events can be prevented with proper "life - long" diabetes care and healthy lifestyle. Hence, the researcher felt that knowledge regarding prevention of diabetes mellitus complication, with the help of an information booklet may help.

Aim: The knowledge regarding prevention of complications among patients diagnosed with diabetes mellitus should be improved after reading information booklet.

Objective: 1. To assess pre-test and post-test knowledge of patients regarding prevention of its complications before and after the administration of information booklet. **2.** To find out relationship of knowledge of patients with the selected demographic variables.

Material and Methods: One group pre-test post-test design was used. 60 individuals were selected from community of Mumbai. Non probability convenience sampling method was used. Data collection included structured questionnaires, and information booklet.

Analysis: At the conclusion of post-test knowledge scores of patients before and after administration of information booklet was improved. Comparison between pre-test and post-test knowledge scores t(24.30) was greater than tabulated value therefore, there was a significant difference in the knowledge of patients. Association of post-test knowledge scores of samples with their selected demographic variable gender was t (0.48) therefore, there was no association between the mean scores of knowledge with the selected demographic variable gender.

Conclusion: Knowledge scores and practices scores depicted marked improvement after the administration of information booklet.

Implications: Administration of information booklet on the knowledge regarding prevention of complications among patients diagnosed with diabetes mellitus can be taken in nursing service to improve knowledge of college student, can be used for preventive and promotive purposes, can be used in school and community to spread awareness. In nursing education it will serve as a guideline to use information booklet as an effective method to disseminate information, can impart knowledge to others.

In nursing research tool and technique can be used for further reference, other researchers may use the suggestion and recommendation for conducting further study and findings can be added to the literature.

Key words: information booklet, knowledge, diabetes mellitus.

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Introduction:

Diabetes mellitus is a heterogeneous group of diseases characterized by chronic elevation of glucose in the blood. It arises because the body is unable to produce enough insulin for its own needs, either because of impaired insulin secretion, impaired insulin action or both. This chronic metabolic disorder is a fast-growing global problem with huge social, health and economic consequences.

Massive population of the mankind live with diagnosis of diabetes mellitus. At present India is considered as the world's "capital of the disease". People with diabetes have risen from 108 million in 1980 to 422 million in 2014. The global prevalence of diabetes among adults over 18 years of age has risen from 4.7 percent in 1980 to 8.5 percent in 2014. Diabetes prevalence has been rising more rapidly in middle and low-income countries. In 2016, an estimated 1.6 million deaths were directly caused by diabetes. Another 2.2 million deaths were attributable to high blood glucose in 2012. Almost half of all deaths attributable to high blood sugar occurred before the age of 70 years.

WHO estimates that diabetes was the leading cause of death in 2016 (WHO fact sheets, 2019). According to Diabetes Atlas published by the International Diabetes Federation (2019) India was home to 62.4 million diabetics in the year 2011 and the incidence is on a continuous rise and this number is predicted to rise to almost 70 million people by 2025.The countries with the largest number of diabetic people will be in India, China and USA by 2030.

Chronic exposure to high blood glucose is a leading cause of renal failure, visual loss and a range of other types of tissue damage. Diabetes also predisposes to arterial disease, not least because it is often accompanied by hypertension, lipid disorders and obesity. It's complications are impairment of immune system, neuropathy, nephropathy, retinopathy, cardiovascular diseases and diabetic foot.

Diabetes is a serious and life-threatening disease; however it can be managed very well through proper treatment and controlling. Diabetes self-managing training and education plays a vital role in the management of diabetes. It is crucial for diabetic patients to be aware of nature, treatment, risk factors and complications of disease due to provide suitable modality to attenuate the complications. Better diabetic education and knowledge to control and treat diabetes at right time can reduce the risk factors and minimize the chances to develop complication of diabetes and this reduce morbidity and mortality in diabetes.

It shows that intervention with leaflets handed in primary healthcare to people with diabetes can bring benefits in what concerns adherence to therapeutics, namely in young people with less studies. Resources such as books and pamphlets, newspapers and magazines are common ways with which that people with diabetes learn about their medical conditions. Use of these sources of information predicts the great number of positive outcomes among patients. It shows that, the implementation of a structured programme of care for the diabetes increases the efforts to perform educational strategies with proactive approaches.

The participation of the patients in all phases of planning, development and implementation of the educational activities, could be the basis for preventive interventions and health promotion Studies shows that regular health education services will make patients knowledgeable about the disease and encourage self-care management in those who are diagnosed as diabetic. It will reduce the health-care burden and also help in achieving glycemic control, thus minimizing complications.

Research Question?

How much improvement in knowledge regarding prevention of complications among patients diagnosed with diabetes mellitus?

Objectives:

To assess pre and post-test knowledge score of patients regarding prevention of complications of diabetes mellitus before and after administration of information booklet.

Materials and Methods:

One group pre-test post-test design; 60 individuals was selected in community of Mumbai. Non probability convenience sampling method was used. A structured interview schedule was used to collect demographic data and to assess the knowledge about prevention of complications. Information booklet was given to the patients.

Participants: Target population comprised of the patients belonging to the age group less than 30 years to more than 51 years of age. Patients diagnosed with diabetes mellitus and on insulin administration and who are willing to participate as well as patients who can read and understand Hindi and English were included in the study. Patients who are mentally not stable were excluded from the study.

The researcher selected patients according to inclusion criteria. Knowledge assessed by structured questionnaires. he investigator visited the samples on the seventh day where post test was conducted with interview schedule.

Ethical considerations:

The study was part of a larger research project approved by the members of Ethical Committee for Research of Leelabai Thackersey College of Nursing S.N.D.T. Women's University. Participant's consent and information sheet was obtained prior by making them aware the steps of the data collection.

Quantitative Data analysis:

Data was analysed by section I, which was further divided into Part A: demographic variable included age, gender, education, occupation, family income, type of family and family history and Part B: duration of illness, present treatment, use of hypoglycemic agents, dosage of insulin, time of dosage, compliance to treatment, number of hospitalizations, blood sugar level, blood sugar level monitoring, history of hypoglycemic attacks, signs of lipodystrophy.

Section II data about knowledge was analysed under 7 subheadings:

A. Knowledge about diabetes mellitus

B. Knowledge about diabetic ketoacidosis

C. Knowledge related to insulin

D. Knowledge about diabetic neuropathy

E. Knowledge about diabetic nephropathy

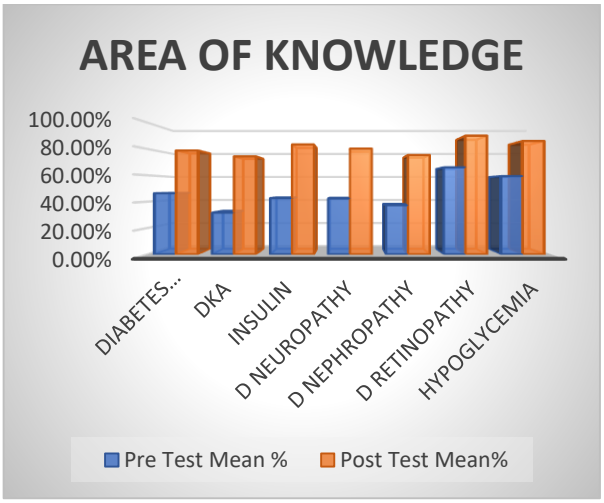
F. Knowledge about diabetic retinopathy

G. Knowledge about hypoglycemia

The questionnaire consisted of 32 questions which were multiple choice questions. Each question had four options and one correct option. A score of one was awarded to the correct answer.

RESULTS:

FIGURE NO: 1 SIGNIFICANCE OF CHANGE IN KNOWLEDGE SCORES OF SAMPLES BEFORE AND AFTER ADMINISTRATION OF INFORMATION BOOKLET



From the above graph it highlights the mean knowledge scores regarding prevention of

diabetes mellitus before and after administration of information booklet. The knowledge score of disease condition in pre-test was 46.40%, which was improved to 78.80% in post-test. Similarly,

the knowledge score of diabetic ketoacidosis in pre-test was 31.67%, which was improved to 74.33% in post-test. Whereas, the knowledge score of insulin in pre-test was 42.67%, which was improved to 83.33% in post-test. The knowledge score of diabetic neuropathy was 42.40%, which was improved to 80.20% in post-test. The knowledge score of diabetic nephropathy in pre-test was 37.33%, which was improved to 75.33% in post-test. Similarly, the knowledge score of diabetic retinopathy in pretest was 66%, which was improved to 90% in post-test. Whereas, the knowledge scores of hypoglycemia in pre-test was 59.33%, which was improved to 86% in post-test. Thus, from the above table we can infer that there is more improvement in the knowledge area of diabetic ketoacidosis, insulin and diabetes mellitus.

TABLE NO: 1 SIGNIFICANCE OF CHANGE IN PRE-TEST AND POST-TEST KNOWLEDGE SCORES OF SAMPLES REGARDING PREVENTION OF COMPLICATIONS OF DIABETES MELLITUS

VARIABLE	N	M	SD	SED	t		SIGNIFICANCE
Overall pre-test knowledge	50	13.96	3.99	0.47	Cal 24.30	Table Value At 0.05= 2.02 At 0.01= 2.70	Significant at 0.01 level
Overall post-test knowledge		25.56	2.32				

The above table shows that, the calculated "t" value is 24.30. The table value at 0.05 level of significance is 2.02 and at 0.01 level of significance is 2.70. Therefore, as the calculated "t" value is greater than table value at 0.01 level of significance, we can infer that the overall score of post-test knowledge after administration of information booklet is significantly greater than the overall pre-test value of knowledge.

TABLE NO: 2 ASSOCIATION BETWEEN THE KNOWLEDGE SCORES OF DIABETIC PATIENTS WITH DEMOGRAPHIC VARIABLE: GENDER

SR. NO	VARIABLE	N	SD	M	SDD	SED	t		SIGNIFICANCE
1.	Post-test knowledge of male diabetic patient	25	2.42	25.72	2.34	0.66	Cal. 0.48	Table Value At 0.05 =2.02 At 0.01=2.70	Non Significant at 0.05 level
	Post-test knowledge of female diabetic patient	25	2.25	25.4					

The above table shows that, the calculated "t" value is 0.48. Whereas, the table value at 0.05 level of significance is 2.02 and at 0.01 level of significance is 2.70. Therefore, as the calculated "t" value is less than the table value at 0.05 level of significance, we can conclude that there is no significant difference between mean scores of knowledge regarding prevention of complications of diabetes mellitus after administration of information booklet among diabetic patients with male and female gender. Thus, we may infer that there is no association between knowledge of diabetic patients regarding prevention of complications of diabetes mellitus and their gender.

Testing of Hypothesis:

H1 The significance of change in pre-test and post-test knowledge scores of samples regarding prevention of complications of diabetes mellitus showed significantly higher. The obtained value of t (24.33) is greater than tabulated value at 0.01 level the mean knowledge score after administration of information booklet is significantly higher than mean score of knowledge before administration of information booklet.

H2 There will be a significant difference in the knowledge with demographic variables. The obtained "t" value at 0.05 level of significance is 0.48. Therefore, as the calculated "t" value is less than the table value at 0.05 level of significance, we can conclude that there is no significant difference between mean scores of knowledge regarding prevention of complications of diabetes mellitus after administration of information booklet among diabetic patients with male and female gender. Thus, we may infer that there is no association between knowledge of diabetic patients regarding prevention of complications of diabetes mellitus and their gender.

Discussion:

In the present study it was shown that there was improvement in knowledge score at 0.01 level of significance after the administration of information booklet. In this study also shown that there was no significant difference between mean scores of knowledge regarding prevention of complications of diabetes mellitus after administration of information booklet among diabetic patients with male and female gender.

It is seen that information booklet is the effective tool to impart the knowledge to the patients. The study was conducted by Pravin Gholap, to assess the effectiveness of information booklet regarding DOTS therapy among tuberculosis clients in a selected primary health centre. The pre-test knowledge mean score was 8.85, whereas, the post-test mean score was 14.26.

To prevent and control diabetes, planning of public health policies are important. A study was conducted by Deepa M., et al. (2014). 43.2 percent of overall population had heard a condition called diabetes. Among the general 56.3 percent were diabetic population and 63.4 percent were knew that diabetes could be prevented. General population and diabetic population, 51.5 percent and 72.7 percent respectively were aware that diabetes could affect other organs.

In India, mostly rural areas, knowledge and awareness regarding diabetes was poor. Therefore this stressed the requirement of conducting large scale diabetes awareness and education programme.

Conclusion:

The result of the study clearly shows that administration of information booklet on the knowledge regarding prevention of complications among patients diagnosed with diabetes mellitus had a positive effect on knowledge of the patients. The information booklet had markedly improved the knowledge regarding prevention of complications among patients diagnosed with diabetes mellitus.

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