

Effectiveness of Planned Teaching Programme (PTP) on Knowledge and Practice about Self-care of Diabetes Mellitus Type-II Patients

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Abstract

An evaluative study was conducted to assess the effect of Planned Teaching Programme (PTP) in terms of knowledge and practice about self-care of Type-II diabetes mellitus patients in Pt BD Sharma, PGIMS, Rohtak. A total 100 patients were selected using simple random sampling technique. A quasi experimental one group pre-test and post-test research design was used to assess the knowledge and practice of self-care activities in diabetic patients. A structured knowledge questionnaire was used to collect the data. The results revealed that the mean pre-test knowledge score was 15.36 which increased to 22.77 in post-test. The Mean post-test practice score 14.51 was also higher than the mean pre-test practice score of 10.72. The mean difference between the post-test and pre-test knowledge and practice scores of diabetic patients was found to be highly significant. The study concludes that a planned teaching programme was significantly effective in increasing the knowledge and improving the practice of diabetic patients regarding self-care of the disease.

Diabetes mellitus is a group of metabolic diseases in which a person has high blood sugar, either because the pancreas does not produce enough insulin, or because cells do not respond to the insulin that is produced. The high blood sugar produces the classical symptoms of polyurea (frequent urination), polydipsia (increased thirst) and polyphagia (increased hunger). Untreated, diabetes can cause many complications. Acute complications include diabetic ketoacidosis and non-ketotic hyperosmolar coma. Serious long-term complications include cardiovascular disease, chronic renal failure, and diabetic retinopathy (retinal damage).

Type-II diabetes mellitus epidemic in India is a result of social influence and changing life style. Globally as of 2010, an estimated 285 million people had type II diabetes making up about 90 percent of the cases.

India has more diabetics than any other country in the world, according to the International Diabetes Foundation, the disease affects more than 50 million Indians.

Need and significance of the study: In India, the preva-

lence of macro vascular complications such as coronary artery disease and peripheral vascular disease in diabetic population has been reported as 21.4 percent and 6.3 percent respectively. The prevalence of micro vascular complication such as micro-albuminurea and diabetic nephropathy was reported as 26.9 percent and 2.2 percent respectively in the same population, which increased economic burden of diabetes mellitus. A report of 2012 shows that diabetes-associated costs, 72 percent were accounted for by direct medical expenditures and the balance by indirect costs such as lost productivity, unemployment due to diabetes-related disability, and premature mortality. The estimated total economic cost of diagnosed diabetes in 2012 was \$245 billion, a 41 percent increase from our previous estimate of \$174 billion in 2007. This estimate highlights the substantial burden that diabetes imposes on society.

Usually people ignore the symptoms of diabetes and seek the medical aid only when serious complications develop. Due to lack of knowledge, ignorance and irregularity in the treatment, morbidity and mortality increased. Adequate treatment of diabetes is thus important, as also blood pressure control and lifestyle factors such as stop smoking and maintaining a healthy body weight. Management concentrates on keeping blood sugar levels as close to normal as possible, without causing hypoglycaemia. Patient edu-

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cation, understanding, and participation is vital, since the complications of diabetes are far less common and less severe in people who have well-managed blood sugar levels. Hence the investigator felt the need to develop strategies to tackle this problem.

Objectives

The objectives of the study were to:

- Assess the knowledge and practice of the patients about self-care with diabetes mellitus.
- Evaluate the effectiveness of Planned Teaching Programme (PTP) on knowledge and practice of self-care in terms of gain in knowledge and practice.

Assumptions

The study assumed that (i) Patients may have inadequate knowledge about the Diabetes Mellitus and its complications; (ii) There will be significant change in knowledge and they will practice self-care activities after administration of Planned Teaching Programme (PTP) which will minimise the complications of the Diabetes Mellitus.

Hypothesis

H₁: The mean post-test knowledge and practice scores of patients will be significantly higher than the mean pre-test knowledge and practice scores regarding self-care of diabetes mellitus

Review of Literature

Dorothy (2002) conducted an evaluatory study in Bangalore to assess the effectiveness of a planned self-instructional module programme on the knowledge of diabetic patients regarding home management of diabetes on 30 diabetic patients. Significance of the difference between means of pre-test and post-test knowledge scores 't' value was computed. The obtained 't' value (8.1) was found to be significant at 0.05 level of significance. The study revealed that the mean post-test scores (23.56) was apparently higher than the mean pre-test score (17.33) so the SIM was effective

In a similar study conducted in Shridevi College of Nursing Tumkur, Bangalore by Ramesh Kumar, (2004-2005) a significant increase in knowledge and attitude scores of the sample with a significant 't' test values 42.51 and 59.54 respectively at $p < 0.0001$ level was found.

Methodology

Evaluative research approach was used for present study and the research design was one-group pre-test post-test design. The study sample included patients with Type-II diabetes.

The study was conducted in Diabetes Clinic, PGIMS, Rohtak. A total of 100 patients were selected as sample; simple random sampling technique was used to select the patients (samples for study). Demographic variables included age, gender, level of education, occupation, heredity of disease number of children, and family income etc.

While the dependent variable was knowledge regarding the diabetic mellitus, the independent variable was a Questionnaire about the knowledge and practice of diabetes mellitus and planned teaching programme about self care of diabetes mellitus.

Data collection tool consisted of: (a) Demographic Data (10 items), (b) Structured knowledge questionnaires (30 items), (c) Practice check list about DM-II (20 items).

Development of the tool: A knowledge questionnaire was prepared for the study to assess the knowledge and a check-list prepared to assess the practice of sample subjects. The tool was refined and validated by the subject experts, Guide and Co-Guide.

Inclusion criteria: (a) Ambulatory adults of DM-2 both male and female, attending diabetes clinic, PGIMS, Rohtak; (b) Patients willing to participate in the study; (c) who could understand and read English or Hindi language were included.

Exclusion criteria: (a) Type-I diabetes patients; (b) Too sick patients having ketoacidosis or sever complications; (c) Patients having other associated diseases; and (d) Patients not willing to participate were excluded.

Data analysis: The obtained data were analysed, tabulated and interpreted using descriptive and inferential statistics.

Section-1 was the description of sample characteristics by their age, sex, marital status, number of children, education, occupation, total family income, duration of disease; Section-II was the comparison the level of knowledge and practice of the patients with diabetes mellitus before and after planned teaching programme. In Section-III, the effectiveness of PTP on self care activities of DM-II patients was analysed.

Results

Table 1 depicts the level of knowledge of sample subjects on self-care activities before and after PTP. It shows that only 5 percent had adequate knowledge but after administration of PTP, 68 percent had moderately adequate and 32 percent had adequate knowledge. So it can be concluded that the Planned Teaching Programme was an effective teaching strategy

Table 1: Distribution of subjects by level of knowledge before and after PTP (n=100)

S. No.	Level of Knowledge	Pre-test		Post-test	
		No.	%age	No.	%age
1	Moderately adequate (51-75%)	53	53	68	68
2	Adequate (>75%)	05	05	32	32

Table 2: Distribution of the subjects by level of practice before and after PTP (n=100)

S.No.	Level in Practice Test	Pre-Test		Post-Test	
		No.	%age	No.	%age
1	Undesirable	58	58	-	-
2	Desirable	42	42	38	38
3	Most-Desirable	-	-	62	62

Table 2 reveals that 58 (58%) of samples had undesirable practice, and only 42 (42%) had desirable practice while after intervention of PTP, 62 (62%) had most desirable practice and 38 (38%) had desirable practice. Table 3 outlines the mean post-test knowledge score 22.77, which was higher than the mean pre-test knowledge score (15.36) and the 't' value was observed to be highly significant ($t=10.93$) at $p<0.001$ level for overall increase in practice of samples of DM-II suggesting that PTP was effective in improving the knowledge of sample subjects regarding the self care activities to avoid the complications.

Discussion

The majority of samples were in age group of 42-54 years, 55 percent of them were males (97%) were married and 35 percent were educated up to higher secondary. Only 5 percent patients had adequate knowledge score in pre-test whereas 68 percent had adequate knowledge and none of them had inadequate knowledge in post-test. Majority of the subjects ($n=62$, 62%) had most-desirable practice score in post-test while 58 percent of samples had undesirable practice score in pre-test. The mean difference between the post-test and pre-test knowledge and practice scores of sample subjects was found to be highly significant (7.41*) with paired 't' test. Different studies have been conducted to evaluate the effectiveness of PTP, STP and SIM on self-care activities of DM-II patients. According to Dorothy (2002) the obtained 't' value (8.1) was found to be significant

Table 3: Evaluation of overall effectiveness of PTP in terms of knowledge

Group	Mean	SD	Mean difference	t' value	Df	Significant / Not significant
Pre-test (n=100)	15.36	2.86	7.41	19.25	99	HS <0.001
Post-test (n=100)	22.77	2.42				

at 0.05 level of significance.

The findings of the study revealed that the mean post-test scores (23.56) was apparently higher than the mean pre-test score of 17.33. A similar study conducted at Shridevi College of Nursing Tumkur, Bangalore showed a significant increase in knowledge and attitude scores of the sample with a significant 't' test values of 42.51 and 59.54 respectively at $p<0.0001$ level.

The health care delivery system at present gives more emphasis on prevention rather than curative aspects. Student nurses must learn these and apply while working in the clinical area. Nursing personnel working in different areas should be given service education and help them to stay abreast with recent trends.

Nurses play a major role in effective health promotion and maintenance. Health education is one of the most effective interventions that could be used in health care agency. Nurses can educate the diabetic patients to improve their quality of life by taking care of themselves in the better way as it is a lifelong disease.

Health administration should make the education department aware about the prevailing health problems and assign the staff for conducting the planned teaching programme in hospital and community.

Recommendations

In the light of the findings listed above and from the personnel experience of the investigator the following recommendations offered are:

- A similar study can be replicated on large sample from various hospitals.
- A follow-up study can be conducted among the study group to find out the impact of knowledge imparted in their daily life regarding prevention of complications of disease.
- An experimental study can be undertaken with a control group for effective comparison.
- A comparative study may be conducted between the clients with type-I and type-II diabetes mellitus.

Conclusion

The study findings indicate that there is urgent need of self care recommendations for diabetic patients to prevent further complications, which will unload the hospital admissions and thus the burden of finance budget. There is a need for regular and well planned diet and exercise adoption in the patients of type-II diabetes mellitus. Nurse

can reach and teach the masses by educating the patients regarding their self care of DM-II. Newly diagnosed diabetes mellitus can be provided with pamphlets, booklets or other teaching materials to impart knowledge about other aspects of self care activities. Family members should be included in health care teaching.

References

1. Lewis Collier. Text book of Medical Surgical Nursing. 5th edn. New York (USA) Mosby Publication 2003; p 1444-76
2. Thapa Basant. Text book of Essentials of Medical Surgical Nursing. New Delhi: Jaypee Brothers. 2011; p 436-40
3. Report of experts committee on the diagnosis and classification of diabetes mellitus. *Diabetes Care* 2003; 26: 5-20
4. Harrison DG. Endothelial dysfunction in atherosclerosis. *Basic Cardiol* 2011; 89: 87-102
5. Ramachandran A, Latha S. NIDDM in an urban population in India. Rising prevalence of Diabetogia 1997; 40: 232
6. The challenges of Diabetes. *The Hindu (Magazine)* 2012; 20: 4-6
7. Swami K. Who is afraid of Diabetes. *The Hindu (Magazine)* 2012; 14: 1-4
8. Park K. Text Book of Preventive and Social Medicine. 21st edn. Banarsidas Bhanot, Jabalpur, India p 362-66
9. Mohan V, Sandeep S. Epidemiology of Type-2 Diabetes - Indian Scenario. *Indian Journal* 2007; 125: 217-30
10. Brunner, Siddhartha. Text book of Medical Surgical Nursing. 9th edn. Philadelphia: Lipponcott Williams & Wilkin. 1997; p 1150-1200
11. World Diabetic Day. *The Indian Express magazine* 2012; 14: 8-9
12. Guigolano D, Paolisso G, et al Oxidative Stress and Diabetic Vascular Complications. *Diabetes Care* 1996; 19: 257-67
13. Chow CK, Raju PK et al. The prevalence and management of diabetes in rural India. *Diabetes Care* 2006; 29: 1717-18
14. Paterson B, Thorne S. Developmental evolution of expertise in diabetes self-management. *Clinical Nursing Research* 2000; 9: 402-19
15. Polit DF, Beck C Tatano. Text book of Nursing Research Generating and Assessing Evidence for Nursing Practice. 8th edn. New Delhi: Wolters Kluwar (India) Pvt Ltd; 2008; p 145-49
16. Potter PA, Perry AG. Textbook of Fundamentals of Nursing. 5th edn. Mosby, 2005. p 1014-16
17. Polit DF, Beck C Tatano. Textbook of Nursing Research: Generating and Assessing Evidence for Nursing Practice. 8th edn. New Delhi: Wolters Kluwar (India) Pvt Ltd; 2008. p 105
18. McKay HG, King D, et al. The diabetes network internet based physical activity intervention, a randomized pilot study. *Diabetic Care* 2010; 24: 1328-34
19. Sharma SK. A Text Book of Nursing Research and Statistics. Elsevier, 1st edn, p 218
20. Lobiondo W, Haber Nursing Research. 4th edn. London; Mosby Publication, 1998; p 252-3
21. Hema Suresh. "Knowledge assessment regarding diabetes mellitus among the residents of selected villages in Mangadu, Chennai." *Journal of Nightingale Nursing Times* Jan 2013; 8(10): 49-52

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