

SELF-CARE MANAGEMENT OF DIABETIC PATIENT

Puspanjali Mohapatro, Assistant Professor, Faculty of Nursing, SUM Nursing College, Siksha 'O'
Anusandhan (Deemed to be University), Bhubaneswar, Odisha, India Email:
puspanjalimahapatra07@gmail.com (Corresponding author)

Mamata Swain, Assistant Professor, Faculty of Nursing, SUM Nursing College, Siksha 'O'
Anusandhan (Deemed to be University), Bhubaneswar, Odisha, India

Abstract: Objectives: Find out the effect of structured teaching program on knowledge regarding self-care management of diabetes mellitus among the diabetic patients of the selected community area, Khordha, and to determine the association between post-test scores with selected sociodemographic variables. **Methods:** In this study Quasi-experimental (one group pre and post-test) design was used. Purposive type of sampling technique was used to select fifty no. of diabetic patients of a selected area of Khordha, Odisha as study sample, and Self-structure close-ended multiple-choice questionnaire was used to the collection of information. **Result:** There were maximum respondents (36%) were within 35-40 years of age. The majority (54%) were males. According to religion, the maximum (96%) were Hindu. According to Educational status, maximum (64%) were graduate. According to previous exposure to STP on self-care management of DM, maximum (84%) were having no previous exposure and analysis is revealed that structured teaching program improved the knowledge of diabetic patients regarding self-care management of diabetes (before intervention 11.66 ± 2.2 & after intervention 23.08 ± 2.31) significantly as calculated "t" value is 34.92 & calculated p-value was < 0.0001 which is less than 0.05 level of significance. A statistically no significant association was there in between the knowledge score of DM affected people on a structured teaching program of DM with a sociodemographic variable. **Conclusion:** On the finding of the study, it was found that a structured teaching program is more practical in upgrading the knowledge of patients on self-management of diabetes which ultimately can improve their health status.

Keywords: Structured teaching program, Diabetes Mellitus (DM), Self-care management.

Introduction

Diabetes Mellitus is a chronic metabolic disease. India is considered as the diabetic capital of the world. (1) Globally, 463 million adults living with diabetes according to the International Diabetes Federation in the year 2019 report, and in 2017 the report was 425 million people were affected with diabetes. By the year 2030, it will be double and among them, Type 2 diabetes will about 85-90% of all cases.¹ According to the World Health Organization (WHO), 69.2 million people in India living with diabetes in the year 2015. Nearly by 2030 in India type 2, diabetes people may have 98 million people, according to a study published on Wednesday. Nov 22, 2018. (6) According to the International Diabetes Foundation of India, currently, more than 62 million people diagnosed with diabetes and it estimated that every sixth person with diabetes will be an Indian. Every year nearly 1 million people die due to Diabetes in India.^{1, 2} Diabetes Mellitus is one of the commonest endocrine diseases which affects both developed and developing country. It will be the seventh leading cause of death in 2030. There is an 80% burden of diabetes for middle- and low-income countries. Diabetes accounts for 10% of total metabolic factors with 2% of mortality in 2008 in India, reports by WHO (2011). Diabetes is prevalent in both urban and rural areas the incidence is increasing and become double by 2030.³⁻⁵ Diabetes mellitus is an Iceberg disease especially in developing countries like India, China, etc. and in newly industrialized countries.^{6, 7} A survey was conducted during 2015-2019 by AIIMS, New Delhi reported that 8.0% of cases were known diabetes and 3.8% were new prevalence cases. Alike in males (12%) and females (11.7%) prevalence rate of diabetes.⁷ Everyone concerned and everyone has a crucial role to play in helping to self to save our health and to protect

our future.^{2, 8} Therefore, the study was conducted to evaluate the effect of STP on self-care management of Diabetic patients in a selected area of Khordha.

Methods and material

In this study, a quantitative type of research approach and research design was Quasi-experimental (one group pre and posttest). Setting: a study conducted at selected Community area, Khordha. Population: it comprised of all Diabetes mellitus affected people of the selected area. Sample: Samples were 50 Diabetes mellitus affected people without any other comorbid serious diseases like kidney failure, heart diseases, etc. Purposive type of sampling technique was used. Sample size: Total 50 nos. Diabetes mellitus affected people.

Data Collection tool:

In the present study, Self-structure close-ended multiple-choice questionnaires used for assessing the knowledge about self-care management of DM to collect data. The knowledge questionnaire used as tool consists of two sections,

Section A: Socio-demographic Data such as age, sex, religion, Qualification, previous exposure.

Section B: Self-structured Questionnaire for knowledge assessment on self-care management of Diabetes mellitus: This tool consists of 30 no. of questionnaires which focuses on Meaning of DM-2 items, Causes & risk factors of DM-5 items, Clinical features of DM-2 items, Self-care management in DM -17 items, Complication of DM-4 items. Each item has 4 options with one correct answer. For each correct answer, the score was 1 point & for an incorrect answer, the score was 0. **Scoring:** 0-6 scored as very poor, 7-12 scored as poor, 13-18 scored as average, 19-24 scored as good and 25-30 scored as excellent.

The reliability value of the tool was 0.82.

Process of Data collection:

An official letter for permission was obtained from the authority of the community, Khordha after getting ethical permission from SOA University's ethical committee. Based on inclusion & exclusion criteria, the investigator identified the eligible samples, and data was collected from the samples of the selected area of Khordha by adopting a purposive sampling method. The researcher gives self-introduction and explained in detail about the study's purpose to samples. Then after giving information, written consent was obtained from each sample. Then socio-demographic information was collected from all 50 samples by giving questionnaires. Then self-structured knowledge questionnaire regarding self-care management was used to find out the pre-knowledge of samples with allotted time was 20 min. Then STP was administered. The STP consists of the definition of diabetes mellitus and types of diabetes mellitus, definition, causes, risk factors, signs and symptoms of DM, self-care management, and complication of Diabetes mellitus. Then Post-test was conducted after 7 days. Finally, the participants were thanked for their cooperation & active participation throughout the study.

Study results:

For analyzing data, inferential statistics & descriptive statistics were used. Demographic data, before and after the STP knowledge score on self-care management of DM were expressed as frequency and percentage. To find the effect of the STP Paired "t" test was applied & the chi-square test was applied for finding the association between before and after the STP knowledge score with selected demographic variables.

Sociodemographic characteristics of study participants

Out of 50 samples, maximum respondents (36%) were within 35-40 years of age. The majority (54%) were males. According to religion, the maximum (96%) were Hindu. According to Educational status, maximum (64%) were graduate. According to previous exposure to STP on self-care management of DM, maximum (84%) were having no previous exposure. (Table-1)

Pre & post-test knowledge score of DM affected people regarding self-care management of DM

The knowledge level of DM affected people was assessed by using 5 point scale according to their scores secured. The scoring in pretest was interpreted that 34 people (68%) secured score between 7-

12, thus their level of knowledge was interpreted as POOR. About 15(30%) people secured score within the level 13-18, thus their knowledge was interpreted as AVERAGE. 1 person scored within the level 19-24, the knowledge was interpreted as GOOD. But in the pretest, none of the people had secured the score within 25-30. Whereas in posttest the maximum number 36(72%) of people had secured the score within 19-24, thus their knowledge level interpreted as GOOD. Also, 14 (28%) of people obtained scores within the score 25-30, thus their level of knowledge interpreted as EXCELLENT. (Table-2)

Hence, there is a great difference in knowledge score in posttest than pretest which reveals that there is a gain of knowledge on self-care management of DM in the posttest.

Effect of STP by Comparison of pretest & posttest knowledge score regarding self-care management of DM by using paired t-test

There will be a significant difference between pre & posttest knowledge scores among the patients after giving STP on self-care management of DM at $p \leq 0.05$ levels of significance. The pretest & post-test knowledge score on self-care management of DM as calculated paired “t” value was 3.13, 10.58, 5.32, 16.85, 20.79 respectively & calculated “p” value was <0.0001 . The overall pretest & posttest knowledge score as “t” value was 32.92 & the calculated “p” value was <0.0001 . As the calculated “p” value was <0.05 level of significance, which meant we accepted the research hypothesis & rejected the null hypothesis. Thus, STP was effective in enhancing the knowledge levels of DM affected people on self-care management of DM (Table-03)

For the association between knowledge score of before and after STP with selected socio-demographic variables.

Chi-square analysis was used to find an association between before STP knowledge level & the socio-demographic variables such as age, sex, education, religion, previous exposure to STP on self-care management of DM was not statistically significant at 0.05 level of significance. (Table-4)

Discussion

The study reveals that mean & standard deviation value of overall pretest knowledge was 11.66 ± 2.2 whereas posttest knowledge was 23.08 ± 2.31 . The overall pretest & posttest knowledge score as paired t value & p-value was 34.92 & <0.0001 respectively. So, accepting the research hypothesis & rejecting the null hypothesis was there, because the calculated p-value was less than 0.05 level of significance. Thus, the STP program was practical in enhancing the knowledge level of diabetic patients on self-care management of DM.

The result of the study was correlated with Karth.R et (2020) conducted a study with 50 samples on the effect of STP on drug management of DM and result revealed that in pre-test the level of knowledge score was 30(60%) had inadequate knowledge, 15 (30%) had moderately adequate knowledge and 5 (10%) adequate knowledge. In post-test, 10(20%) inadequate knowledge, 18 (36%) had moderately adequate knowledge, and 22 (44%) adequate knowledge. In the pre-test, the mean was 12.46 and the SD was 5.21 and in the post-test mean was 19.72 with the SD was 7.008. The paired t” test value was $t = 1.9845$ ($p=0.0264$) which is statistically significant at the level of $P<0.0$.⁸

Similar to another study Vg, Veeresh(2018) conducted a study by taking 100 samples on the effect of STP on the quality of life of diabetic patients. Finding reveals that the 12.32 ± 3.28 was mean pretest knowledge score and 24.67 ± 0.98 was posttest knowledge score mean \pm standard deviation respectively. “t” value was 35.14 with degrees of freedom 99 at 0.05 level of significance. Hence STP on the quality of life of the diabetic patient was effective.⁹

Conclusion

Structured teaching program had a significant effect on upgrading the knowledge level of DM affected people regarding self-care management of DM. So, this teaching program can be used effectively for improving the health status, decreasing the death rates of people due to DM in our country.

The ethical statement-Institutional ethical committee permitted conducting this study and prior consent was taken from affected DM patients.

Declarations

Funding: None

Conflict of interest: There is no conflict of interest.

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Table no. 01: Description of study samples according to socio demographic variables.

N=50

Demographic variables		Frequency (f)	Percentage (%)
Age in years	35-40	18	36
	41-45	10	20
	46-50	9	18
	51-55	9	18
	>55	4	8
Sex	Male	27	54
	Female	23	46
Religion	Hindu	48	96
	Muslim	02	04
Qualification	<10 th	20	40
	10 th	15	30
	Intermediate	07	14
	Graduate	08	16
Previous exposure to STP on DM	Yes	08	16
	No	42	84

Table-02: knowledge score of DM affected people regarding self-care management of DM before and after STP.
N=50

Level of knowledge	PRE TEST		POST TEST	
	Number	Percentage (%)	Number	Percentage (%)
Very poor	00	00	00	00
Poor	34	68	00	00
Average	15	30	00	00
Good	01	02	36	72
Excellent	00	00	14	28
Total	50	100	50	100

Table-03: Comparison of pretest & posttest knowledge score regarding self-care management of DM by using paired t test

Sl. no	Knowledge Aspect	Pre test	Post test	Calculated value of Paired 't' test	Df	"P" value
		Mean± SD	Mean± SD			
1	Meaning of DM	0.88 ± 0.73	34 ± 12.88	3.13	49	<0.0001**
2	Causes and risk factor of DM	1.6±0.98	3.4 ± 0.74	10.58	49	<0.0001**
3	Clinical feature of DM	0.98 ± 0.61	1.56 ± 0.5	5.32	49	<0.0001**
4	MANAGEMENT OF DM	7.62±2.05	13.94 ± 1.69	16.85	49	<0.0001**
5	Complication of DM	0.26±0.51	2.88+0.76	20.79	49	<0.0001**
	OVERALL	11.66±2.2	23.08+2.31	34.92	49	<0.0001**

** Statistically significant

Table 04: Chi square analysis of selected sociodemographic variables.

N=50

Group	Chi Value	df	P value	Inference
Age	2.797	4	9.49	Not Significant
Sex	0.0363	1	3.84	Not Significant
Religion	4.39	3	7.82	Not Significant
Qualification	1.257	3	7.82	Not Significant
Previous exposure to STP on self-care management of DM	1.131	1	3.84	Not Significant