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A Study to Assess the Effectiveness of a Structured Teaching Program on Knowledge regarding self-Care Management of Diabetes Mellitus among Diabetic Patients in a Selected Rural Area

Shahajahan Banu

Faran College of Nursing, Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka, India

Abstract: ***Diabetes mellitus is one of the most serious health problems worldwide. It is a group of metabolic disorders due to which patients have chronic hyperglycemia caused by either reduced insulin production or resistance to the action of insulin. Objective: The main objective of the study was to evaluate the effectiveness of a structured teaching program on knowledge regarding self care management of diabetes mellitus among diabetic patients in a selected rural area. Materials and methods: The research design used in this study was a pre-experimental, one-group pre-test-post-test design. A Purposive sampling technique is used to select the sample for the study. The samples consisted of 120 patients with diabetes mellitus attending the OPD clinics of Sub District Hospital D. H. Pora, PHC Kadder, and PHC Katrusu, Kulgam. A structured interview schedule regarding self-care management of diabetes mellitus among diabetic patients was used to assess the level of knowledge. Results: The results showed that the diabetic patients had an inadequate level of knowledge in the pre-test. After the implementation of a structured teaching program Results of the paired 't' test indicated that there is a significant large difference between the pre-test (M = 12.36, SD = 2.46) and post-test (M = 24.28, SD = 2.67) with a mean difference of 11.92, and the paired-t test value was 29.41, which was higher than the table value at the.05 level of significance. Conclusion: This study concludes that a structured teaching program was effective in improving the level of knowledge regarding self care management of diabetes mellitus among diabetic patients.***

Keywords: Self-care management, Diabetes Mellitus, Structured teaching program, Knowledge

1. Introduction

Diabetes mellitus is one of the leading health problems in the present population. Diabetes is a metabolic disorder that occurs when the pancreas does not produce enough insulin or when the body cannot use insulin effectively. It is characterized by an elevated level of blood sugar, which may seriously damage the major body organs like the heart, kidneys, blood vessels, eyes, and nerves.[1] A study found that the prevalence of diabetes in India stands at 11.4%, while 35.5% of Indians suffer from hypertension. The study also warned that the number is likely to increase in rural areas in the next 5 years, even though the prevalence rate there is relatively low.[2] Some of the studies that were conducted in India revealed that poor treatment regimens, food attitudes towards the disease condition, and low diabetic education in the general public lead to a higher risk of diabetes.[3] According to another study conducted in Jammu and Kashmir to identify the risk factors for diabetes, high blood pressure, obesity, bad eating habits, and a lack of physical activity all increase the likelihood of acquiring type 2 diabetes.[4] Studies have shown that non adherence to prescribed self-care practices for diabetes is associated with adverse outcome like decreased quality of life and reduce life expectancy.[5] In order to improve the quality of life for patients, it is crucial to concentrate on prevention and diabetic control programs, such as education campaigns about diabetes screening and the provision of necessary resources. Additionally, everyone must realize that their health is in their own hands, so diabetes management calls for active participation from every individual. A research in the Jammu and Kashmir region of Srinagar indicated that structured teaching program were successful in enhancing patients knowledge of how to properly care for their diabetes.6 Taking into account the foregoing, the current study objective is to evaluate the effectiveness of a structured teaching program on self-care management of diabetes mellitus among patients with diabetes in the selected rural area of district Kulgam of Jammu and Kashmir.

Objectives

1) To assess the exciting knowledge on diabetes self care management among diabetic patients by pretest.
2) To evaluate the effectiveness of structured teaching program on self care management of diabetes in diabetic patients by post test.
3) To associate demographic variables with pre test knowledge on self care management.

2. Materials and Methods

The pre-experimental, one-group, pre-test, post-test design was adopted in the present study. The study was carried out in the OPD clinics of Sub District Hospital, D. H. Pora, PHC Kadder, and PHC Katrusu in the Kulgam district. The sample for the study is chosen using a purposive sampling technique. The samples included 120 diabetic patients who visited the outpatient clinics at Sub District Hospitals D. H. Pora, PHC Kadder, and PHC Katrusu in Kulgam.

Inclusive criteria:

1) Diabetes patients who are willing to take part in the research.
2) Diabetes patients available at the time of Data Collection.

3) Patients above the age of 30.
4) Patients who have been diagnosed with diabetes mellitus.
5) Patient who are able to understand Kashmiri, Urdu and English.

Exclusive criteria:
1) Patients under the age of 30.
2) Health-care workers
3) Diabetic antenatal mothers
4) Patients with diabetes who are seriously unwell.

Data Collection tool
The data collection tool for the study comprises of socio demographic variables such as age, gender, education, marital status and occupation. Structured interview schedule regarding self care management of diabetes mellitus among diabetic patients was used to assess the level of knowledge. The hypothesis was tested using descriptive statistics (frequency, percentage, mean, and standard deviation) as well as inferential statistics (Chi-square and paired t-test). The subjects were notified before to the data gathering procedure, and whatever information they supplied was kept confidential.

3. Results

Table 1: Data on demographic variables of study participants, (n-120)

Variables	Category	Frequency (%)
Age	30-50	22 (18.3)
	51-60	51 (42.5)
	61-70	36 (30)
	Above 70 years	11 (9.2)
Gender	Male	36 (30)
	Female	84 (70)
Marital status	Single	14 (11.7)
	Married	106 (88.3)
Education	Illiterate	65 (54.1)
	Primary education	39 (32.5)
	Secondary education	12 (10)
	Graduate and above	4 (3.4)
Occupation	Workers	13 (10.8)
	Business	22 (18.4)
	House wife	62 (51.7)
	Retired	23 (19.1)

According to Table 1, the majority of the patients (42.5%) belongs to the 51-60 age range. 84 (about 70%) of the 120 patients were female. In terms of marital status, 106 individuals (88.3%) were mostly married. 65 of the patients (54.1%) were illiterate, while 39 (32.5%) had primary education. 22 (18.4%) ran their own businesses, 23 (19.1%) were retired, and 62 (51.7%) were housewives.

Table 2: Pre test knowledge score among study participants, (n-120)

Pre test	Maximum score	Mean	Mean %	SD
Knowledge on self care management of diabetes mellitus	30	12.36	41.20	12.36

According to data in Table 2, the mean pre-test knowledge among diabetic patients on self care management of diabetes mellitus was 12.36, with a mean percentage of 41.20 and a standard deviation of 12.36.

Table 3: Post test knowledge score of study participants, (n-120)

Post test	Maximum score	Mean	Mean %	SD
Knowledge on self care management of diabetes mellitus	30	24.28	8.90	2.67

In table 2 it shows that mean post test knowledge on self care management of diabetes mellitus among diabetes patients were 24.28 with mean percentage of 8.90 and the standard deviation was 2.67.

Table 3: Comparison of pre and post test score of knowledge on self care management of diabetes mellitus among study participants, (n-120)

Level of knowledge	Pre test score		Post test score	
	Frequency	Percentage	Frequency	Percentage
Inadequate	90	75	0	0
Moderately adequate	30	25	25	20.83
Adequate	0	0	95	79.16

Table 3 depicts that the majority of the study participants 90 (75%) had an inadequate level of knowledge, and 30 (25%) had a moderately adequate level of knowledge. But in the post-test, most of the 95 (79.16%) had gained an adequate knowledge score, and 25 (20.83%) had a moderately adequate level of knowledge.

Table 4: Mean, standard deviation and 't' value of the knowledge on self care management of diabetes mellitus among study participants:

Knowledge score	Mean	Mean difference	SD	't' value
Pre test	12.36	11.92	2.46	29.41
Post test	24.28		2.67	

To evaluate the effectiveness of structured teaching program on self care management of diabetes in diabetic patients, paired 't' test was used. Results of the paired-t test indicated that there is a significant large difference between pre test (M = 12.36, SD = 2.46) and post test (M = 24.28, SD = 2.67) with mean difference of 11.92 and paired t test value was 29.41 which was higher than the table value at.05 level of significance.

The Chi square test was used to correlate demographic variables with pre-test knowledge of self-care management of diabetes mellitus. The study revealed no significant association between the pre-test knowledge score and the specified demographic characteristics.

4. Discussion

In the current study, 84 (70%) of the participants with diabetes mellitus were females, while a similar study indicated that out of 60 patients, 39 (65.0%) were females with diabetes mellitus.6 It has been reported that 90 (75%) of patients had inadequate and 30 (25%) of diabetic patients had moderately adequate level of knowledge in pre test whereas in post test 95 (79.16%) had adequate level of Knowledge score about diabetes and 25 (20.83%) had

moderately adequate knowledge score. This conclusion was verified by Shreedevi K's study, which revealed that the post-test score on diabetes mellitus knowledge was considerably higher ($p<0.001$).[7]

The current study found that the post-test mean value of knowledge of diabetic patients on self-care management of diabetes mellitus was greater than the pre-test value of 12.36. At the 0.05 level, the 't' value of 29.41 was highly significant. Veeresh VG conducted a similar research. According to the study Diabetes patients were found to have inadequate knowledge, with a pre-test mean score of 12.32 and a post-test mean score of 24.67. The study was significant, with a t' value of 0.05.[8]

The present study revealed that there is no significant association between the pre-test knowledge score and demographic variables. This study was supported by a study conducted by Sangeeta M. and Raghavendra that found no significant association between the pre-interventional knowledge score and sociodemographic variables of the study patients.[9]

5. Conclusion

Diabetes mellitus is one of India's major health issues. To raise awareness about diabetes and prevent further complications, it is essential to improve diabetic patients' knowledge about self-care management and to eliminate doubts about the disease. The study demonstrates that there has been a statistically significant increase in the level of knowledge among diabetes patients following the administration of a structured teaching program.

References

[1] World Health Organization. https: //www.who. int/health-topics/diabetes#tab=tab_1 Date: 2023. Date accessed: July 16, 2023
[2] R M Anjana, R Unnikrishgnan, V Mohan et al., Metabolic non-communicable disease health report of India: the ICMR-INDIAB national cross-sectional study (ICMR-INDIAB-17): Lancet Diabetes Endocrinology 2023; 11: 474–89.
[3] SRBL Shrivastava, PS Shrivastava, J Ramasamy. Role of self-care in management of diabetes mellitus. J Diabetes Metab Disord.2013; 12: 14.
[4] Ankit Mahajan, Swarkar Sharma, Manoj K. Dhar. Risk factors of type 2 diabetes in population of Jammu and Kashmir, India. J Biomed Res.2013 Sep; 27 (5): 372–379.
[5] Saleh, F., Mumu, S. J., Ara, F. et al. Non-adherence to self-care practices & medication and health related quality of life among patients with type 2 diabetes: a cross-sectional study. BMC Public Health 14, 431 (2014). https: //doi. org/10.1186/1471-2458-14-431.
[6] Roohi Jan and Mehmooda Regu. Effectiveness of structured teaching program on selfcare of patients with diabetes mellitus. IJARCHN 2019; 1 (2): 28-37.
[7] Sreedevi K. A study to assess the effectiveness of structured Teaching Programme on self-care management of patients with type 2 Diabetes mellitus and Evaluation of prognosis in selected Hospitals. Asian J. Nursing Education and Research.2020; 10 (4): 427-431. doi: 10.5958/2349-2996.2020.00091.9
[8] Veeresh VG. Study to assess the effectiveness of planned education programme on knowledge regarding enhancing quality of life among diabetic patients. Nurse Care Open Acces J.2018; 5 (1): 39-41. DOI: 10.15406/ncoaj.2018.05.00116.
[9] Sangeeta M, Raghavendra N. S. A Study to assess the effectiveness of Planned Teaching Programme on knowledge regarding self care behaviour among people suffering from Diabetes Mellitus in selected urban health centres of Belgavi. Int. J. Nur. Edu. and Research.2019; 7 (3): 399-402. doi: 10.5958/2454-2660.2019.00090.5