



EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING MANAGEMENT OF DIABETES MELLITUS AMONG PATIENTS WITH TYPE II DIABETES MELLITUS IN A SELECTED COMMUNITY HEALTH CENTRE OF DADRA AND NAGAR HAVELI AREA.

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ABSTRACT:

Background: Diabetes is one of the incurable but easily controllable diseases. It is a chronic disease due to impaired between glucose and insulin in the body.¹ **Methods:** An evaluative research method was selected. A pre-experimental (one group pretest – posttest) design was adopted for this study. The samples for the study were 80 Patients with Type II DM which were selected by using non- probability purposive sampling technique. Pretest and Posttest score were utilized to achieve goal of the study. **Results:** Result showed that in pretest mean score was 13.02 and post-test mean score was 20.61. It Shows that there was significant difference in the mean pre-test knowledge score and mean post-test knowledge score of Patients with Type II DM on management of Diabetes as measured by ‘t’ test (21.57) which was significant at 0.05 level of significance. **Conclusion:** The study concluded that the STP was effective. Hence the patients with diabetes should be encouraged to attend health education programme.

KEYWORDS:KNOWLEDGE, STP, PATIENTS WITH TYPE II DM, DIABETES MELLITUS.

INTRODUCTION:

Diabetes is a chronic debilitating disease that affects large numbers of people of all socio-economic class throughout the world. The individual and public health burden of the disease, already of vast proportions, continues to grow despite interesting advances in the past few years in virtually every field of diabetes research and in patient care including improved treatment, protection against complications, improved lifestyles and even primary prevention of the disease (WHO, 2015). Although the disease is on the rise in both developed and developing countries, it is far greater a problem in the latter, wherein extreme cases affect 30-40% of adults as against of 2-4% in the developed countries.²

As a result diabetes has deleterious effect on the quality of life and health promoting behavior of an individual. In recent years, attempts have been made to prevent complications due to diabetes through reduction of risk factors, changes in life style behaviors and on overall improvement in quality of life by complying with their mandatory treatment regimen.³ According to WHO, World over the prevalence of adult diabetes was around 4.7% in the year 1980 and has risen to 8.5% in 2014.⁴ India is home to 69.1 million people with DM and is estimated to have the second highest number of cases of DM in the world after China in 2015.⁵ The Indian Council of Medical Research India Diabetes Study (ICMR-INDIAB study) showed that India had 62.4 million people with diabetes in 2011. These numbers are projected to increase to 101.2 million by 2030.⁶ A cross - sectional study was conducted to assess the knowledge regarding self care knowledge among diabetic patients in Warangal region, Andhra Pradesh. Four hundred and fifty six patients participated in the study using non probability convenient sampling technique. The results revealed that only 3.50 % diabetic population were with >80 %

knowledge. 29.38 % population were with 60-79 % knowledgeable, in which men with 81 (35.52%) had knowledge compared to women 53 (23.24%). They found that there is a definite need to empower patients with the knowledge required to help them obtain maximum benefit from their treatment for diabetes.⁷Diabetes education, with consequent improvement in knowledge, leads to better control of the disease, and is widely accepted to be an integral part of comprehensive diabetes care.⁸

This research aimed to assess the effectiveness of structured teaching program on knowledge regarding management of Diabetes Mellitus among Patients with Type II DM in a selected community health centre of Dadra and Nagar Haveli.

NEED OF THE STUDY:

Diabetes mellitus is a multisystem disease related to abnormal insulin production, impaired insulin utilization or both. It has emerged as one of the most challenging public health problems in the 21st century. It currently affects over 366 million people worldwide and this figure is likely to double by 2030. The greatest burden of this condition is felt in low and middle-income countries, and these nations account for about 80% of all cases of diabetes. When the disease affects these individuals, and if not properly controlled, it may lead to lifelong complications, which are generally associated with increased morbidity and mortality.¹² For instance, poorly controlled DM can cause damage to eyes (leading to blindness), kidneys (leading to renal failure), and nerves (leading to impotence and foot disorders/possibly amputation) as well as increased risk of heart disease, stroke, and poor blood supply to the limbs. Most of the complications are not only irreversible, but there are also costly to manage as they generally require management in specialized centres with sophisticated infrastructure and equipment, well trained staff and potent medications. Since most of these specialized centres are not available in many community settings, patient education becomes a central component in the prevention and control of this disease in community. Such education should lead to diet modification, increased physical exercise and lifestyle changes including the promotion of weight loss.⁹ These educational programs should help people assess their risks of diabetes, motivate them to seek proper treatment and care and inspire them to take charge of their disease.¹⁰

A descriptive study was conducted to assess the knowledge of Diabetic patients about blood glucose monitoring attending medical outpatient department in selected hospital in Punjab. The 100 diabetic patients attending medical OPD were taken as samples for the study by using Non Probability Convenient sampling technique. Data was collected using structured knowledge questionnaire. The study findings showed that 45% of the study subject had average knowledge, about 22% had good knowledge and 12 % with very good knowledge score & only 14% & 7% of them had poor knowledge respectively.¹¹

Structured teaching programme of DM has been documented in many developing countries; very few studies have been done in health centres. Consequently, this study sets out to assess the effectiveness of structured teaching program regarding management among diabetic patients living in selected health centres of Dadra and Nagar Haveli.

OBJECTIVES OF THE STUDY:

- To assess the Pretest knowledge of Patients with Type II DM on management of diabetes mellitus.
- To assess the Posttest knowledge of Patients with Type II DM on management of diabetes mellitus.
- To find out effectiveness of structured teaching programme by comparing Pretest and Posttest knowledge scores of Patients with Type II DM on management of diabetes mellitus

HYPOTHESES

The hypotheses were tested at 0.05 level of significance.

- **H₁:** There is a significant difference in the knowledge score of Patients with Type II DM on management of diabetes mellitus before and after administration of structured teaching program.
- **H₂:** There will be a significant association between pre test knowledge score on management of diabetes with their selected demographic variables.

OPERATIONAL DEFINITIONS

1. Assess :

In this study 'assess' refers to the systematic, organized and continuous process of collecting information on management of diabetes among patients with Type II DM.

2. Effectiveness:

In this study, 'effectiveness' refers to significant gain in knowledge as determined by comparing pretest - posttest scores.

3. Structured Teaching Programme:

In this study, 'structured teaching programme' refers to material prepared by the researcher to provide information on management of diabetes mellitus which includes diabetes and its Knowledge, Monitoring of Blood Glucose, Diabetes and Diet, Medication, Foot Care and Exercises.

4. Knowledge:

In this study, 'Knowledge' refers to the correct responses of diabetic patients to the items of a structured knowledge questionnaire on management of diabetes and will be categorized as inadequate, moderately adequate and adequate.

5. Patients with Type II DM:

In this study, It refers to the patients who had been diagnosed to have Type II diabetes mellitus and who are attending OPD at selected Community Health Centre of Dadra and Nagar Haveli.

DELIMITATIONS

The study is delimited to:

- ❖ Patients with Type II DM above the age of 18 years.
- ❖ People who can speak and understand Hindi and Gujarati.
- ❖ Selected Community Health Centre in Dadra and Nagar Haveli.

CONCEPTUAL FRAMEWORK:

Conceptual framework refers to the interrelated concepts or abstractions that are assembled together in some rational scheme by virtue of their relevance to a common theme. The overall objective of the framework is to make scientific findings meaningful and generalizable.²¹ Conceptual framework adopted in the present study was modified general system theory by **Ludwing Von Bartalanffy (1968)**.

The reviewed publications have been organized and presented as follows:

1. Studies related to prevalence of Type II diabetes mellitus in world and India.
2. Studies related to knowledge regarding management of diabetes mellitus
3. Studies related to effectiveness of structured teaching programme on Management of diabetes mellitus.
4. Studies related to diabetic foot ulcer.
5. Studies related to effect of diet and exercise on diabetes.

RESEARCH METHODOLOGY:

Pre- experimental study was conducted in Community Health Centre of Dadra Nagar Haveli. Community Health Centre was previously served as Primary Health Centre. In 2016 it was upgraded as Community Health Centre. Approximately 100 patients with Type II Diabetes Mellitus are coming for follow up at the interval of 15 days. Samples were selected by purposive sampling during January, 2018 and patients with Type II Diabetes Mellitus attending OPD were included as study population. After written consent from each study respondents, data was collected from 80 study subjects who were participated in study. Structured interview schedule method was used to collect data from study respondents by utilizing structured knowledge questionnaire that includes demographic characteristics as well as knowledge variables related to management of Diabetes Mellitus. The response with right or correct answer was marked as knowledge score '1' and with don't know or wrong scored as '0' for variables under study.

The maximum and minimum knowledge score was obtained and respondents were categorized into inadequate, moderately adequate and adequate knowledge quality. Knowledge variable and demographic characteristics frequency percentage distribution of study subjects were done and Chi-square test was applied to find out statistical association between knowledge and demographic characteristics.

RESULTS:

Table I: Pretest Knowledge of Patients with Type II Diabetes Mellitus Regarding Management of Diabetes Mellitus.

n =80

Area	Items	Mean	Mean %	S. D.
General Knowledge on Diabetes	8	3.22	40.38	1.33
Blood Glucose Monitoring	4	1.5	37.5	0.9
Diabetes and Medication	5	1.32	25.8	0.84
Diabetes and Diet	9	2.91	32.33	1.43
Diabetes and Exercise	5	1.36	27.2	0.71
Diabetes and Foot Care	9	2.7	31	1.31
Over all	40	13.02	32.55	3.44

The table I shows, maximum mean percentage obtained by the Patients with Type II DM is 40.38. with standard deviation of 1.33 in 'General knowledge on Diabetes' and the minimum mean percentage is 25.8 with standard deviation of 0.84 in 'Diabetes and Medication'. The mean percentage of overall knowledge obtained by the Patients with Type II DM in Pretest is 32.55 with standard deviation of 3.44.

Table II: Area Wise Mean, Mean Percentage and Standard Deviation in Posttest Knowledge Score.

n = 80

Area	Items	Mean	Mean %	S. D.
General Knowledge on Diabetes	8	4.76	59.5	1.03
Blood Glucose Monitoring	4	1.9	47.5	0.7
Diabetes and Medication	5	1.96	39.2	0.81
Diabetes and Diet	9	4.68	52.11	1.40
Diabetes and Exercise	5	2.4	48	0.73
Diabetes and Foot Care	9	4.9	54.44	1.28
Over all	40	20.61	51.53	3.29

The above table indicates that the maximum mean percentage obtained by the Patients with Type II DM is 59.5 with standard deviation of 1.03 in 'General knowledge on Diabetes' and the minimum mean percentage is 39.2 with standard deviation of 0.81 in 'Diabetes and Medication'. The mean percentage of overall knowledge obtained by the Patients with Type II DM in Pretest is 51.53 with standard deviation of 3.29

Table III: Evaluation of the Effectiveness of Structured Teaching Programme Regarding Management of Diabetes Mellitus.

n = 80

Knowledge score	Mean	Mean difference	S. D.	Paired 't' test value	Df	Table value of 't' test	Level of Significance (p value)
Pretest	13.02	7.59	3.44	21.57*	79	1.994	0.05
Posttest	20.61		3.29				

*Significant at 0.05 level of significance.

The Data presented in Table-II showed that the mean Pretest score **13.02** on level of knowledge regarding management of diabetes is lower than the posttest score **20.61**, with the mean difference of **7.59**. The obtained mean difference was found to be statically significant as evident from paired 't' value ($t_{t79, 0.05} = 21.57 > 1.994$). This shows that the obtained mean difference was a true difference and not by chance. Hence it can be inferred that the structured teaching programme was effective for improving the knowledge regarding management of diabetes mellitus.

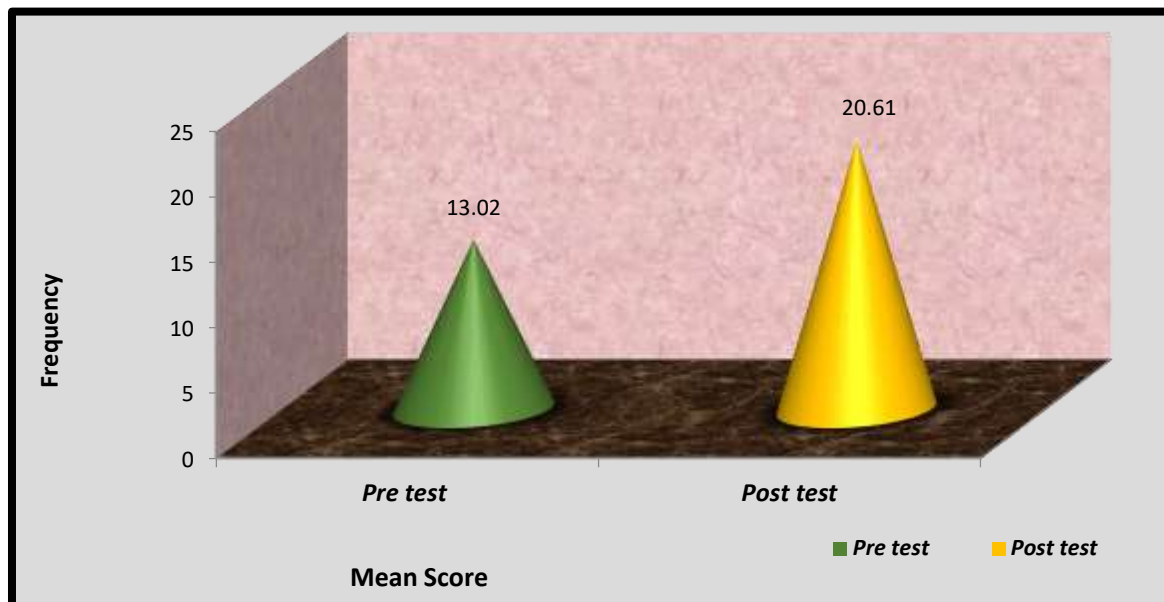


Figure 1: Diagrammatic Presentation of Pretest Mean and Posttest Mean Score of Patients with Type II DM on Management of Diabetes Mellitus.

Table III. Association between Pretest Knowledge Score Regarding Management of Diabetes Mellitus among Patients with Type II Diabetes Mellitus with the Selected Baseline Characteristics

n = 80

Baseline Characteristics	≤ 13	> 13	Calculated value	Table value	df	Significant
Age in years						
18 – 28	0	0	8.25*	7.82	3	S
29 – 38	6	4				
39 – 48	20	7				
49 – 58	6	13				
≥ 59	13	11				
Food Habit						
Vegetarian	11	19	7.48*	3.84	1	S
Lacto-ovo Vegetarian	0	0				
Non-Vegetarian	34	16				

*Significant at 0.05 level.

The data is presented in table 8 showed that there was significant association between Knowledge and baseline characteristics; Age ($\chi^2_{(3,0.05)} = 8.25 > 7.82$), food habits ($\chi^2_{(1,0.05)} = 7.48 > 3.84$). Thus it can be interpreted there was significant association between knowledge on Diabetes mellitus and selected baseline characteristics on relation to age and food habits. There was no significant association between knowledge and baseline characteristics.

DISCUSSION:

In present study, More than half of the Patients with Type II DM (61.25%) were male is similar in the study of G Vijayakumar, R Arun, VR Kutty (2009) men was 16.5 percent and among women, 13.5 percent. It has been reported that diabetes affects both sex equally. The findings of this study may be either due to smaller sample size or the assumption that males utilize the health facilities than females.¹²

The findings of the study revealed that there was a significant difference between the pretest and posttest knowledge score ($t_{(79, 0.05)} = 21.57 > 1.994$). This is similar in the study of J.M. Jerlin (2014), a study on the effectiveness of structured teaching programme on knowledge regarding prevention of foot ulcer among patients with diabetes mellitus in Kanyakumari. The study results revealed that Posttest mean score 160.37 was higher than the Pretest mean 43.60. The mean difference was 116.77 and obtained paired 't' value 63.34 ($p < 0.001$) was highly significant.¹³

CONCLUSION:

The study can be concluded that structured teaching programme can be given to any patient irrespective of gender, education, occupation, marital status, area of residence. The effectiveness of structured teaching programme established could be used as illustrative informational mode to student nurses, staff nurses, relatives and Diabetic patients.¹⁴

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