RESEARCH PAPER

An investigational study to find out efficacy of a structured educational programme on knowledge and practices regarding lifestyle modifications for diabetic mellitus in selected rural area of Pune district Maharashtra

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ABSTRACT

This research study was carried out to assess the efficacy of a structured educational programme on diabetic mellitus lifestyle modification among rural area in Pune district of Maharashtra. The study's goals were (A) To evaluate the current state of Diabetic mellitus knowledge and Practice. (B) To assess how well a structured educational programme has taught rural area in selected rural area of Pune district about how to improve their knowledge and practice about lifestyle modification. (C) To determine the relationship between selected demographic characteristics with knowledge and practice about lifestyle modification. 110 sample were used in this investigational study, which was conducted in a chosen rural Pune district of Maharashtra. The researcher used a non-probability sampling technique. In the Pune district of Maharashtra, a chosen rural area's level of knowledge and practice regarding lifestyle modification for people with diabetic mellitus was evaluated using standardized questionnaires. The paired "t test," an inferential statistical method, was employed to evaluate the gathered data.

Prior to and following a structured educational program on diabetic mellitus and lifestyle modification, the mean score was 11.25 and 25.71 in terms of knowledge; the mean difference was 14.46; the pre- and post-test standard deviations were 1.32 and 1.12; the t value was 89.47. At the 0.000 level of significance, it was determined that the intended educational program on diabetic mellitus lifestyle modification was successful in educating the rural populace in a selected rural area in Maharashtra of Pune district.

The average score before and after the implementation of the structured educational programme on lifestyle modification practices was 10.84 and 23.25, respectively. The mean difference observed was 12.41, and the standard deviations for the pre-test and post-test were 1.16 and 2.06, respectively. The computed t-value was 59.90 with a significance level of 0.000. It is concluded that the structured educational programme regarding lifestyle modification practices for diabetic mellitus was effective among the selected rural area of Pune district in Maharashtra.

KEYWORDS: Efficacy, Structured educational programme, Knowledge, Practice life style modification

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Introduction

A class of metabolic disorders known as diabetic mellitus is typified by hyperglycaemia, or increased blood glucose levels, which can be caused by deficiencies in either insulin secretion, insulin activity, or both. The disease's primary underlying causes are genetic and environmental factors, including urbanization and industrialization; longer lifespans; and changes in lifestyle, including a traditional active, healthy lifestyle, sedentary, stressed lifestyle, and excessive consumption of foods high in energy density. Different communities have varying rates of diabetes mellitus because of genetic susceptibilities and sociocultural risk factors, including dietary changes, obesity, physical inactivity, and possibly variables related to intrauterine development.

The prevalence of diabetic mellitus is rising worldwide. A new case of diabetic mellitus is diagnosed every 21 seconds. Between 40 and 70 percent of people have foot problem. Diabetic mellitus can cause a number of dangerous side effects, including blindness or renal failure this problem are causing life-threatening situation.

India, known as the "diabetes capital" of the world, has the highest number of people with diabetic mellitus worldwide. Over the past 25 years, It has developed a pandemic, especially in metropolitan regions. India had about 31.7 million people in 2000 and by 2030, that number is predicted to rise to 79.4 million. A price we pay for progress, urbanization, fast-paced living, rapid globalization, and industry is likely the rising frequency of Diabetic mellitus.

Patients with diabetic mellitus cannot be cured, but they can manage their condition with medication, nutrition, and regular exercise. Drugs used consistently and appropriately can produce the intended results, manage diabetic mellitus, and avert its consequences. Those with diabetic mellitus who were either misdiagnosed or not receiving proper treatment experienced a number of issues that ultimately led to hospitalization. The evaluation of lifestyle modification in diabetic mellitus patient makes it abundantly evident that increasing physical activity is necessary since a sedentary lifestyle raises the chance of developing diabetic mellitus. This claim is further corroborated by another study that found a 6% decrease in the risk of diabetes mellitus for every 500kcal increase in energy expenditure.

A significant step being taken to enhance current care of diabetic mellitus is the adjustment of the patient's lifestyle i.e Lifestyle modification. It covers nutrition treatment, physical exercise, counselling for quitting smoking, diabetic self-care support, and psychosocial care. Interventions that increase patient' knowledge and practice of diabetic mellitus are becoming more and more important. Comprehending daily self-care practices is essential for the management of diabetic mellitus to achieve the desired outcomes.

OBJECTIVES OF THE STUDY:

1.To evaluate the degree of lifestyle modification knowledge and practice currently held by individuals with diabetic mellitus.

2.To assess the efficacy of a structured educational program on the knowledge and practices related to lifestyle modification in patients with diabetes mellitus.

3.To determine the relationship between a patient chosen demographic variable and their knowledge test result for diabetic mellitus.

HYPOTHESES:

H0: The mean score on the post-test will not increase over the mean score on the pre-test.

H1: The mean score of the post-test exceeded that of the pre-test.

H2: There will be a significant association between pretest level of knowledge with these selected demographic variables.

Dependent Variable: The dependent variable examined in this study was the understanding and implementation of lifestyle modifications among patients with diabetic mellitus in a selected rural area of Maharashtra.

Independent Variable: The independent variable for the present study was structured educational programme on lifestyle modification among diabetic mellitus patients.

MATERIALS AND METHODS:

Diabetic mellitus patient knowledge and practice about lifestyle modification was evaluated using a quantitative study methodology. Using an appropriate non-probability sampling technique, 110 patients in total were chosen for a quasi-experimental one-group pre-test and post-test design. Selected Primary Health Care in selected rural area of Pune district served as the study's site. A structured questionnaire was used to gather the data. Each sample received an explanation of the study's goal and methodology. Prior to the tool's administration, written informed consent was obtained from each patient. The pre-test took the patient, on average, 30 minutes to finish. Following that, a systematic 45-minute instructional program was held. On the seventh day of the pre-test, the post-test was administered. Using descriptive and inferential statistics, the gathered data was examined and evaluated with the use of SPSS software.

CRITERIA FOR SAMPLE SELECTION

 Inclusion Criteria

1.Newly diagnosed diabetic mellitus patient registration done under NCD clinic.

2.Patient available during the period of data collection.

3.Patient who can read or write Marathi.

 Exclusion Criteria

1.People who decide not to take part in the study.

2.Critically ill patients.

3.Patient with other co-morbidity.

Description of tool

Section I – Demographic Data

Demographic variables which include age, sex, religion, marital status, educational qualification, income per month, previous information .

Section II – Structured Knowledge questionnaire

The knowledge questionnaire developed by the investigator consists of 32 multiple choice questions regarding lifestyle modification of diabetic mellitus patient. Every question has a 1 mark for a correct response and a 0 for an incorrect response.

Section III- Structured practice questionnaire The practice questionnaire developed by the investigator consists of 29 check list questions regarding self care practice among lifestyle modification of diabetic mellitus patient . Every question has a 1 mark for a correct response and a 0 for an incorrect response.

Section IV: Structured educational Programme

This research tool was validated by experts in a variety of fields, and the researcher collaborated with the guide to discuss their suggestions.

Variable	Category	Frequency	Percentage
Age	Below 40	6	5.45
	41-50	46	41.82
	51-60	38	34.55
	Above 60	20	18.18
Sex	Male	56	50.91
	Female	54	49.09
Marital status	Single	4	3.64
	Married	75	68.18
	Widow/Widower	30	27.27
	Separated	1	0.91
Religion	Hindu	60	54.55
	Muslim	11	10.00
	Christian	2	1.82
	Buddhist	34	30.91
	Other	3	2.73
Educational Qualification	Primary education	20	18.18
	Secondary Education	64	58.18
	Higher education	12	10.91
	Graduate	4	3.64
	Other	10	9.09
Income per month	Below 10000	13	11.82
	10000-20000	71	64.55
	20000-30000	21	19.09
	Above 30000	5	4.55
Previous information about diabetic mellitus	Yes	27	24.55
	No	83	75.45

Table -2: Assess the existing level of knowledge regarding lifestyle modification of diabetic mellitus patient.

SR NO	LEVEL OF KNOWLEDGE	NUMBER OF RESPONDENT (n)	PERCENTAGE

			%
	Inadequate knowledge (0-11)	73	66.36
	Moderate knowledge (12-22)	37	33.64
	Adequate knowledge(23-32)	0	0.00

According to table 2, the majority of diabetic mellitus patient knew adequate knowledge about lifestyles modification; 66.36% of them inadequate knowledge , 33.64% knew moderate , and 0% adequate.

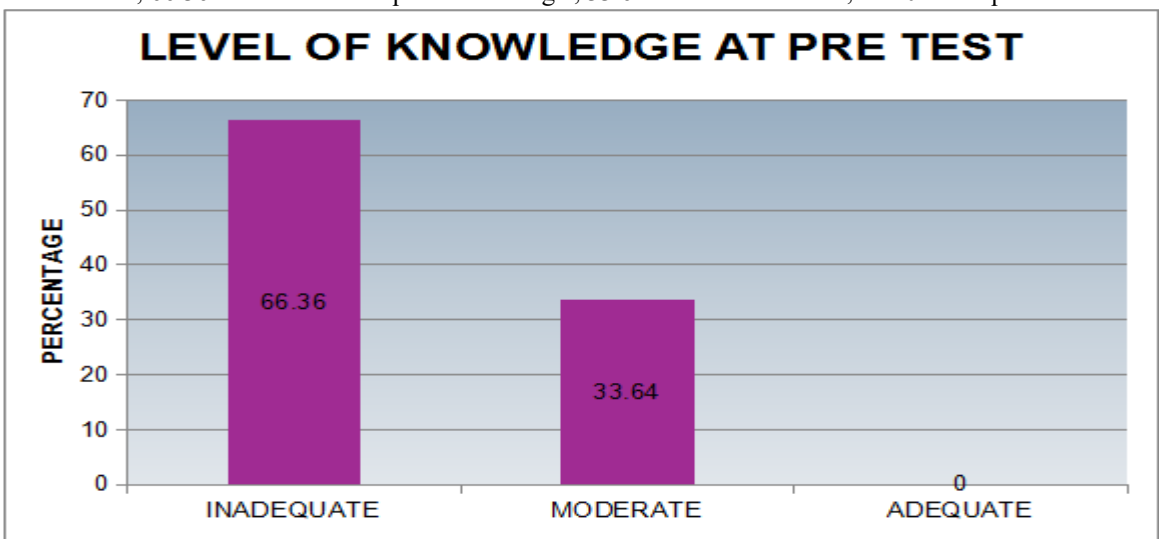

Table 3: Assess the existing practices related to lifestyle modifications for patient with diabetic mellitus.

SR NO	LEVEL OF RESPONDENT	FREQUENCY (n)	PERCENTAGE (%)
1	Inadequate practice (0-10)	64	58.18
2.	Moderate Practice (11-20)	46	41.82
3.	Adequate practice (21-29)	0	0.00

Table 3 shows that The majority of diabetic mellitus patient knew very little about lifestyles modification; 64% of them inadequate practice, 46% knew moderate, and 0% adequate Finding according to effectiveness of planned educational programme:

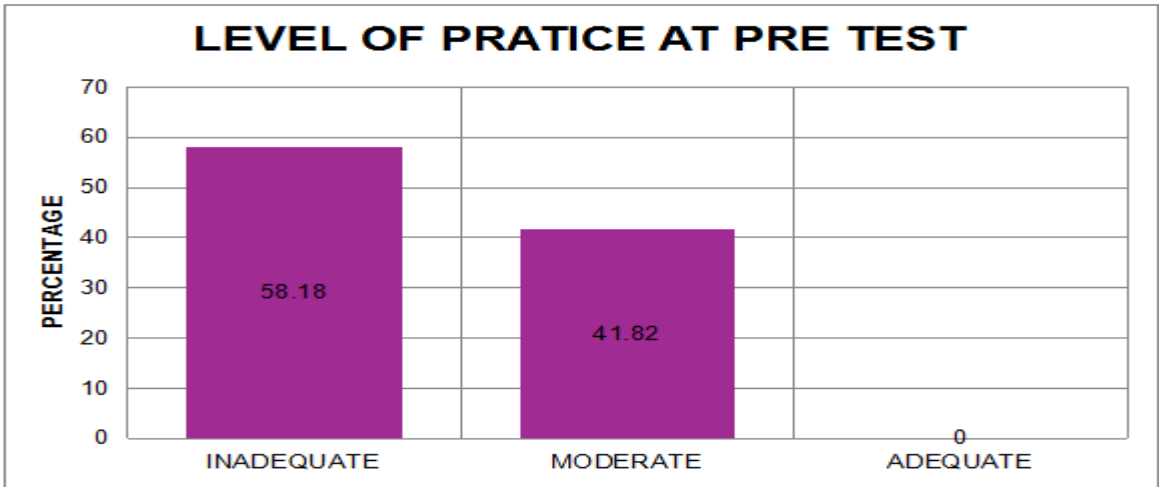

Table- 4:.Evaluate the structured educational programme efficacy in helping patient with diabetic mellitus comprehend the lifestyle modification that are required.

	Inadequate knowledge		Moderate knowledge		Adequate knowledge		Mean (SD)	Mean different	T value	P value
	N	%	N	%	N	%				
Pre intervention	73	66.36	37	33.64	0	0.00	11.25(1.32)	14.46	89.47	0.000
Post Intervention	0	0.00	0	0.00	110	100	25.71(1.12)			

Table 4. Demonstrates that the study population's mean knowledge score prior to interventions was 11.25. This was determined to be 25.71 following intervention. The knowledge mean score showed a change of 14.46, which was determined to be statistically significant. With a p-value of less than 0.000, the computed 't' value of 89.47 surpasses the tabulated value of 0.000, indicating a significant level.

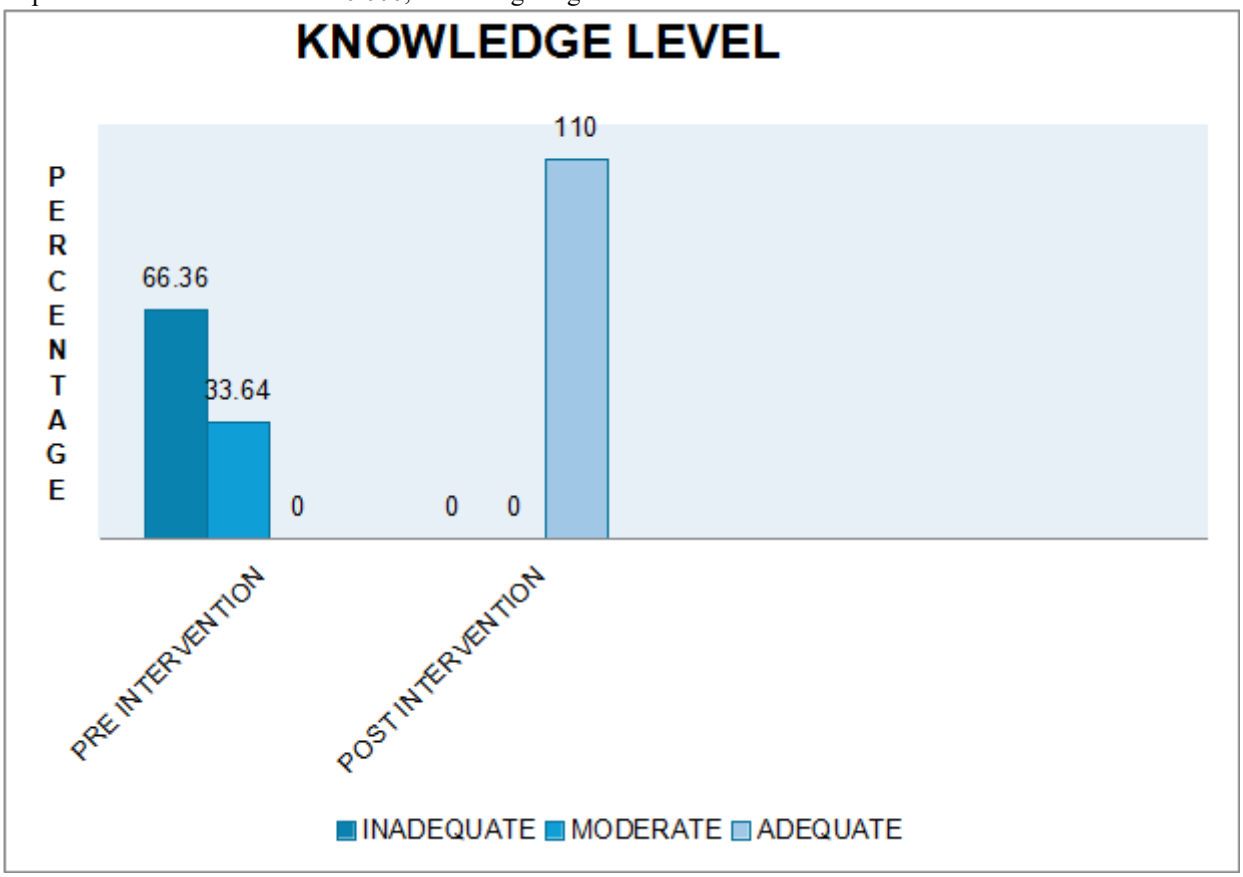

Table- 5: Evaluate how the Structured educational Program influences lifestyle modification practice for patient with diabetic mellitus.

	Inadequate practice		Moderate Practice		Adequate practice		Mean (SD)	Mean different	T value	P value
	N	%	N	%	N	%				
Pre intervention	64	58.18	46	41.82	0	0.00	10.84(1.16)	12.41	59.90	0.000
Post Intervention	0	0.00	21	19.09	89	80.91	23.25(2.06)			

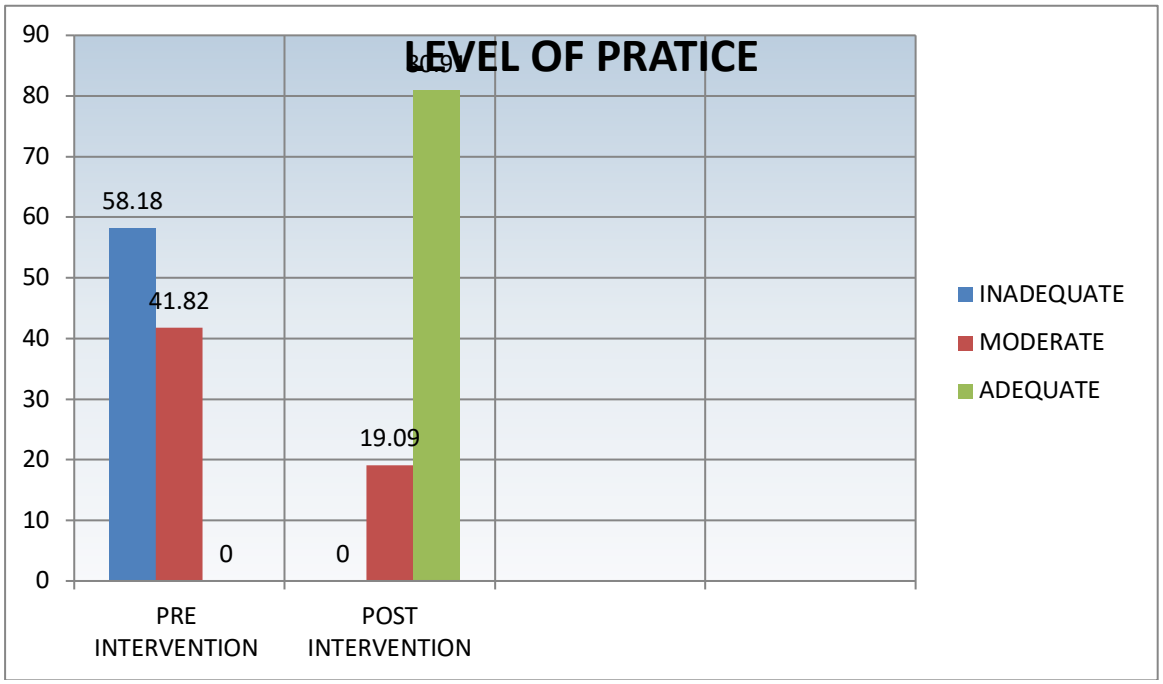

Table 5. Demonstrates that the study population's mean practice score prior to interventions was 10.84. This was determined to be 23.25 following intervention. The knowledge mean score showed a change of 12.41, which was determined to be statistically significant. With a p-value of less than 0.000, the computed 't' value of 59.90 surpasses the tabulated value of 0.000, indicating a significant level.

These results unequivocally demonstrate the effectiveness of the structured teaching program for diabetic mellitus patient lifestyle modification in selected rural area of Pune district of Maharashtra.

As a result, the null hypothesis was dismissed, and the alternative hypothesis was accepted with a significance level of 0.0000.7

Findings related to association between demographic variables and pre test of knowledge of lifestyle modification on diabetic mellitus patient in selected rural area Pune district of Maharashtra.

Chi-square analysis was used to ascertain the relationship between the pretest score and Selected demographic variables. The findings demonstrated that the demographic variables—age, sex, religion, marital status, educational attainment, monthly income, occupation, food type, lifestyle pattern, prior information, and knowledge source did not significantly correlate with the knowledge score.

DISCUSSION:

The pre-test results of the current research study showed that 73(66.36%) of the diabetic mellitus patient had inadequate knowledge, 37(33.64%) had moderate information, , and 0.00% had adequate knowledge about lifestyle modification. 110 (100%) had adequate knowledge on the post-test. The study population's mean pre-intervention knowledge score was 11.25. This was discovered to be 25.71 following the intervention. A statistically significant change of 14.46 in the knowledge mean score was noted. At the $p<0.000$ level, the estimated "t" value of 89.47 is greater than the table value at the significant level. These results unequivocally show the effectiveness of the structured teaching program on lifestyle modification on diabetic mellitus patient in selected rural area of Pune district of Maharashtra .

The pre-test results of the current research study showed that 64(58.18%) of the diabetic mellitus patient had inadequate practice, 46(41.82%) had moderate practice, , and 0.00% had adequate practice about lifestyle modification.21(19.09%) had moderate Practice while 89 (80.91%) had adequate practice on the post-test. The study population's mean pre-intervention practice score was 0.84. This was discovered to be 23.25 following the intervention. A statistically significant change of 12.41 in the practice mean score was noted. At the $p<0.000$ level, the estimated "t" value of 84.44 is greater than the table value at the significant level. The findings clearly indicate that the structured educational program successfully alters the lifestyle modification of patient living with diabetic mellitus.

Ranijeyasudha M., Archana, and Jeenath Justin Doss. K. (2020) conducted a study to evaluate the effects of structured teaching programs on knowledge about lifestyle modifications for diabetes mellitus in rural communities of specific areas in Rajkot, further supporting this research. The study involved a sample of 40 participants, selected through non-probability convenient sampling techniques. The structured teaching program aimed at enhancing knowledge and

promoting lifestyle changes related to diabetes mellitus proved effective in rural populations, as indicated by mean scores of 7.12 prior to the program and 14.18 following its implementation. The observed mean difference was 7.06, with standard deviations of 3.763 and 4.997 for the pre and post-tests, respectively. The calculated t value was 7.127* with 39 degrees of freedom at a significance level of 0.00001.

CONCLUSION:

The present research study found that the structured educational program was successful in raising the diabetic mellitus patient in selected rural area of Maharashtra knowledge and practice about lifestyle modification.

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