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Research Article

EFFECTIVENESS OF SELF MANAGEMENT PROGRAMME ON LIFE STYLE MODIFICATIONS AMONG PATIENTS WITH TYPE II DIABETES MELLITUS

VeeramReddy Thejaswi*[1]., Latha A[2]., Arumugam Indira[3] and Radhika M[4]

[1,2]Department of Medical Surgical Nursing, Narayana College of Nursing, Nellore, India
[3]Narayana College of Nursing, Nellore, Andhra Pradesh, India
[4]Department of Child Health Nursing, Narayana College of Nursing, Nellore, India

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ABSTRACT

Introduction: Diabetes mellitus, particularly type II, is a major public health concern worldwide. The International Diabetes Federation (IDF) reports that as of 2013 there were more than 382 million people living with diabetes mellitus. Adults ages 40 to 59 comprise the world's age group with the highest diabetes rates, although this is expected to shift to adult's ages 60 to 79 by 2030.
Objective: To evaluate the effectiveness of self management programme on life style modification and blood sugar levels among patients with Type II diabetes mellitus.
Material and methods: A Quantitative study was conducted in Narayana Medical College Hospital, Nellore, Andhra Pradesh state (India) from 3-2-15 to 4-3-15.The study sample included 60 patients with Type II diabetes mellitus were selected by using Non probability Convenience sampling technique.
Results and discussion: The results reveal that with regard to effectiveness of self management programme on life style modification in experimental group the mean is 55 with standard deviation 7.66 . The calculated value is 1.89 greater than the tabulated value 1.69 at P<0.05.With regard to blood sugar levels, the mean of FBS is 104.6 mg/dl with standard deviation 12.5 and the PPBS mean is 173.5 mg/dl with standard deviation 12.8. The calculated value for FBS is 1.72 and PPBS is 3.08 is greater than the tabulated value 1.69 at P<0.05. The above result indicates that self management programme on life style modifications and blood sugar levels are more effective to change the life style pattern among patients with type II diabetes mellitus.
Conclusion: The study concludes that the self management programme on life style modifications was statistically significant and effective in changing the life style pattern and reducing blood sugar levels among patients with Type II diabetes mellitus.

INTRODUCTION

Diabetes mellitus is a chronic multisystem syndrome related to abnormal insulin production, impaired insulin utilization or both. Type II diabetes is the most common form of diabetes, accounting for 90 - 95% of cases. Type II diabetes is thought to result from a combination of genetic factors along with lifestyle factors, such as obesity, poor diet pattern, stress, and being sedentary.[1]

Diabetes mellitus can be only controlled by regulating diet, exercise, medication, monitoring blood glucose levels, maintenance of hygiene and by making adjustments in life style. These patients required health teaching and regular follow-up to maintain healthy active life. Type II diabetes mellitus can be effectively controlled by simple means, such as lifestyle modifications. Pharmacological interventions are not always necessary to control diabetes, but emphasis should also be given to non-pharmacological management. [2]

Lifestyle modifications (changes in day-to-day habits) are an essential component of diabetes management plan. Lifestyle modifications can be a very effective way to keep diabetes in control. Self management programme focus on a group of intervention programme such as diet, exercises, self blood glucose monitoring, spirituality, stress management, medications and follow up to improve the quality of life.[3]

Need For the Study

National Diabetes Fact Sheet, (2011) report states that World wide, 18.8 million people are diagnosed with Diabetes. The

*Corresponding author: *VeeramReddy Thejaswi*
Department of Medical Surgical Nursing, Narayana College of Nursing, Nellore, India

World Health Organization (WHO) estimates that 90 percent of people around the world suffer from type II diabetes mellitus.[4]

As per the International Diabetes Federation (2013), approximately 50% of all people with diabetes live in just three countries: China (98.4 million), India (65.1 million) and the USA (24.4 million). In India with more than 62 million diabetic individuals currently diagnosed with the disease. According to Indian Diabetes Federation, in 2013, the prevalence of diabetes in Andhra Pradesh state is 24% and Hyderabad is 17%.[5]

As parallel with the DM one more non communicable disease like hypertension is also having high prevalence the study results are depicted in the study conducted by Katari Kantha and Arumugam Indira.[6] The people can self manage themselves by taking future food like spirulina.[7]

Objectives

1. To assess the life style pattern and blood sugar levels among patients with Type II diabetes mellitus.
2. To evaluate the effectiveness of self management programme on life style modification and blood sugar levels among patients with Type II diabetes mellitus in experimental group.
3. To compare the effectiveness of self management programme on life style modification and blood sugar levels among patients with Type II diabetes mellitus in experimental group and control group.
4. To find out the association between the effectiveness of self management programme on life style modifications and blood sugar levels among patients with Type II diabetes mellitus with their selected socio demographic variables in experimental group and control group.

MATERIALS AND METHODS

Research Approach

A Quantitative Research Approach was utilized for this study.

Research Design

Quasi Experimental Non equivalent control group design was adopted for this study.

Setting of the Study

The study was conducted in Narayana Medical College Hospital Nellore, Andhra Pradesh.

Sample

Samples are patients with Type II Diabetes Mellitus above 35 yrs of age admitted in general medicine and endocrinology wards.

Sampling Method

Non probability Convenience- sampling technique was used to select the subjects.

Ethical Clearance

Ethical clearance was obtained from the Institutional Ethical committee of Narayana Medical College Hospital, Nellore.

Pilot study

Pilot study was conducted in Narayana Medical College and Hospital at Nellore, Andhra Pradesh. From 2-1-15 to 1-2-15. After obtaining permission from the Director, Medical Superintendent and HOD of General Medicine and Endocrinology, consent was obtained from study participants, samples were selected by using convenience sampling technique. Data was collected by using life style assessment tool and blood sugar levels (FBS and PPBS) to assess the life style pattern and FBS and PPBS blood sugar levels among patients with Type II diabetes mellitus.

Data Collection Procedure

After getting permission from Director, Medical Superintendent, HOD, General Medicine and Endocrinology Department and Nursing Superintendent and consent was obtained from study samples, data collection procedure was carried out for a period of 6 weeks from 3/2/15 to 4/3/15.The sample consists of patients with type II diabetes mellitus and convenience sampling was used to select the samples. The time scheduled for data collection was from 7:30 am to 7 pm. Socio demographic data and life style assessment tool and acuchek glucometer were used to collect the data.

Data Analysis

The data was analyzed in terms of objectives of the study by using descriptive statistics and inferential statistics.

Descriptive Statistics

Mean, frequency, percentage and standard deviation.

Inferential Statistics

Independent t- test and paired t-test was used to assess the effectiveness of Self Management Programme on life style modifications and blood sugar levels among patients with type II diabetes mellitus.

chi –square test was used to find out the association between the effectiveness of Self Management Programme on life style modifications and blood sugar levels among patients with type II diabetes mellitus with their selected socio demographic variables.

RESULTS AND DISCUSSION

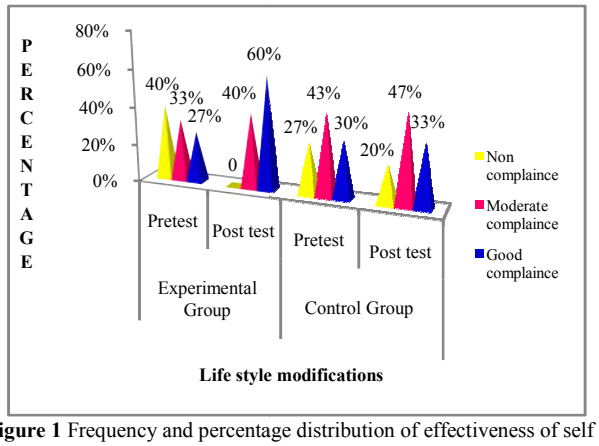

Figure 1 Frequency and percentage distribution of effectiveness of self management programme on life style modifications among patients with Type II diabetes mellitus.

Figure 1 shows that in experimental group, with regard to life style modifications during pretest 12(40%) had non compliance, 10(33%) had moderate compliance and 8(27%) had good compliance to life style modifications. In post test there was no non compliance, 12(40%) had moderate compliance and 18(60%) had good compliance to life style modifications.

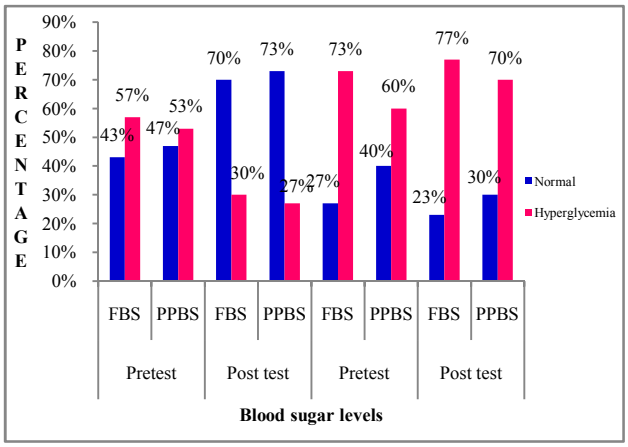

Figure 2 Frequency and percentage distribution of effectiveness of self management programme on blood sugar levels among patients with Type II diabetes mellitus.

Figure 2 shows that in experimental group, the pretest FBS is normal to13 (43%) and hyperglycemia to 17(57%). PPBS is normal to 14(47%) and hyperglycemia to 16(53%). Where as in post test FBS is normal to 21(70%) and hyperglycemia to 9(30%). PPBS is normal to 22(73%) and hyperglycemia to 8(27%).

Table 1 Comparison of mean and standard deviation on life style modifications with the post test scores among patients with Type II diabetes mellitus (N=60)

Criteria	Mean	Standard deviation(SD)	Independent t- test
Experimental group	55	7.66	**C=1.89 t=1.69 S P < 0.05**
Control group	44.9	8.2	

S = significant P < 0.05 df $_{(n-1)}$ =29

Table 1 shows that in experimental group the post test mean is 55 with standard deviation 7.66 whereas in control group the mean is 44.9 with standard deviation 8.2. The calculated value is 1.89 which value is greater than the tabulated value 1.69 at P<0.05. It reveals that the self management programme on life style modifications is more effective to change the life style pattern among patients with type II diabetes mellitus.

Table 2 Comparison of mean and standard deviation on blood sugar levels with the post test scores among patients with Type II diabetes mellitus. (N=60)

Criteria	Experimental post test		Control group post test		Independent t- test
	Mean mg/dl	SD	Mean mg/dl	SD	
FBS	104.6	12.5	134.3	30	**C=1.72 t=1.69 S P < 0.05**
PPBS	173.5	12.8	210.3	35.2	**C= 3.08 t=1.69 S P < 0.05**

S = significant P < 0.05 df $_{(n-1)}$ =29

Table 2 shows that in experimental group the post test mean of FBS is 104.6 mg/dl with standard deviation 12.5 whereas in control group the FBS mean is 134.3 mg/dl with the standard deviation 30. In experimental group, the PPBS mean is 173.5 mg/dl with standard deviation 12.8 whereas in control group the PPBS mean is 210.3 mg/dl with the standard deviation 35.2. The calculated value for FBS is 1.72 and PPBS is 3.08 which is greater than the tabulated value is 1.69 at P < 0.05.The result reveals that self management programme is more effective to change the blood sugar levels among patients with type II diabetes mellitus.

Table 3 Comparison of mean and standard deviation of pretest and post test scores on life style modifications among patients with Type II diabetes mellitus in experimental group and control group. (N=60)

Criteria	Pre test		Post test		Paired t-test
	Mean	SD	Mean	SD	
Experimental Group	43.5	8.89	55	7.66	**C= 8.02 t=2.75 S P<0.05**
Control group	42.2	8.6	44.9	8.2	**C= 0 t=1.69 N.S P<0.05**

S = significant P < 0.05 df $_{(n-1)}$ =29

Table 3 shows that in experimental group, the pre test the mean is 43.5 with standard deviation 8.89 whereas in the post test mean is 55 and standard deviation is 7.66, calculated value is 8.02 which is greater than the tabulated value 2.75. In control group, the pre test mean is 42.2 with standard deviation 8.6 whereas in the post test mean is 44.9 with standard deviation 8.2.The calculated value is 0 which is less than the tabulated value 1.69 at P< 0.05.There is significant change in life style pattern.

Table 4 Comparison of mean and standard deviation of pretest and post test scores of blood sugar levels among patients with Type II diabetes mellitus. (N=60)

Group	Criteria	Pre test		Post test		Paired t- test
		Mean (mg/dl)	SD	Mean (mg/dl)	SD	
Experimental Group	**FBS**	113.4	21.23	104.6	12.5	**C= 4.03 t=2.75 S P<0.05**
	PPBS	182.1	22.8	173.5	12.8	**C= 3.68 t=2.75 S P<0.05**
Control Group	**FBS**	136.6	36.1	134.3	30	**C=0.49 t=2.75 NS P<0.05**
	PPBS	217.3	43.9	210.3	35.2	**C= 1.6 t=2.75 NS P<0.05**

S = significant P < 0.05 df (n-1) =29

Table 4 shows that in experimental group, the pre test mean for FBS is 113.4 mg/dl and standard deviation is 21.2 With regard to PPBS the mean is 182.1 mg/dl with standard deviation 22.8 whereas in the post test, the FBS mean is 104.6 mg/dl with standard deviation 12.5, the PPBS mean is 173.5 mg/dl with

standard deviation 12.8. The calculated value for FBS is 4.03 and PPBS is 3.68 which is greater than tabulated value 2.75.

In control group, the pre test mean for FBS is 136.6 mg/dl with standard deviation 36.1. With regard to PPBS, the mean is 217.3 mg/dl with standard deviation 43.9.Whereas in post test, the FBS mean is 134.3 mg/dl with standard deviation 30 and PPBS mean is 210.3 mg/dl with standard deviation 32.2. The calculated value for FBS is 0.49 and PPBS is 1.6 which is less than the tabulated value 2.75 at P< 0.05 (df=29) that the blood sugar level is under control.

The above result indicates that self **management programme is effective in changing the life style pattern and blood sugar levels among patients with Type II diabetes mellitus.**

Association between the effectiveness of self management programme on life style modifications in experimental group: There is statistically significant association between age, diet, co-morbid diseases with life style modifications at P < 0.05 level of significance. There is no statistically significant association between life style modifications with sex, education, occupation, income, religion, marital status, family type, residence, BMI, hobbies, habit of smoking, habit of alcohol, medications at P<0.05.

Association between the effectiveness of self management programme on life style modifications in control group: There is statistically significant association between diet and co-morbid diseases with life style modifications at P < 0.05 level of significance. There is no statistically significant association between life style modifications with age, sex, education, occupation, income, religion, marital status, family type, residence, BMI, habit of smoking, habit of alcohol consumption, hobbies, medications.

Association between the effectiveness of self management programme on FBS blood sugar levels in experimental group: There is statistically significant association between diet and habit of alcohol consumption with FBS blood sugar levels at P < 0.05 level of significance. There is no statistically significant association between FBS blood sugar levels with age, sex, education, occupation, income, religion, marital status, family type, residence, BMI, habit of smoking, hobbies, co-morbid diseases, medications at P < 0.05

Association between the effectiveness of self management programme on PPBS blood sugar levels in experimental group: There is statistically significant association between diet and habit of alcohol consumption with PPBS blood sugar levels at P < 0.05 level of significance. There is no statistically significant association between PPBS blood sugar levels with age, sex, education, occupation, income, religion, marital status, family type, residence, BMI, habit of smoking, hobbies, co-morbid diseases, medications at P < 0.05.

Association between the effectiveness of self management programme on FBS blood sugar levels in control group: There is statistically significant association between co-morbid diseases with FBS blood sugar levels at P < 0.05 level of significance.

There is no statistically significant association between FBS blood sugar levels with age, sex, education, occupation, income, religion, marital status, family type, residence, BMI, diet, habit of smoking, habit of alcohol, hobbies, medications at P < 0.05

Association between the effectiveness of self management programme on PPBS blood sugar levels in control group: There is statistically significant association between co-morbid diseases with PPBS blood sugar levels at P < 0.05 level significance. There is no statistically significant between PPBS blood sugar levels with age, sex, education, occupation, income, religion, marital status, family type, residence, BMI, diet, habit of smoking, habit of alcohol, hobbies, medications at P < 0.05.

CONCLUSION

The findings of the study shows that self management programme is effective in changing the life style pattern and reducing the blood sugar levels among patients with type II diabetes mellitus.

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