A Quasi-Experimental Study To Assess The Effectiveness Of Structured Teaching Program On Knowledge Level Regarding Self-Administration Of Insulin Among Diabetic Patients In A Selected Hospital, Bengaluru

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Abstract: The study aimed to assess the effectiveness of a structured teaching program on knowledge level regarding self-administration of insulin among diabetic patients in a selected hospital, Bengaluru. The objectives of the study were to assess the level of knowledge regarding self-administration of insulin among diabetic patients, to assess the effectiveness of structured teaching programs among diabetic patients, and to find an association between study findings with selected demographic variables. Orem's theory of self-care was adapted as a conceptual framework for the study. The result of the study revealed that post-test results have improved regarding knowledge level about self-administration of insulin among diabetic patients at 0.05 level of significance in the experimental group after a structured planned teaching program. The study concludes that a structured teaching program about self-administration of insulin among diabetic patients was effective in increasing knowledge levels.

Keywords - **Structured Teaching Program, Self-Administration of Insulin**

INTRODUCTION

Rapid urbanization and industrialization have lead to advancement on the social and economic front in developing countries similar as India which have resulted in dramatic lifestyle changes leading to lifestyle-related diseases like diabetes, hypertension. Diabetes mellitus is a chronic systemic deficiency characterized by either a deficiency of insulin or a decreased ability of the body to use insulin and is a significant health problem, diabetes is the leading cause of death in the United States about 17 million people have diabetes. Lifestyle modification can reduce the incidence of diabetes by 50% in diabetes. Comprehensive patient education is needed to give the case with the tone- operation chops necessary to achieve good glycemic control. Epidemiologic data indicate that large numbers of patients do not receive the proper care or education necessary to develop such self-management abilities.[1,2]

NEED OF THE STUDY.

The WHO has projected that the global prevalence of diabetes will more than double from 135 million in 1995 to 300 million by the year 2025, the greatest increase will be in India from 19.4 million to 57.2 million, while in China from 16 million to 37.6 million and in the USA from 13.9 to 21.9 million unless effective measures are implemented to curb this disease enormous disease. Currently, India has the largest number of diabetes and is being called as diabetic capital of the world.3,4

A study was conducted to assess the effectiveness of STP regarding self-care management among diabetic patients attending outpatient departments. The Structured Diabetes Teaching and Treatment Program (STTP) is increasingly offered: for 319 patients with diabetes. There was a group of 241 insulin-treated patients was followed up and served as a control group. There was a significant increase in the overall well-being of patients one and 2 years after the program, due to a reduction in depression and anxiety an increase in positive well-being after 1 year, and a decrease in depression and an increase in positive well-being after 2 years as compared to the control group. The study result revealed that there was an improvement in glycemic control of the educated patients as compared to the control group demonstrating that structured patient education improves patients' well-being 2 years after the teaching program.[5]

Despite all the advancements in the treatment of type I diabetes mellitus education remains the cornerstone of diabetes management, people with diabetes, unlike those with many other medical problems, can't just take pills or insulin in the morning, and then forget about their health the rest of the day. So, it is important for a diabetes patient to know about diet, exercise, medication, and other habits that affect their disease, so need education regarding lifestyle medication and knowledge about self-administration of insulin.

RESEARCH METHODOLOGY

The methodology of research organizes all the components of the study such as the approach of the study, sample of the study, data and sources of data, study's variables, and analytical framework. The details are as follows:

3.1 Population and Sample

The study population included admitted patients with diabetes mellitus who were taking insulin by himself/herself in the selected hospital in Bengaluru. The study was conducted in a 1600 bedded super-specialty hospital in which 240 bedded general ward was available. Permission was obtained from the Principal, Vydehi Institute of Nursing Sciences and Research Centre, Bangalore, medical superintendent, Vydehi Institute of Medical Sciences and Research Center. The study was conducted with a remedial approach from 27th March to 29th March 2018. The samples were selected on the basis of inclusion and exclusion criteria.

The study comprised 40 samples (20 in the experimental group and 20 in the control group) who were selected using a non-probability purposive sampling technique who were admitted to the general ward of the selected hospital and were with diabetes mellitus and were taking insulin by himself/herself.

3.2 Data and Sources of Data

For the study on the first day, the patients were explained about the study and divided into two groups based on using a non-probability purposive sampling technique (20 in the experimental group and 20 in the control group), and the confidentiality of response was also maintained. A written consent was obtained from the patients. The validated questionnaires were administered after acquiring the consent and pre-test data was collected. The structured teaching program regarding self-administration of insulin was provided for the experimental group and the post-test was done using the same questionnaire on 3rd day.

3.3 Conceptual framework

Variables of the study contain dependent, independent, and demographic variables. The study used the dependent variable as knowledge level regarding self-administration of insulin, the independent variable as a structured teaching program, and the demographic variable as age, gender, education, marital status, occupation, family income, domicile, religion, type of family, self-administration of insulin, previous exposure to the source of information.

The conceptual framework provides a broad perspective for nursing administration, practice research, and education. The conceptual framework for this study is based on the theory of self-care by Dorothea Orem. Self-care model defines self-care as those activities an individual performs independently throughout life to promote and maintain personal well-being.

Self-care agency: It is the individual ability to perform self-care activities. Under self-care agency there are two agents a self-care agent and a dependent care agent.

Self-care need: It is the measure or actions taken to provide self-care.

Orem's model focuses on the following three areas:

1. **Physical environment**: in this, physical environment includes demographic characteristics like age, gender, education, marital status, occupation, family income, and type of family duration of diabetes.
2. **Self-care agency**: Self-care agency include patients with diabetes mellitus, who are performing self-administration of insulin and their ability to perform self-administration of insulin. It consists of two agents a self-care agent (patient) and a dependent care agent (family member).
3. **Self-care needs**: Self-care needs include knowledge about self-administration of insulin.

3.4 Analysis and Interpretation

In order to achieve the stated objectives of the study, the data obtained from the participants were coded numerically tabulated, and entered into a spreadsheet. The data was analyzed using descriptive statistics and inferential statistics.

The detail of the interpretation of the data is given as follows:

3.4.1 Distribution of samples

Descriptive statistics has been used to find the maximum, minimum, standard deviation, mean, and normal distribution of the data of all the variables of the study. Majority 10(25%) of the participants were between the age group of 41-45 years, 28(70%) were male, 16(40%) of the participants had primary education, 35(87.5%) were married, 11(27.5%) were agriculture worker, 13(32.5%) had family income of between Rs. 5000-10000, 26(65%) had domicile as rural, 30(75%) were Hindu, 31(77.5%) live in a nuclear family, 30(75%) were not taking insulin by themselves and 28(70%) did not have any source of information regarding self-administration of insulin.

3.4.2 Descriptive and Inferential statistics

Table 3.4.2 Descriptive statistics of knowledge scores

GROUP	TOTAL SCORE	PRE-TEST MEAN SCORE	PRE-TEST MEAN SCORE PERCENTAGE	POST-TEST MEAN SCORE	POST-TEST MEAN SCORE PERCENTAGE
Experimental group	20	8.4	42%	15.6	78%
Control group		7.9	39.5%	9.35	46.75%

Table 3.4.2 shows the mean difference of knowledge in the experimental group is 7.2 and the mean percentage is 36%. Using paired-t test the t-value obtained is 12.2534>2.09 at the level of significance 0.05 and the df=19. Using an independent test the obtained t value is 7.7620>2.09.

Table 3.4.3 Association between socio-demographic variables and knowledge score using chi-square test

VARIABLES	BELOW MEDIAN	ABOVE MEDIAN	CHI-SQUARE	DEGREE OF FREEDOM	t- VALUE at LOS 0.05	LEVEL OF SIGNIFICANCE
AGE						
35-55	14	10	0.444	1	3.841	NOT SIGNIFICANT
56-75	11	5				
GENDER						
MALE	17	11	0.126	1	3.841	NOT SIGNIFICANT
FEMALE	8	4				
FAMILY INCOME						
0-5000	13	6	0.541	1	3.841	NOT SIGNIFICANT
5001-10000 above	12	9				
DOMICILE						
URBAN	5	6	1.880	1	3.841	NOT SIGNIFICANT
RURAL	20	9				

TYPE OF FAMILY						
NUCLEAR	18	13	1.156	1	3.841	NOT SIGNIFICANT
JOINT	7	2				
SELF ADMINISTRATION OF INSULIN						
YES	5	5	0.533	1	3.841	NOT SIGNIFICANT
NO	20	10				

Table 3.4.3 shows no significant association between age, gender, family income, domicile, type of family, self-administration of insulin, and knowledge scores at a level of significance of 0.05.

IV. RESULTS AND DISCUSSION

The finding of the study showed that than pre-test, and the post-test results showed improvement regarding knowledge level about self-administration of insulin among diabetic patients at 0.05 level of significance in the experimental group after the structured planned teaching program and there was no significant increase in the results regarding knowledge level about self-administration of insulin among diabetic patient in the controlled group. Based on the hypothesis of the study:

H1: There will be significant differences between the pre-test and post-test knowledge levels of diabetic patients regarding self-administration of insulin.

H2: There will be a significant association between knowledge and the selected demographic variables such as Age, Gender, Family income, Domicile, Type of family, Self-administration of insulin

H1 hypothesis is accepted thus, the findings indicated that the structured teaching program about self-administration of insulin among diabetic patients was effective in increasing the knowledge level about self-administration of insulin.

V. ACKNOWLEDGMENT

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