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A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHINGPROGRAMME ON KNOWLEDGE REGARDING HOME CARE MANAGEMENT OF DIABETES MELLITUS AMONG POPULATION BETWEEN THE AGE OF 20 – 70 YEARS AT A SELECTED VILLAGE, GUNTUR, A.P.

Bramaramba Muddana*

Vice Principal, Lalitha College of Nursing, Old Guntur, Guntur, Andhra Pradesh, India.

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ABSTRACT

Diabetes mellitus is the second most common cause of mortality. The needs of diabetic patients are not only limited to adequate glycemic control but also correspond with preventing complications. Individuals with diabetes either as a primary diagnosis or a combined condition, are no exception to this trend. In addition, the majority of patients referred to home care over the age of 65 years. The role of home health nurses is increasingly important as patients are discharged from the hospitals and rehabilitation centers in early illness. Self care in diabetes plays a major role. The approach used for the present study was evaluatory approach, the design used was quasi experimental pretest and post test method. Non probability purposive sampling technique was used for this study, setting of the sample was pedakakani a village in Guntur district. The data were collected by questionnaire method, The pre test was done on 1 st day followed by STP and post test on 5 th day. Ethical approval was taken from the concerned rural heads and Community health officer. There is clear differentiation between pre test and post test knowledge scores of the sample. In pre test 85 % of the subjects were with inadequate knowledge and 15 % with adequate knowledge while in post test 45 % represented with moderate knowledge and 55 % exhibited adequate knowledge. The current study demonstrated that there is insufficient knowledge in people with diabetes home care management, hence there is a need for improvement in knowledge level of subjects to prevent developing complications. The current study concluded that STP plays an important role in enhancing the knowledge of patients regarding home car management.

INTRODUCTION

India leads the world in alarming epidemic of diabetes mellitus with highest number of 50.8 million diabetics followed by china and united states [1]. The International Diabetes Federation (IDF) estimated the global prevalence of diabetes to be 151 million in 2000,285 million in 2010. The IDF reported that 366 million people had diabetes in 2011, and this prevalence is expected to rise to 552 million by 2030 [2]. The prevalence of diabetes is also increasing in other

Corresponding Author

Bramaramba Muddana
Email:- mbr.lssh@gmail.com

developing countries in Asia such as china and India [3]. There are, however patterns of diabetes incidence that are related to the geographical distribution of diabetes in India, rough estimates show that the prevalence of diabetes in rural population is one quarter of that of urban population for India and other Indian sub-continent countries such as Bangladesh, Nepal, Bhutan and Sri Lanka. Preliminary results from a large community study conducted by the Indian Council of Medical Research (ICMR) revealed that a lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and tamilnadu (4.8 million). Although the Indian urban population has access to reliable screening methods and anti-diabetic medications such health methods and anti-diabetic medications, such health benefits are not often available to the rural patients. There is a disproportionate allocation of health resources between urban and rural areas and in addition poverty in rural areas may be multi-faced, Such in adequacies contribute to an infrastructure that may result in poor diabetes screening and preventive services, non adherence to diabetic management guidelines, lack of available counseling and long distance travel to health services [4 & 5].

The increased incidence in developing countries follows the trend of urbanization and life style changes, including increasingly sedentary lifestyles, less physically demanding work and the global nutrition transition, marked by increased intake of foods that are energy dense but nutrient poor [6]. Until recently India had more diabetics than any other country in the world according to International Diabetic Foundation, although the country has now been surpassed in the top spot by china[7]. Diabetes currently affects more than 62 million Indians which is more than 7.1 % of adult population[8]. The average of onset is 42.5 years, nearly 1 million Indians die due to diabetes every year[9]. According to IHA India is projected to be home to 109 million individuals with diabetes by 2035 [10]. A study by the American Diabetes Association reports that India will see the greatest increase in people diagnosed with diabetes by 2030 [11]The high incidence in India is attributed to a combination of genetic susceptibility and adoption of a high caloric, low activity lifestyle by India's growing middle class [12]. An estimated 30.3 million of all aged population had diabetes. The numbers for pre diabetes indicate that 84.1 million adults including 23.1 million adults aged 65 years or older [13]. Diabetes occurs through out the world but most common in developed countries. Globally an estimated 422 million adults are living with diabetes mellitus. In India this increases is estimated to be 58 % from 51 million people in 2010 to 87 million in 2030. However the medical expert feel that timely detection and right management helps patients to lead a normal life. Patients of diabetes experience psychological difficulties associated with their disease which remains unrecognized involving several states related to coping with diabetes, diabetes distress is a distinct condition which is often mistaken for depression and is related to adverse diseases outcomes. Diabetes self management Education has been found to improve biometrics in diabetic patients. Home visits are considered as an economical and effective method for preventing and controlling chronic disease, as they provides benefit for patients, families and society [15]

Objectives of the study :

To assess the knowledge levels of population with diabetes mellitus on home care management of diabetes mellitus.

To determine the effectiveness of STP on home care management of diabetes mellitus.

Hypothesis :

H 1 : A significant difference exists between pre and post test knowledge Scores Of diabetes patients on home care management.

H 2 : The mean post test knowledge scores of diabetes patients on home care management will be significantly higher than the mean pretest knowledge scores as evident at 0.05 level of significance.

Conceptual framework: The present study utilizes the modified "Nola Pender's" health promotion model [1984], in order to assess the knowledge of people regarding causes, signs and symptoms, self monitoring of blood glucose of diabetes mellitus. The model focuses on modifying factors, cognitive factors of an individual level of well being by encouraging them to participate in health promoting behavior.

METHODOLOGY

Research approach: The Research approach adopted in the study was evaluatory approach.

Research design: Research design adopted for present study is quasi experimental time series design with pretest and posttest with control group, which includes manipulation, control and no randomization.

Setting of study

The settings of the study is Pedakakani, Guntur district, Andhra Pradesh.

Population: Population in between age of 20-70 years both genders.

Sampling technique: "Non-probability purposive sampling technique".

Sample size: The sample size for the present study is 60

Data collection Instrument

The data collection was scheduled from March 15th to 12th May 2018. Permission was taken from the Community Authorities of Pedakakani village, Guntur district, A.P. Approval was obtained for conducting the study. Informed consent was taken from the clients. Subjects were selected based on the inclusion criteria. Subjects of the study were undergone pre assessment of knowledge variables regarding home care management of Diabetes mellitus on 1st day, the post test knowledge variables regarding home care management of Diabetes mellitus on 5th day.

Data Analysis and Interpretation:

Demographic Profile Of Population With Diabetes Mellitus :

Among 60 patient's 40 (67%) of them were Male, and 20 (33%) of them were Females. Regarding Age distribution, 15 {25% } of the subjects are in the age group of 20-30 yrs, 15 {25%} of the subjects were in between the age group of 30 -40 years, 30 {505} of the subjects were in the age group of 40-60 yrs. The religious status of the subjects, Among 60 patients 30{50%} belongs to Hindu, 20 {33%} belongs to Christians, 5{8.33%} were belongs to Muslims and 5 {8.33%} belongs to others. Regarding Educational status, 24 {41.6%} of them were illiterates, 20 {40% } of them were had primary education and only 10 {16.4% } of them were had Higher education and 6 {10% } of them had college education. The occupational status of the population 25 {42%} of them were sedentary workers, 20 {33%} of them were Moderate workers and 15 {25% } of them were doing Heavy work. Family income of the subjects, in that 30 {50%} of them were earning Rs.1,000-5,000, 20 {33.3%} of them were earning 5,000-10,000, and 10 {16.6%} of them were earning above Rs.10,000. Type of family , Regarding this 20 {33% } of them were belongs to Nuclear Family and 40 {67% } of them were belongs to Joint Family. Body weight Regarding this, 10 {16%} of the population were having weight less than 60Kgs, 20 {33.3%} of the population were having weight in between 60-80 Kgs and 30 {50%} of the population were having weight More than 80 Kgs. The general body built of body 10 {17%} of them were with mild body weight, 20 {33%} of them were with Moderate body built and 30 {50%} of them were with obesity. The health status of the subjects regarding this, 20 {33.35} of the population were living with poor health status, 25 {41.6%} of the population were living maintaining Average health status and 15 {25%} of them were maintaining good health status. On considering food habits 10 {17%} of the subjects belongs to Vegetarians, 20 {33%} of them were belongs to Non-Vegetarian category and 30 {50%} of them were having Mixed dietary Habits. The blood sugar levels of patients , 5 {8.3% }of the subject blood sugar levels are in between 80 – 120 mg/dl, 25 {41.6% } of the subjects blood sugar levels are more than 120mg/dl, and 30 {50% } of the subjects blood sugar levels are in between 120 -200mg.dl.

Pre Test Knowledge scores of subjects

Post Test Knowledge scores of subjects

The findings Imply that knowledge and mean percentage in pre test showed that the subjects had Inadequate knowledge on Home care management of Diabetes mellitus with regard to all 3 aspects and post test revealed that the subjects acquired adequate knowledge and among the none had inadequate knowledge in post test. This revealed that after structured teaching program subjects had improved their knowledge on three aspects.

Comparison of pre test & post test knowledge scores of the subjects :

The findings imply that there is significant difference in pre test and post test score of knowledge which shows that Structured Teaching Program improved the knowledge levels on 5 th day of giving Structured Teaching Program. Figure 4 Shows the association between the pre test and post test knowledge levels The statistical analysis was done for association between knowledge variables by using "z" test. Significance was made at 0.05 level. The result indicates that the association between knowledge variables – such as knowledge on Meaning, causes, Signs and symptoms – Diagnosis and home care management of Diabetes mellitus – and Prevention of complications . . are significantly high in posttest than in pre test. Here the investigator feels that if the client is literate he/she knows the importance of Structured Teaching Program in the improvement of knowledge levels.

Table 1. Research design

Pre Test	STP	Post Test
01	X	02

Table 2. Comparison of pre test and post test knowledge levels of subjects

Knowledge Variables	Pre test		Post test		"Z" Test
	Mean	S.D.	Mean	S.D.	
Meaning	2.33	1.41	3.85	0.74	7.6
Etiology	1.28	1.07	2.85	1.02	11.21
Signs &Symptoms	1.21	0.83	2.25	0.74	10.4
Diagnosis	0.55	0.55	1.35	0.7	3.63
Medical Management	2.2	1.47	4.58	1.65	9.15
Home care Management	0.19	0.73	2.1	2.41	3.96
Prevention of Complications	1.35	1.4	3.83	1.95	27.55

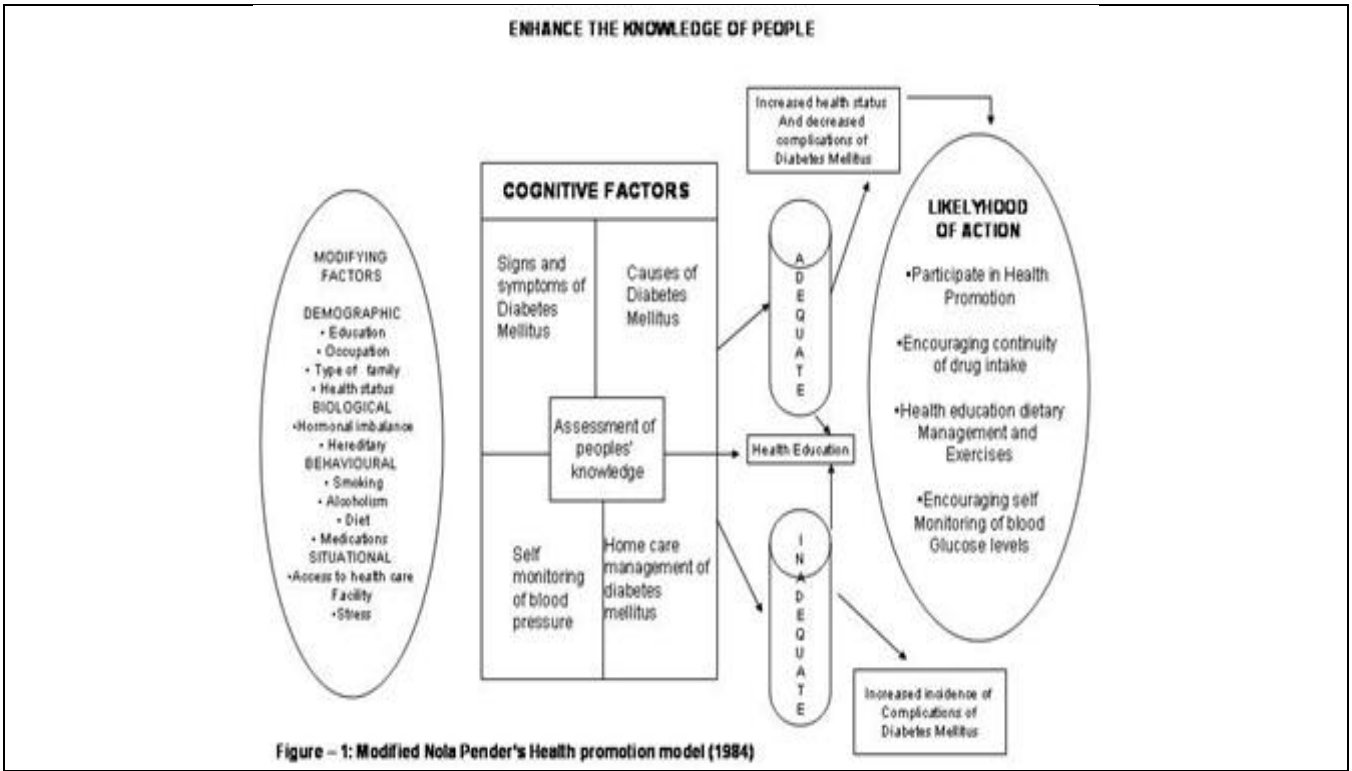


Figure – 1: Modified Nola Pender's Health promotion model (1984)

Figure 2. Pre Test Knowledge Scores

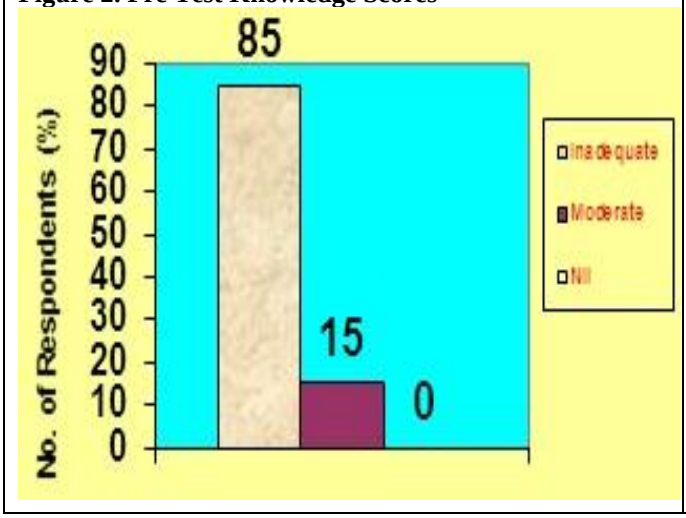


Figure 3. Post test Knowledge Scores

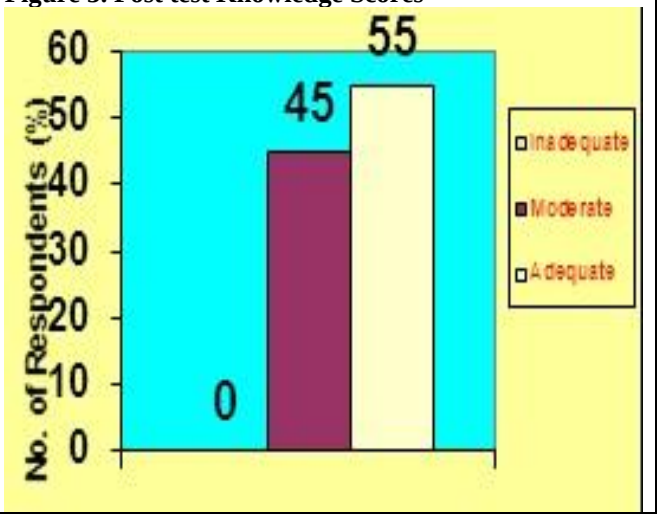
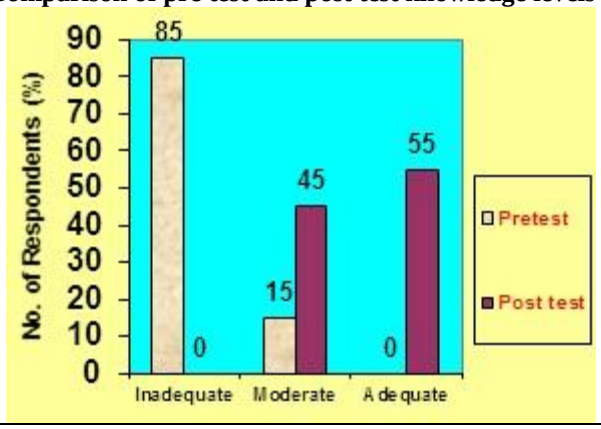


Figure 4. Comparison of pre test and post test knowledge levels of subjects



DISCUSSIONS

The present study is an effort to evaluate the effectiveness of structured teaching program on knowledge regarding home care management of diabetes mellitus in selected rural area at pedakakani Guntur, A.P. in order to achieve the objectives.

This study consists of one group where pre test and post test can be conducted after one week duration. sixty samples were selected by a purposive sampling method. The samples were assessed by the socio demographic and clinical variables using structured Questionnaire. The structured teaching of 45minutes was administered for the clients by assessing their knowledge levels.

The First objective was to assess the knowledge levels of population with diabetes mellitus on home care management of diabetes mellitus. The knowledge obtained in pre test, revealed that study subjects had Inadequate knowledge regarding Diabetes mellitus and its hoe care management. The Mean pre test values were 2.33, 1.28, 1.21, 0.55, 2.2, 0.19, 1.35 { total 9.11 }. The above findings indicate that the knowledge of subjects was inadequate and it was necessary for the investigator to improve the knowledge of subjects by giving structured teaching program on home care management of diabetes mellitus which would enable them to improve their knowledge.

The Second objective: To determine the effectiveness of STP on home care management of diabetes mellitus.

The analysis of over all knowledge of subjects during post test revealed that the subjects acquired adequate knowledge and among the none had inadequate knowledge in post test. The knowledge, Mean obtained in post test revealed that the analysis of over all knowledge of subjects during post test revealed that the subjects acquired adequate knowledge and among the none had inadequate knowledge in post test. This revealed that after structured teaching program subjects had improved their knowledge on three aspects. The mean post test values were 3.85, 2.85, 2.25, 1.35, 4.58, 2.1, & 3.83 and 11.81 {total 20.81}

The findings imply that there is significant difference in pre test and post test score of knowledge which shows that Structured Teaching Program improved the knowledge levels on 5 th day of giving Structured Teaching Program.

Implications for nursing education:

❖ Diabetes mellitus and its home care and prevention of complications can be included in the curriculum.

❖ Structured teaching has been helped in improving the peoples knowledge regarding home care management of diabetes mellitus.

Implications for nursing practice:

- The nursing personnel should teach the diabetic clients regarding home care management of diabetes mellitus
- They can encourage the clients to listen to teaching and encourage them to follow the teaching regularly so that they can enhance their health condition.
- With medications, dietary restrictions, regular exercise, self monitoring of blood glucose patients can maintain their health status and can prevent the complications which occurs because of diabetes mellitus.

Implications for nursing administration:

✓ The study assists the nursing administrative authorities to initiate and carry out importance of structured teaching

✓ program in enhancing the peoples knowledge regarding home care management of diabetes mellitus. in rural areas.

✓ Nursing leaders must utilize available resources which are technologically sound in enhancing the peoples

knowledge of home care management of diabetes mellitus.

Implications to community health practice:

- In community, the primary health centers and even in home setup the nurses can give health education for diabetic clients in terms of diet, exercises, self monitoring of blood glucose levels and prevention of complications and also Over all maintains of health and well being.

Implications for nursing research:

❖ The study helps the investigator to develop insight regarding the importance and effectiveness of structured teaching program.

❖ This study will serve as a valuable reference material for future investigators

❖ Large scale studies can be conducted.

❖ Research should be continued on need of the practices and effectiveness of return demonstration of exercises, self monitoring of blood glucose, and regarding the occurrence of complications.

Facts about Diabetes Mellitus

➢ The first Known mention of diabetes was in 1552 B.C., when Hesy-Ra an Egyptian Physician, documented frequent urination, ancient healers noted that ants seemed to be attracted to the urine of the people who have this disease.

➢ Dr. Elliott P. Joslin, founder of the Joslin Diabetes Center, was the first doctor to specialize in diabetes and to encourage self-management.

➢ In 1916, Dr. Frederick M. Allen developed a hospital treatment program that restricted the diet of diabetes patients to whiskey mixed with black coffee (clear soup for non-drinkers).

➢ Type 1 and type 2 diabetes were officially differentiated in 1936.

➢ In 1942, the first oral type 2 diabetes medication was identified, a sulfonylurea (a medication that stimulates the pancreas to produce insulin).

➢ Those with diabetes are more likely to develop carpel tunnel syndrome and tarsal tunnel syndrome.

➢ Individuals who have inherited other genetic syndromes (Down's syndrome, myotonic syndrome, Turner's syndrome) are also at risk of developing diabetes.

➢ Individuals with an "apple" body shape are at greater risk for diabetes than are those with "pear" body shapes.

➢ Inhaled insulin is an emerging twenty-first century option for people with Type I diabetes.

➢ India has the world's highest diabetes population with over 35 million people with diabetes. By 2025, this number is expected to swell to 70 million, meaning every fifth diabetic in the world would be Indian.

Home care Management

1. Life style modifications a) Nutrition b) Weight control c) Smoking &Alcoholism	 Calories → sufficient to achieve and maintain reasonable weight. Carbohydrate 40% - 60% of total calories Proteins → Double the amount needed. More green leafy vegetables. More fiber containing diet should be taken eg: apple, banana , orange etc.. weight should be checked daily. less fat containing diet should be taken to reduce weight. Avoid smoking and alcoholism because it can cause foot ulcer.
2. Exercise	-. Active and passive exercises are advised -. Client should take water before starting exercise and eat 15 to 30g of carbohydrate before exercise. -. Exercise lowers blood glucose by increasing carbohydrate metabolism and fosters weight reduction.
3. Insulin therapy	-. Take correct dosage of insulin -. Do not skip insulin dose. -. Administer insulin subcutaneously after checking blood sugar/urine sugar level. -. Rotate injection site in one area to decrease variability of absorption. -. Store insulin in cool place and avoid exposure to sunlight.
4. Pharmacological therapy	-. Administer drug with food -. Take drug once a day at the same time each day -. Assess for side effects.

5. Monitoring blood glucose	-. Monitor blood glucose level by using glucose strips -. Test urine for presence of ketones.
6. Sick day rules	-. Never omit insulin -. Always drink plenty of water -. Get as much rest as possible -. Contact physician if there is persistent fever, vomiting, severe pain in abdomen, chest pain.
7. Prevention of complications	-. Prevention of foot ulcers. -. Wash feet daily with lukewarm water and soap -. Wear protective shoes -. Moisturize the feet -. Cut the toe nails -. Skin hygiene -. Hand washing -. Keep skin clean and dry -. Dental hygiene -. Brush teeth with a soft tooth brush -. Use fluoridated tooth paste.
8. Prevention of infection	**Prevention of Hypoglycemia** -. Do not omit meals -. Avoid alcohol intake -. Take correct dosage of insulin -. Eat a sweet while feeling giddiness or hand full of sugar or glucose powder. **Prevention of Hyperglycemia** -. Do not take too little of insulin -. Do not skip insulin

Conflicts of Interest: There were no conflicts of interest reported in the study.
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