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A Study to Assess the Effectiveness of Structured Teaching Programme on Self Care Management of Diabetes Mellitus among Elderly People in Ughanpur, Baheri at Bareilly"

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Abstract: ***The present study has been undertaken to assess the effectiveness of structured teaching programme on self - care management of diabetes mellitus among elderly people in Ughanpur, Baheri at Bareilly". A pre - experimental design and evaluative approach was used in the study. The data was collected from 60 subjects through on probability purposive sampling technique. Data was collected using structured questionnaire. The focus of this study was to evaluate the effectiveness of structured teaching program on knowledge regarding self care management of diabetes mellitus among elderly people at selected health care settings, Bareilly, U. P. The overall analysis of level of knowledge of elderly people regarding self - care management of diabetes mellitus showed that mean knowledge scores of the subjects at pre - test were17.47 (58.23%) with the standard deviation of 4.131found to be moderate knowledge regarding self - care management of diabetes mellitus. After administration of Structured Teaching Program mean knowledge scores of the subjects was 23.02 (76.73%) with standard deviation of 3.912found to be improvement in the level of knowledge among elderly people. Among the participants26.7% of the elderly people had inadequate knowledge and 70% had moderate knowledge in the pretest. After administration of the structured teaching program 50% of the subjects had adequate knowledge, 46.7% had moderate knowledge regarding self - care management of diabetes mellitus in the post test.***

Keywords: Knowledge; elderly people; self - care management of diabetes mellitus, structured teaching program.

1. Introduction

"Self is the best help. ""The Wealth of a Nation depends on the health of the people. "

Health problems are mostly occurring in aged people. Aging is the natural process. In the words of Seneca "Old age is an incurable disease". According to Sir James sterling Ross "You do not heal old age. You protect it; you promote it; you extend it"[1].

Old age is not synonymous with ill health' live well, Live Long was the theme of World Elder's Day celebrates on last October 1, 2009. Geriatric Health pertains to medical care to the elderly population. It is generally accepted to call an individual over the age of 65 years as elderly. The elderly age group can be divided into younger elderly people between 65 - 74 years of age, middle old people between 75 - 84 years of age and old elderly people over the age of 85.2

Each human life has victory, happiness, and joyful events, but unfortunately failures, troubles, distress, and sorrows, these are all parts of the life events; therefore aging is also a part in life which we cannot change. The concept of ageing is more than a series of biological changes. Ageing is for the individuals regarded as something unpleasant, useful, unnecessary, and unwanted. The old aged people feel themselves to be useless. Some elderly people are satisfied by watching the beauty of nature their aging[3]. The elderly are a precious asset for any country with rich experience and wisdom; they contribute their might for sustenance and progress of the nation[3].

India ranks 4th in terms of absolute size of elderly population. The country is not adequately equipped to look after their special health needs and the changing traditional value system. A feeling is now growing among the aged persons that the attitude of the younger generation towards them is not as desired. The traditional sense of duty and obligation of the younger generation towards their older generation is being eroded. The older generation is caught between the decline in traditional values on one hand and the absence of adequate social security system on the other[4].

Diabetes mellitus creates a significant clinical and economic burden on society.5 A prevalence of diabetes is rising all over the world due to population growth, aging, urbanization, increase of obesity and physical inactivity. Older persons are most affected by diabetes in Asian countries is disproportionately high in young to middle - aged adults. This could have long - lasting adverse effects on a nation's health and economy, especially for developing countries.6

The prevalence rate of Diabetes mellitus in urban cities of India, such as New Delhi consists of 10.3% in the year of 2021, Chennai is 13.5%, and the prevalence of diabetes in Rural India such as Delhi consists of 1.5% in the year of 2011, Vellore is 2.1% in the year of 2017. By compare the rural areas and urban cities of diabetic rates in India shows, the high prevalence rate of diabetes mellitus in urban cities of India.1[5]

A study was conducted to find out the prevalence of diabetic population of Bareilly district. A total number of 4565 participants aged between 20 to >54 years of Bareilly district have attended the various health check - up camps. In which

1978 (76.4%) males and 1671 (84.5%) females were normal and 610 (23.6%) males and 306 (15.5%) females were diabetic.1[6]

The self - care behaviors are learnt that a person performs self - care activities to maintain life, health and well being. Self care has emerged as a multidimensional concept constructed from a wide collection of perspectives. Alongside such developments the World Health Organization (WHO) has formed a broad definition of self care as "what people do for oneself to establish and maintain health, prevent and deal with illness.8"

The major International Health Agencies like; WHO (World Health Organization) is focused to attainment by all people of the highest level of health, FAO (Food and Agriculture Organization) is focused to help nations raise their living standards, In 1931 Rockefeller Foundation began its activities to promote the well - being of mankind throughout the world, In 1920 Indian Red Cross established to improve health; prevention of disease and mitigation of suffering and service for mankind in peace & war. All these Health Agencies are mainly focused about health of the Nations, so "Health is wealth.9"

2. Review of Literature

A household NCD STEPS survey was done to assess the prevalence of diabetes and pre diabetes in the state of Punjab, India in a multistage stratified sample of 5127 individuals. All the subjects were administered the WHO STEPS questionnaire, anthropometric and blood pressure measurements. Results revealed that overall prevalence of DM among the study participants was found out to be 8.3% (95% CI 7.3–9.4%) whereas prevalence of prediabetes was 6.3% (5.4–7.3%). Age group (45–69 years), marital status, hypertension, obesity and family history of DM were found to be the risk factors significantly associated with DM. Study concluded that there is a high prevalence of diabetes, especially of undiagnosed cases amongst the adult population, most of whom have uncontrolled blood sugar levels [20].

A community - based cross - sectional study was conducted to assess the prevalence of diabetes mellitus and its risk factors among individuals aged 15 years and above in Mizan - Aman town, southwest Ethiopia. A multistage sampling technique was used to select study participants. A total of 402 participants were included in the study. Findings showed that the prevalence of DM was found to be 6.5% (26 out of 402). Of which, the proportion of previously undiagnosed diabetes mellitus was 88.5%. The prevalence of prediabetes was also found to be 15.9%. The waist circumference (WC), body mass index, smoking habit, hypertension, and total cholesterol level were significantly associated with diabetes mellitus. Study concludes that higher prevalence of diabetes mellitus was observed than the IDFA - projected estimate of DM for Ethiopia. Therefore, targeting the prevention strategy to such modifiable risk factors might reduce the prevalence of diabetes mellitus and screening of DM particularly in those individuals having high WC, history of smoking habit, and hypertension needs attention [25].

A hospital record based study was conducted to estimate the prevalence of Diabetes Mellitus in various age groups in rural population of Mullana, District Ambala (Haryana). Results revealed that Out of 1050 patients screened 50 were found to be having Diabetes mellitus (DM) 1000 were non - diabetic i. e. prevalence of Diabetes mellitus (DM) was found to be 4.76%. Out of 362 males screened 22 were suffering from Diabetes mellitus (DM) i. e. prevalence of 6.07%. Whereas out of 688 females screened 28 were suffering from Diabetes mellitus (DM) i. e. prevalence of 4.06%. Prevalence of Diabetes mellitus (DM) in males was found to be maximum in age group of more than 70 years i. e.6.97% as compare to female i. e.5.29%. Study concluded that prevalence of Diabetes mellitus (DM) is very high among rural population [22].

A cross - sectional survey study was undertaken to estimate the prevalence of diabetes mellitus and to study the association of risk factors in an urban population of Rohtak. Study included 1000 eligible persons. Results depicts that the prevalence of diabetes in the study population was 8.1% which was higher in females (9.8%) as compared to males (6.1%). Results of impaired fasting glucose showed prevalence of pre diabetics to be 10.3% which was again higher in females (13.3%) as against 6.7% in males.67% of pre - diabetic and 49.4% of diabetic have family history of diabetes mellitus in first degree relationship while 1.8% of non - diabetic had a family history of diabetes. prevalence of diabetes increased with increasing age up to 70 years. Moreover, the prevalence of diabetes was high in two extremes of socio - economic classes, being more in low socioeconomic class. Study concludes that prevalence of diabetes in urban Haryana is lower than other states. Also, the prevalence of diabetes is higher in females. Prevalence is influenced by age, education, occupation, socioeconomic status and marital status [29].

A cross - sectional study was conducted to determine the prevalence of diabetes and pre - diabetes and to assess the risk factors associated with diabetes and pre - diabetes in the urban slums of Bareilly. Study included 2013 subjects in the age group of 35 years and above. Results showed that prevalence of diabetes was 12.33% and of pre - diabetes was 11.57%. Prevalence was more among the females compared to males. Increasing age, over weight and obesity, sedentary life style, tobacco consumption, diet habits showed statistically significant association with prevalence of diabetes and pre - diabetes. Study concluded that physical activity like regular exercises both at the office and at home, fibers - rich diet, blood sugar estimation after 35 years is some of the recommendations which can control diabetes [32].

A case control study was conducted to assess the impact of health education on knowledge, attitude, practices, and glycemic control in type 2 diabetes mellitus patients in the department of Medicine of a tertiary care teaching hospital. The study was conducted on 100 diabetic subjects aged more than 40 years comprising of 50 cases and 50 controls. Results revealed that the mean knowledge, attitude, practice, and KAP SUM scores of cases showed significant increase from the baseline compared to controls, accompanied by significant reduction in HbA1C of cases at the end of the study compared to the controls. Study concluded that

effective health education improves knowledge, attitude, and practices, particularly with regard to lifestyle modifications and dietary management, culminating into better glycemic control that can slow down the progression of diabetes and prevent downstream complications [43].

A study was conducted in the effectiveness of a structured teaching and treatment programme for NIDDM patients, 53 patients participated in a structured program and 55 were in the control group. After six months, results have shown that weight reduction in the intervention group was 2.6kg. Systolic and diastolic blood pressure, serum triglycerides and serum cholesterol were reduced significantly in the intervention group. The number of patients with callus formation and poor nail care decreased significantly after participating in the teaching program. In the control group no reduction in body weight, metabolic control or in risk factor for diabetic foot complications observed[47].

A structured teaching programme to assess the knowledge of self - administration of insulin injection who have treatment of hyperglycemia, clients attending the out patient clinic at PHC Karnataka state in India, patient's level of knowledge was assessed by asking questions on symptoms of hypoglycemia and chronic complications of diabetes. Diabetic clients had a poor level of knowledge about self administration of insulin. After the education programme there is a improvement client knowledge of self administration of insulin injection[48].

A quasi experimental one group pretest - post test study done in U. P to **"**Evaluate The Effectiveness Of Structured teaching programme (STP) On Knowledge Of Reproductive And Child Health Services And Its Utilization Among Mothers Of Under Five Children 50 mothers with under five children were taken for the study The findings of the study showed that mean post test knowledge score (83.12 %) of the subjects was higher than the mean pre test knowledge score (44.28 %) with an enhancement score found to be 38.84 percent and noticed with statistical significant established by paired t - test ($p< 0.05$) the knowledge score of the mothers regarding the RCH services and its utilization were inadequate during the pretest. In the post test the knowledge found to be considerably more with remarkable enhancement in the knowledge of mothers of under - five children on RCH services and its utilization[49].

3. Material & Method

The present study has been undertaken to assess the effectiveness of structured teaching programme on self - care management of diabetes mellitus among elderly people in Ughanpur, Baheri at Bareilly". The purpose of this section is to communicate to the readers what the investigator did to solve the research problem or to answer the research questions. This section in the research report often tells the readers about the major methodological decision.

The present study was undertaken in selected rural areas, Bareilly. This setting was selected because of the geographical proximity, availability of the samples and permission to conduct the study. the evaluative research approach was found to be suitable for the present study. the pre - experimental (one group pre - test and post - test) design was adapted to assess the effectiveness of structured teaching programme on knowledge of elderly people regarding self - care management of diabetes mellitus Ughanpur, Baheri, Bareilly.

The socio demographic data consists of 7 items pertaining to Age, gender, religion, educational status, monthly family income, family type and source of information Purposive sampling technique was adopted. Purposive sampling technique refers to the process of conveniently selecting a widest possible variety of respondents

Sample size refers to the number of subjects needed for the study. The total sample size of this study is 60 elderly people.

A structured knowledge questionnaire is a method of gathering self reported information from respondents through structured interview schedule in a paper and pencil format.

Section A: It consists of socio demographic profile like age, gender, religion, educational qualification, monthly family income, family type andSource of information are the socio demographic variables**.**

Section B: It consists of structured knowledge questionnaire regarding General information of Diabetes mellitus, complications of diabetes mellitus and self care management of diabetes mellitus.

This part of the tool consists of 30 items covering the content of areas such as General information of Diabetes mellitus, complications of diabetes mellitus and self care management of diabetes mellitus.

The STP was developed according to the objective planned. The developed STP was given to 5 experts to establish content validity, and they were requested to give their opinion and suggestions about the content. They were given the criteria checklist and asked to place a tick mark (✓) against agree or disagree. There was 100% agreement on the content of STP from the experts. One of the evaluator asked the investigator to include more visual aids.

In order to ensure content validity of the data collection tool, the prepared instrument, along with the problem statement, objectives, operational definitions and criteria checklist designed for validation were submitted to 5 experts. The experts were post graduates in Community Health Nursing.

The data was collected in the following phases:

Phase I: In this phase, pre - test was conducted on a total of 60 elderly people by a structured method of gathering self reported information from respondents through structured interview schedule regarding self care management of diabetes mellitus and instructions were given on answering the questionnaire and doubts were clarified. Each staff took 20 - 30 minutes to answer demographic data and the questionnaire.

Phase II: In this phase, a STP regarding self care management of diabetes mellitus was conducted to the subjects and explained to them. All the questions or queries were clarified which were asked by the subjects.

Phase III: In this phase, post test was conducted on 7th day after administration of the STP; the same structured method of gathering self - reported information from respondents through structured interview schedule was used. During the conduction of the study there was no problem aroused and subjects were cooperative to conduct the study. The investigator thanked and appreciated all the subjects for their goodwill. The collected data was compiled for analysis.

4. Results & Analysis

Knowledge level of elderly people regarding the self care management of diabetes mellitus

Table 1: Pretest and Post - test knowledge level of the elderly people, N = 60

Knowledge level	Pre test		Post test	
	Frequency	%	Frequency	%
a) Inadequate knowledge	16	26.7	2	3.3
b) Moderate knowledge	42	70.0	28	46.7
c) Adequate knowledge	2	3.3	30	50.0

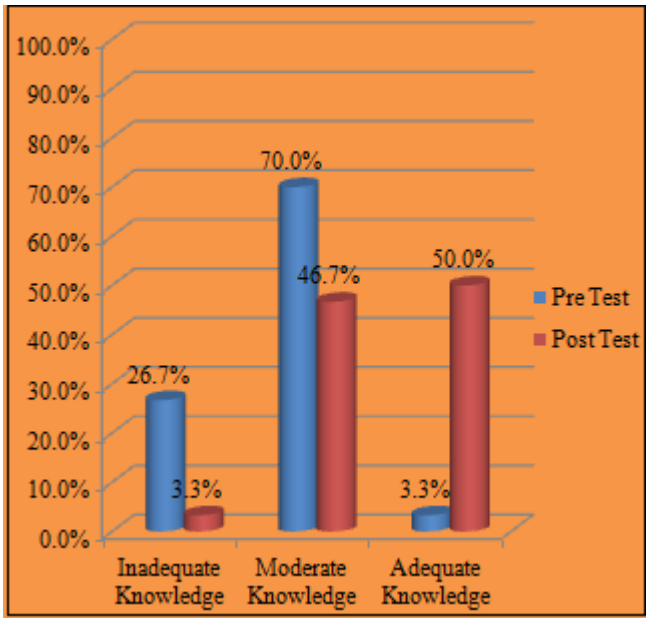


Table 2: Analysis of pretest and Post test knowledge scores of elderly people, N = 60

Knowledge aspects	No. of Items	Max Score	Mean	Mean %	SD
Pre test	30	30	17.47	58.23	4.131
Post test	30	30	23.02	76.73	3.912

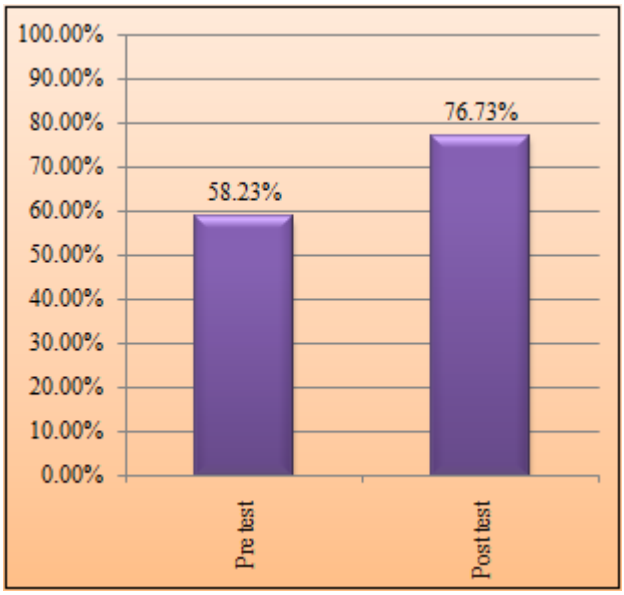
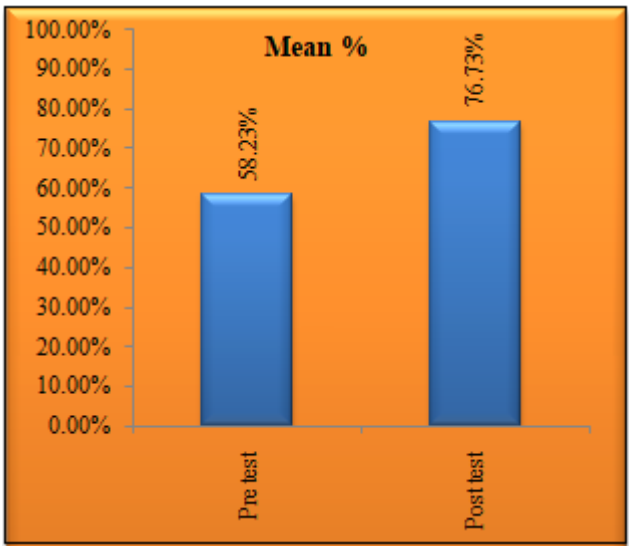


Table 3: Comparison of knowledge scores of elderly people N = 60

	Mean	S D	Mean Difference	t Value	Df	P Value	Inference
Pre test	17.47	4.131	5.55	10.978	59	0.0001	HS
Post test	23.02	3.912					



Comparison of mean percentage of pre - test and post - test scores

Table 4: Association between pretest knowledge of elderly people and the selected demographic variables

N = 60Variables	Below Median	Median and above	Chi square	Df	P value (0.05)	Inference
1. Age in years						
a. 60 - 65 years	18	7	10.385	2	0.006	S
b. 65 - 70 years	5	15				
c. 71 years and above	6	9				
2. Gender						
a. Male	17	19	0.044	1	0.833	NS

b. Female	12	12				
3. Religion						
a. Hindu	18	22	2.336	2	0.311	NS
b. Muslim	7	3				
c. Christian	4	6				
4. Education						
a. Illiterate	15	13	6.216	2	0.045	S
b. Up to SSLC	12	8				
c. PUC and above	2	10				
5. Family Income						
a. Less than Rs.5000	5	4	9.335	3	0.025	S
b. Rs.5001 - 10000	8	20				
c. Rs.10001 - 15000	11	6				
d. More than Rs.15001	5	1				
6. Family type						
a. Joint Family	3	8	2.392	1	0.122	NS
b. Nuclear Family	26	23				
7. Source of information						
a. Family Members	5	4	0.6	3	0.896	NS
b. Friends	4	5				
c. Mass Media	10	13				
d. Health personnel	10	9				

5. Discussion

The present study was attempted to explore the knowledge level of elderly people regarding self care management of diabetes mellitus at Ughanpur, BaheriBareilly.

Majority 41.7% belongs to the age group of 60 - 65 years, 33.3% belonged to the age group of 65 - 70 years. Majority 60% of the samples were males and remaining 40% were females. Majority 66.7% of the subjects belong to Hindu religion, 16.7% were Muslims and remaining 16.7% were Christians. Majority46.7% of the subjects are Illiterates, 33.3% were educated up to SSLC. Among participants 15% of the samples had monthly income less than Rs.5000, 46.7% had income between Rs.5001 - 10000, 28.3% of them had income of Rs.10001 - 15000. Among the elderly people18.3% were living in joint family. Among the participants 38.3% had mass media as their Source of information and remaining 31.7% had information from the health personnel.

Knowledge level of elderly people regarding self - care management of diabetes mellitus.

Majority 26.7% of the elderly people had inadequate knowledge and 70% had moderate knowledge and 3.3% of them had adequate knowledge in the pretest. After administration of the structured teaching program 50% of the subjects had adequate knowledge, 46.7% had moderate knowledge regarding self care management of diabetes mellitus in the post test.

The overall mean pre test knowledge score obtained by the elderly people was 17.47 (58.23%) with the standard deviation of 4.131. The overall post test mean knowledge score obtained by the elderly people was 23.02 (76.73%) with standard deviation of 3.912.

Comparison of the pre - test and post - test knowledge score of elderly people

H_1: There will be significant difference between the pre - test and post - test knowledge scores of elderly people regarding self care management of diabetes mellitus.

The overall pretest mean knowledge score obtained by the elderly people was 17.47 (58.23%) with the standard deviation of 4.131and the overall post test mean knowledge score obtained by the elderly people was 23.02 (76.73%) with standard deviation of 3.912.

The total difference in the mean of overall knowledge score was 5.55 with the 't' value of 10.978 and found to be significant at the level of $p<0.01$. It means there is significant difference between pre test and post test level of knowledge of elderly people regarding self care management of diabetes mellitus. Hence the hypothesis H_1 is accepted.

Association between knowledge scores of elderly people regarding self - care management of diabetes mellitus and selected demographic variables

H_2: There will be significant association between pretest knowledge score with selected demographic variables

It was evident that there was a statistically significant association between the pretest and posttest knowledge score with demographic variables such asage, educational qualification and family income at the probability level of $p<0.05$. It means that there is a significant association between the knowledge score of the elderly people with selected demographic variable. Hence the hypothesis H_2 is accepted.

6. Conclusion

This chapter presents the conclusions drawn, implications, limitations, suggestions and recommendations.

The focus of this study was to assess the effectiveness of STP on knowledge level of elderly people regarding self

care management of diabetes mellitus at selected Rural areas of Bareilly. Pre experimental (one group pre test post test) design and evaluative approach was used in the study. The data was collected from 60 samples through Purposive sampling technique.

The data collected was subjected to analysis using descriptive statistics in terms of frequencies, percentage and inferential statistics like chi square to find the association.

The overall pretest means knowledge score obtained by the elderly people was 17.47 (58.23%) with the standard deviation of 4.131 and the overall posttest mean knowledge score obtained by the elderly people was 23.02 (76.73%) with standard deviation of 3.912.

The total difference in the mean of overall knowledge score was 5.55 with the 't' value of 10.978 and found to be significant at the level of $p<0.01$. It means there is significant difference between pretest and posttest level of knowledge of elderly people regarding self - care management of diabetes mellitus. Hence the Hypothesis H_1 is accepted.

7. Implications of the study

The findings of the study can be used in the following areas of nursing profession. Nursing Practice, Nursing Education, Nursing Administration, Nursing Research

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