



A PRE-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING ABOUT KNOWLEDGE REGARDING IMPORTANCE OF DIET AND EXERCISE FOR PREVENTION OF DIABETES MELLITUS AMONG RURAL ADULT POPULATION

Harshal S. Tiple

M.Sc. (Community Health Nursing), Kasturba Nursing College, Sewagram Dist. Wardha, Maharashtra, India-442001.

ABSTRACT

Aims: The aim of present study were to assess the effectiveness of planned teaching about knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population and to evaluate effectiveness of planned teaching on knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population. **Material and Methods:** Non probability convenient sampling technique was used to select the sample. Quantitative research approach with pre-experimental one group pre-test post-test design. The data collected during the month of December among rural adult population in Anji (Mothi), using socio demographic data sheet and structured knowledge questionnaire. **Results:** A total of 70 adult populations participate the study with mostly 21 were in 36–40 year age group, mostly were male n=38, mostly 25 were in the secondary education, mostly were income Rs.10000 – 15000 n=38, mostly the occupational status was farmer 41 and mostly 39 were vegetarian. On final scoring of tests in pre-test score, 10 were average, 39 were good, 19 were very good and 2 were excellent level of knowledge score. Post-test score, 43 were very good and 27 were excellent level of knowledge score. **Conclusions:** The study finds that the knowledge of target population was significantly improved after receiving information in the form of planned teaching regarding importance of diet and exercise for prevention of diabetes mellitus.

KEYWORDS : Diet, Exercise, Prevention, Diabetes Mellitus, Rural adult population

INTRODUCTION

Diabetes mellitus is a group of metabolic disorder which is too characterized by increased the level of glucose in the blood (hyperglycemia) resulting from defects in insulin secretion, insulin action or bot, according to American nurses association.¹

Diabetes constitutes a global public health problem. Today about 135 million people are affected and it is estimated that the number in 2025 will be 300 million. The main causes of the disease are genetic and environmental factors such as urbanization and industrialization, increased longevity and changes in lifestyle from a traditional healthy and active life to a modern, sedentary, stressful life and overconsumption of energy-dense foods.²

Results showed that worldwide, the number of adults with type 2 diabetes are expected to rise by more than 406 million in 2018 to 511 million in 2030, Over half of them will be living in just three countries - China (130 million), India (98 million) and United State (32 million). According to the World Health Organization (WHO) India had 69.2 million people living with diabetes in 2015.³

Diabetes is a chronic health problem, and it is now growing as an epidemic in both developed and developing countries. India leads the world today with the largest number of diabetes in any given country followed by china and USA.⁴

Background of the study

First time diabetes was described in Egyptian script from 1500 BC mentioning "too great emptying of the urine". The first was found in type 1 diabetes. Also at the same time Indian physicians identified the disease and classified it as madhumeha or "honey urine", noting the urine would attract ants.⁵

First time Indian physician Sushruta and Charaka identified Type 1 and type 2 diabetes as separate conditions in 400–500 CE with type 1 associated with youth and type 2 with being overweight. The term "mellitus" or "from honey" was added by the Briton John Rolle in the late 1700s to separate the condition from diabetes insipidus, which is also associated with frequent urination. In early part of 20th century, Canadians Frederick Banting and Charles Herbert isolated purified insulin in 1921 and 1922.⁶

Need for the study

Diabetes is an 'ice berg' disease. Diabetes was increased in both the prevalence and incidence of non-insulin dependent diabetes occurred in overall world; they had been especially in societies, in industries and in developing countries. Currently the number of cases of diabetes worldwide is estimated to be around 150 million. The number is predicted to be doubled by the year 2025, a prevalence rate of about 5.4% with the greatest number of cases being expected in China and India.⁷

According to WHO, In India the recent data with ICMR-India diabetes study in 2011 reported the prevalence of diabetes mellitus in 4 regions of country as 10.4% in Tamilnadu, 8.4 % in Maharashtra, 5.3% in Jharkhand and 13.6% in Chandigarh. The overall number of people with diabetes mellitus in India in 2011 based on this study was estimated to be 62.4 million.⁸

Objective of the study

- To assess the effectiveness of planned teaching about knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population.
- To assess the existing level of knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population.
- To evaluate effectiveness of planned teaching on knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population.
- To associate the post-test knowledge scores regarding importance of diet and exercise for prevention of diabetes mellitus among the rural adult population with their selected demographic variables.

Operational definitions

Assess

In this study, it refers to evaluating the knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among rural adult population.

Effectiveness

In this study, it refers to improvement in the knowledge of rural adult population after planned teaching regarding importance of diet and exercise as measured by significant difference between pre-test and post-test knowledge score for

prevention of diabetes mellitus among rural adult population.

Planned teaching

In this study, planned teaching means a teaching to provide information regarding awareness on importance of diet and exercise for prevention of diabetes mellitus among rural adult population.

Knowledge

In this study, provide some information regarding prevention of diabetes mellitus by using planned teaching on importance of diet and exercise.

Diet

In this study, low carbohydrate diet, low calorie diet and high protein diet is advised for prevention of diabetes mellitus.

Exercise

In this study, brisk walking, water aerobics, swimming, or jogging types of exercise is advised and this exercise is doing for 30 minutes daily or regularly for prevention of diabetes mellitus.

Prevention

In this study, to stop or to control the diabetes mellitus for providing some information regarding diet and exercise therapy and regular checkup, follow up, diet plan, exercise schedule per day fixed for diabetes mellitus among rural adult population.

Diabetes mellitus

In this study, diabetes mellitus is a chronic disease caused by inherited and acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced.

Rural adult population

In this study, it refers that 30–50 years of people who are not aware about prevention of diabetes mellitus in a village area.

Ethical aspects

- Prior permission has been obtained from the institutional ethical committee.
- Prior permission will be obtained from sarpanch of grampanchayat
- Informed written consent will be obtained from the study subject.
- Confidentiality will be maintained by coding the information obtained from the subjects.

Sampling Criteria

Inclusive criteria

- Subject who are present at time of data collection.
- Subject who are willing to participate in the study.
- Subject who can read and write marathi and english
- Rural population in male and female age group 31 – 50 years.

Exclusive criteria

- Subject who are under gone health education program regarding diabetes mellitus.
- Subject who are known case of diabetes mellitus

METHODOLOGY

Non probability convenient sampling technique was used to select the sample. Quantitative research approach with pre-experimental one group pre-test post-test research design. The data collected during the month of December 2019 among rural adult population in Anji (Mothi). Total 70 samples were selected by using sample calculation formula with the help of prevalence rate. After obtaining consent from the subjects, socio demographic and structured knowledge questionnaire were administered and data were collected.

TOOLS

Socio demographic data sheet: It contains data regarding age, gender, education, occupation, income and dietary pattern.

Knowledge questions: This section contains 30 questions to assess the knowledge regarding importance of diet and exercise for prevention of diabetes mellitus.

Statistical analysis: The data was analyzed, by using descriptive and inferential statistics on the basis of objectives and hypothesis of the study. Analysis of effectiveness of planned teaching done with the help of student paired 't' test. Association between post-test knowledge scores and demographic variables were analyzed by chi-square test.

Scoring Technique

Level of knowledge score	Percentage of marks	Marks
Poor	0-20%	01-06
Average	21-40%	07-12
Good	41-60%	13-18
Very good	61-80%	19-24
Excellent	81-100%	25-30

RESULTS

In this study, majority of the subjects belonged to age group 36 – 40 years 21 (30%), majority of the subjects were males 38 (54.3%), majority of the educational status of subjects was secondary education 25 (35.7%), majority of the income of subjects 38 (54.3%) was Rs.10000 – 15000 is that, majority of occupational status of the subjects belonged to farmer 41 (58.6%) and majority diet pattern of subjects was vegetarian 39 (55.7%).

The finding of the study result showed that among all subjects, in pre-test score, 14.30% of subjects had average level of knowledge score, 55.70% had good level of knowledge score, 27.10% had very good level of knowledge score and 2.90% had excellent level of knowledge score. Post –test score was 61.43% of subjects had very good level of knowledge score and 38.57% had excellent level of knowledge score.

Mean knowledge score of pre-test was 16.21 ± 4.16 and post-test was 23.39 ± 2.55 . The study reported that the result regarding level of knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among the subjects in pre-test was less and after the implementation of the planned teaching post-test score was increased.

Evaluation of the effectiveness of planned teaching showed that in pre-test mean score 16.21 and standard deviation was 4.16. Post-test mean score 23.39 and standard deviation 2.55. The calculated 't' value i.e. 33.61 was much higher than the tabulated value at 5% level of significance for overall knowledge score of subject which was statistically acceptable level of significance. Hence, it was statistically interpreted that the planned teaching on knowledge regarding importance of diet and exercise for prevention of diabetes mellitus among subjects in selected area was effective.

CONCLUSION

The investigator concludes that the knowledge of target population was significantly improved after receiving information in the form of planned teaching regarding importance of diet and exercise for prevention of diabetes mellitus.

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