

A Experimental Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention of Cardiovascular Risk Factors among Diabetes Mellitus Clients in Selected Community Area Maharashtra

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Abstract: *This study draws attention to a pressing concern—India's growing diabetes burden and its undeniable link to cardiovascular risk. Despite advancements in medical treatments, individuals with Type II diabetes continue to face a disproportionately high risk of heart - related complications. What stands out in this research is the human - centered approach: instead of only focusing on clinical outcomes, it assesses whether a structured teaching programme (STP) can actually help people understand and prevent these risks. Conducted in a community setting in Maharashtra, this pre - experimental study involved 60 diabetes clients and used a pretest - posttest design to measure knowledge improvements. It is evident that participants initially lacked adequate awareness of cardiovascular prevention, but post - intervention results reflected a meaningful improvement. The jump in mean knowledge scores—from 18.3 to 24.2—suggests the STP wasn't just helpful; it was transformative in terms of awareness. Interestingly, there was no significant link between knowledge gains and demographic traits, hinting that educational interventions can work across diverse groups. That said, the relatively small and non - random sample limits the broader applicability. Still, this research offers a promising case for integrating structured educational tools into public health strategies aimed at diabetes management. In real - world terms, it reminds us that sometimes, a simple, targeted teaching session can tilt the scale toward healthier outcomes.*

Keywords: diabetes awareness, cardiovascular risk, structured teaching programme, Type 2 diabetes, community health education

1. Introduction

A healthy heart is the main source of your strength

India is the diabetic capital in the world. 41 millions having diabetes, every fifth diabetic in the world is an Indian. There were one million deaths due to diabetes mellitus in 2015. More than 80% of death occurs in low - and middle - income countries. Diabetes is one of the major health and development challenges of 21st century. Patients with type 2 diabetes have a well - documented increased risk for cardiovascular disease (CVD) that is more than two to three times higher than the risk seen in non - diabetic subjects. In spite of modern methods to treat diabetes and its complications, the increased risk is still substantial even if data on risk factor controls in national surveys have shown improving trends for blood pressure and lipid control, for example from Sweden. The most important CVD risk factors to detect, treat, and make follow - up visits for are elevated blood - pressure levels, dyslipidemia, and elevated low - density lipoprotein (LDL) cholesterol, as well as hyperglycemia and smoking. In addition, chronic inflammation, defects in fibrinolytic function, and adverse psychosocial conditions could all contribute to this risk, besides the impact of background factors that it is not possible to change such as age, gender, and diabetes duration.¹

2. Objectives of the Study

- 1) To assess the knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus clients.
- 2) To evaluate the effectiveness of structured teaching program regarding prevention of cardiovascular risk factors among diabetes mellitus clients.
- 3) To find out the association between pre - test knowledge scores with selected demographic variables regarding prevention of cardiovascular risk factors among diabetes mellitus clients.

3. Methodology

For any research work the methodology of investigation is of vital importance. Research methodology aims at helping the researcher to answer the research questions effectively, accurately, and economically, studying how research is done scientifically. The Research approach adapted for this study is Quantitative evaluative approach.

Pre - experimental one group pretest posttest research design judges the treatment by the difference between pre test post test scores without comparing with a control group.

The setting of this study is selected community area Maharashtra.

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The target population of the study includes diabetes mellitus clients.

The sample for the study comprises of 60 diabetes mellitus clients in a selected community, Maharashtra

Sampling refers to the process of selecting the portion of population to represent the entire population. In the present study the non - probability purposive sampling technique was used to select the samples. The instrument is a vehicle that could obtain data pertinent to the study and at the same time adds to the body of general knowledge in the discipline.

The first part of the tool consists of 3 items for obtaining information about the selected background factors such as age in yrs, gender, educational status, occupational status, family income (monthly) in rupees, dietary pattern and source of information. The researcher conducted individual structured questionnaire to collect the data and put a tick mark against the column provided.

The second part Questionnaire to assess the knowledge of diabetes mellitus clients regarding prevention of cardiovascular risk factors consists of 30 items. Total score is 30.

The knowledge level has been arbitrarily divided into three categories based on the diabetes mellitus clients scores in the structured questionnaire. The pilot study is the trial run study conducted before actual study in different population with similar characteristics. The data for pilot study was collected from 10 diabetes mellitus clients, in a selected community area, Maharashtra. The permission to conduct the pilot study was obtained from the Gram panchayat. 10 subjects were selected by non - probability purposive sampling. The purpose of the study was explained and confidentiality was assured. The tool was administered through questionnaire method to the subjects and data was collected. The analysis was done by using descriptive and inferential statistics.

For the main study before the data collection the investigator obtained the formal permission from the primary health centre, Pir Lote, to conduct the study. The investigator visited the community area on the given dates. After the pre - test, STP was administered. After 7 days post test was conducted using the same questionnaire to evaluate the effectiveness of STP.

The data to be analyzed is planned on the basis of objectives and hypothesis of the study. The data obtained will be analyzed by using descriptive and inferential statistical tests.

4. Result and Analysis

Statistical analysis is a method of rendering quantitative information meaningfully and intelligently. Statistical procedures enable the researcher to reduce, summarize, organize, evaluate, interpret and communicate numeric information.

Section I: Frequency and percentage distribution of socio - demographic variable of diabetes mellitus clients.

Section II: Assessment of level of knowledge in Pre test

Section III: Assessment of level of knowledge in Post test

Section IV: Effectiveness of structured teaching programme regarding prevention of cardiovascular risk factors among diabetes mellitus clients.

Section V: Association between the pretest knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus client.

The present study was undertaken to assess the effectiveness of structured teaching programme on knowledge of diabetes mellitus clients regarding prevention of cardiovascular risk factors in a selected community area Maharashtra. The study aimed at accomplishing the following objectives.

- 1) To assess the knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus clients.
- 2) To evaluate the effectiveness of structured teaching program regarding prevention of cardiovascular risk factors among diabetes mellitus clients.
- 3) To find out the association between pre - test knowledge scores with selected demographic variables regarding prevention of cardiovascular risk factors among diabetes mellitus clients.

Pre experimental single group pretest and post test design with quantitative evaluative approach was adopted for the study. A sample of 60 diabetes mellitus clients present in selected community area Maharashtra, was selected by using Non - probability Purposive sampling.

A structured questionnaire schedule was prepared and used for data collection, which consists of 2 parts. Part - I with 9 socio demographic data and Part - II with 30 items on various aspects of prevention of cardiovascular risk factors.

Final data was collected from 60 diabetes mellitus clients present in selected community area Maharashtra, first the pretest conducted by using questionnaire method then after few days STP conducted then after 7 days post test was conducted. The data were analyzed using Descriptive and inferential statistics.

5. Major findings of the study

Findings related to sample characteristics

- Majority of sample 22 (36.7%) of them were 29 - 39 yrs old.
- Majority of sample 43 (71.7%) were females,
- Majority of sample 22 (36.7%) of them were completed primary education.
- Majority of sample 44 (73.3%) of them were farmers.
- Majority of sample 26 (43.3%) of them were getting monthly below 10000 income.
- Majority of sample 32 (53.3%) of them were mixed vegetarian.
- Majority of sample 30 (50%) of them were getting information from mass media.
- Majority of sample 43 (71.7%) of them were type II diabetes mellitus.
- Majority of sample 26 (43.3%) of them were suffering from 1 - 3 years.

Findings related to assessment of level of knowledge regarding prevention of cardiovascular risk factors

- **In pretest** 21 (35%) of them were having inadequate knowledge, 36 (60%) of them were having moderately adequate knowledge and 3 (5%) of them were having adequate knowledge.
- **In posttest** 11 (18.3%) of them were having moderately adequate knowledge, 49 (81.7%) of them were having adequate knowledge and none of them were having inadequate knowledge.

Findings related to effectiveness of STP.

The mean pre - test score of 18.3 was increased to 24.2 after STP. This significant increase in post - test confirms that STP was effective.

Findings related to association of pre - test knowledge scores and selected variables.

Findings reveal that there is no significant association between pre - test knowledge score and demographic variables age in yrs, gender, educational status, occupational status, family income (monthly) in rupees, dietary pattern and source of information.

6. Discussion

This section attempts to discuss the findings of the study. The study was focused on “A experimental study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus clients in selected community area Maharashtra” However the conclusions drawn from this study should be seen under certain limitations. It is crucial to remember that the sample size was small and subjects were not fully matched due to constraints of time and other resources. The findings are discussed under the following headings.

- Findings related to demographic characteristics of sample.
- Distribution of subjects according to level of knowledge
- Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme
- Findings related to association of pre - test knowledge scores and selected demographic variables.

Findings related to demographic characteristics of sample:

In the present study, among 60 respondents majority 22 (36.7%) of them were 29 - 39 yrs old, 43 (71.7%) were females, 22 (36.7%) of them were completed primary education, 44 (73.3%) of them were farmers, 26 (43.3%) of them were getting monthly below 10000 income, 32 (53.3%) of them were mixed vegetarian, 30 (50%) of them were getting information from mass media, 43 (71.7%) of them were type II diabetes mellitus, and 26 (43.3%) of them were suffering from 1 - 3 years.

Distribution of subjects according to level of knowledge.

In the present study, in pretest 21 (35%) of them were having inadequate knowledge, 36 (60%) of them were having moderately adequate knowledge and 3 (5%) of them were having adequate knowledge. Where as in posttest 11 (18.3%) of them were having moderately adequate knowledge, 49

(81.7%) of them were having adequate knowledge and none of them were having inadequate knowledge.

Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme

In the present study, In pre test from mean was 18.3, Standard deviation was 5.46 whereas in posttest mean was 24.2, Standard deviation was 4.87, that indicates structured teaching programme was effective in increasing knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus clients.

Findings related to association of pre - test knowledge scores and selected demographic variables.

Findings related that there is no significant association between pre - test knowledge scores and selected demographic variables like age in yrs, gender, educational status, occupational status, family income (monthly) in rupees, dietary pattern and source of information.

7. Conclusion

On the basis of the findings of the study “A experimental study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of cardiovascular risk factors among diabetes mellitus clients in selected community area Maharashtra”, the below said conclusions were drawn. It brings out the limitations of the study picture; the implication are given on various aspects like Nursing practice, Nursing education, Nursing administration and Nursing research and also gives an insight to further studies.

The study shows that

- 1) The knowledge of diabetes mellitus clients regarding prevention of cardiovascular risk factors was inadequate when assessed in pre - test.
- 2) The STP tested in this study was found to be effective in improving the knowledge of subjects.
- 3) STP is an effective teaching method in improving the knowledge of diabetes mellitus.
- 4) The study proved that there is no significant association between pre - test scores and demographic variables like age in yrs, gender, educational status, occupational status, family income (monthly) in rupees, dietary pattern and source of information.

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