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A study to assess the effectiveness of planned teaching programme on knowledge regarding coronary artery disease among diabetic patients at selected hospital in Banaskantha, Gujarat

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Abstract
Background: Coronary artery disease (CAD) is a condition in which the arteries that supply blood to the heart muscle become narrow or blocked due to the buildup of plaque on their walls. The coronary arteries are responsible for delivering oxygen and nutrients to the heart muscle, which is essential for its proper functioning. When these arteries become narrowed or blocked, the heart may not receive enough blood flow, which can lead to a variety of symptoms and complications. The plaque that builds up on the walls of the coronary arteries is made up of cholesterol, fat, and other substances. Over time, this plaque can become calcified and harden, leading to a narrowing of the artery. This process is known as atherosclerosis.
Methods: This study included the Quantitative research approach, pre-experimental one group pre–test post-test research design. 60 Diabetic patients were selected by using Non-probability Convenient Sampling technique. On first day pre- test was done by using the Self-administered questionnaire, Explain about coronary artery disease. On 7th day post-test was done by using Self-administered questionnaire, to check the effect of planned teaching program on knowledge regarding coronary artery disease among the Diabetic patients. The data obtained were analyzed and interpreted by using both descriptive and inferential statistical in terms of frequency, percentage, and chi-square.
Results: Description of samples based on their demographic variable by Gender most of the respondent 65% belonged to the Male, by age in years most of the respondent i.e. 40%belonged to the age group of 41-60 years, by Religion most of the respondent 53.33% belonged to the Hindu, by monthly income most of the respondent 45% which are belonged Above Rs 10000, by source of information of the respondent 75% they are belonged to mass media regarding coronary artery disease. Post test score regarding knowledge of Diabetic patient regarding coronary artery diseases majority The result showed that the mean post-test knowledge score is 28.98 (80.50%) is greater than the mean pre-test knowledge score 14.96 (19.50). The above table also depicts that the enhancement in the knowledge of respondents is 14.02 (38.93%) supporting the post-test knowledge score are higher than the pretest knowledge score.
Conclusion: Planned Teaching Program on prevention of coronary artery diseases were significantly effective in improving knowledge among Diabetic Patients. knowledge level of Diabetic patients regarding coronary artery diseases is improved.

Keywords: Assess, effectiveness, planned teaching program, knowledge, coronary artery diseases, diabetic patients

Introduction
Coronary artery disease (CAD) is a condition in which the arteries that supply blood to the heart muscle become narrow or blocked due to the buildup of plaque on their walls. The coronary arteries are responsible for delivering oxygen and nutrients to the heart muscle, which is essential for its proper functioning. When these arteries become narrowed or blocked, the heart may not receive enough blood flow, which can lead to a variety of symptoms and complications [1]

There are several risk factors that can contribute to the development of CAD. These include high blood pressure, high cholesterol levels, smoking, diabetes, a family history of heart disease, obesity, and a sedentary lifestyle. By addressing these risk factors, individuals can help reduce their risk of developing CAD and other heart-related conditions [2].

Diabetes can cause damage to the walls of the blood vessels, making them more susceptible to the buildup of plaque that can lead to CAD. Additionally, high blood sugar levels can lead to inflammation throughout the body, which can contribute to the development of atherosclerosis. Over time, these processes can lead to the development of blockages in the coronary arteries, increasing the risk of a heart attack or other serious complications [3].

Moreover, the burden of CAD among individuals with diabetes is not evenly distributed across the globe. For example, the prevalence of CAD is particularly high in low- and middle-income countries, where access to healthcare and prevention strategies may be limited (Bloom *et al*., 2016). As such, there is a need for research that specifically addresses the unique challenges and opportunities for preventing and managing CAD in these settings [4].

Materials and Methods

Research design and Setting: Pre-experimental one group pre-test post-test research design was selected for this study.

Sample, Sample Size and Sampling Technique

The samples selected for the present study are Mothers of under-five children. The sample size were 60. The non-probability Convenient sampling techniques was used to select the sample. A 60 sample of Diabetic Patients were selected from selected hospital in Banaskantha, Gujarat.

Data Collection Tool and Technique

Demographic data Consist of selected socio-demographic variables such as Gender, Age, Religion, Income, source of health information. This section consists of 05 items.

Structured knowledge questionnaire on coronary artery disease among Diabetic Patients. This section consists of 25 items on selected aspects of coronary artery disease. Each item had one or more correct answers all of which were scored. Each correct answer was given a score of 'one' and wrong answer 'zero.' The total score was 25.

Results

Organization and presentation of the data

The collected data was entered in a excel master sheet for tabulation and statistical processing. The data were analysed and interpreted using descriptive and inferential statistics based on the objectives and hypothesis formulated for the present study.

The findings are presented under the following headings

Section A: frequency and percentage distribution of socio-demographic variables.

Section B: Distribution of respondents by Pre-test and Post-test level of knowledge regarding the coronary artery disease among Diabetic patients.

Section C: Effectiveness of the planned teaching programme.

Section A: Frequency and percentage distribution of Socio-demographic variables N =80

Table 1: Frequency and percentage distribution of socio-demographic variables.

Sl. No.	Demographic Variables		Frequency	Percentage
1	Age in Years	20-30	13	20%
		31-40	17	30%
		41-60	21	40%
		Above 60	9	10%
		Total	60	100%
2	Gender	Male	36	65%
		Female	24	35%
		Transgender	00	00%
		TOTAL	60	100%
3	Religion	Hindu	32	53.33%
		Muslim	18	30%
		Other	10	16.66%
		Total	60	100%
4	Monthly income	<10,000	8	7.5%
		10001-20,000	13	20%
		20,001-30,000	16	27.5%
		>30,000	23	45%
		Total	60	100%
5	Source of health information	Mass Media	45	75%
		Health Personal	08	13%
		Peer groups	05	08%
		Conference/Workshop	02	3.33%
		Total	60	100%

Age in year

Most of the respondent i.e. 40%belonged to the age group of 41-60 years, 30% respondent to age group of 31-40 years, 20% belonged to the age group of 20-30 year and 10% belonged to age group of above 60 years of age.

Gender

Most of the respondent 65% belonged to the Male, than 35% belonged to the Female, 00% respondent to Transgender.

Religion
Most of the respondent 53.33% belonged to the Hindu, 30% respondent to Muslim, and 16.66% belonged to other.

Monthly income
Most of the respondent 45% which are belonged Above Rs 30,000, than 27.5% belonged to the Rs. 20,001-30,000 monthly income, than 20.5% belonged to the Rs. 10001-20,000 monthly income, And 7.5% are responded to Rs <10,000.

Source of health information
Most of the respondent 75% they are belonged to mass media, 13% are responded to health personnel, 8% are responded to peer group, and 3.33% responded to conference/workshop.

Table 2: Distribution of respondents by Pre-test and Post-test level of knowledge regarding the coronary artery disease among Diabetic patients.

Level of knowledge	Score	Frequency		Percentage	
		Pre-test	Post- test	Pre-test	Post-test
Inadequate knowledge (0-33%)	0-8	37	00	61.66%	00%
Moderately knowledge (34-67%)	9-17	20	18	33.33%	30%
Adequate knowledge (68-100%)	18-25	03	42	5%	70%
Total	25	60	60	100%	100%

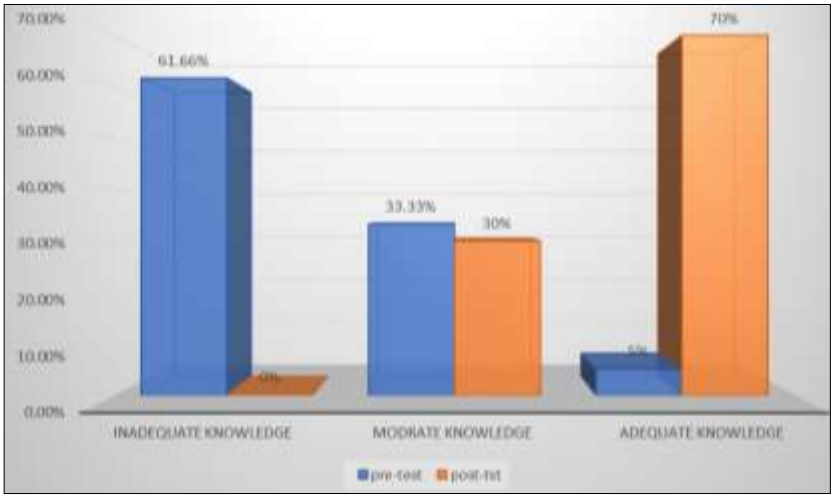

Fig 1: Level of knowledge

Table 02 and figure 01: Depicts the pre-test and post-test knowledge level of Diabetic patients. The result shows that in pre-test 5% of the respondents had adequate knowledge, 33.33 % had moderate knowledge, and 61.66 % had inadequate knowledge and in post-test 70% had adequate knowledge, 30% had moderate knowledge and 0% of the respondent had inadequate knowledge regarding use of planned teaching programme on knowledge regarding coronary artery disease among Diabetic patients.

Section C: Effectiveness of the Planned Teaching Programme N-60

Table 3: Effectiveness of the Planned Teaching Programme

Knowledge	Mean	Mean %	SD	Enhancement	Enhancement %	Df	Z- Value	Inference
PRE-TEST	14.96	19.50	4.46	14.02	38.93%	139	31.32	Significant
POST-TEST	28.98	80.50	2.80					

Table 03: The result showed that the mean post-test knowledge score is 28.98 (80.50%) is greater than the mean pre-test knowledge score 14.96 (19.50). The above table also depicts that the enhancement in the knowledge of respondents is 14.02 (38.93%) supporting the post-test knowledge score are higher than the pretest knowledge score. The data further represent that the 'z' value of 31.32 is significantly higher than the table value 1.96 at 0.05 level significance. This indicates that there was a difference in the pre-test and post-test knowledge score of respondents and the planned teaching programme is effective in improving the knowledge score of Diabetic patients.

H1: There is a significant difference between the pre and post-test knowledge score Diabetic patients. A hypothesis was tested at 0.05 levels. The calculated 'z' value 31.32 is significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there is a significant difference between pre-test and post-test knowledge score, hence the H_1 hypothesis was proved and accepted.

The chi-square test was carried out to determine the association between the post-test knowledge and socio-demographic variables such as gender, Age, religion, Income, Source of information.

Out of which gender $\chi 2=5.26$, Age $\chi 2=5.43$, religion $\chi 2=13.94$, Income $\chi 2=2.46$, Source of information $\chi 2=7.80$ were found to be significant associated with pre-test knowledge score at 0.05 level, Hence research hypothesis H2 was accepted.

H_2: There will be significant association between post-test knowledge regarding coronary artery disease with their selected socio demographic variables.

Conclusion

Study concluded that planned teaching programme was significantly effective in improving knowledge among diabetic patients regarding coronary artery disease.

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