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Study To Assess The Impact Of Health Awareness Programme On Knowledge Regarding Interrelation Of Risk Factors Between Diabetes And Cardiovascular Disease Among Young Adult Students At Selected College.

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Abstract: A Quasi experimental one group pre – test, post - test design was undertaken to evaluate the impact of health awareness programme on knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college. The objectives were to determine the level of knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students before administering health awareness programme and to evaluate the effectiveness of health awareness programme in terms of changes in the level of knowledge. Also, to find association between pre-test knowledge score and selected demographic variables

Index Terms **– Assess, Impact, Health Awareness Programme, Knowledge, Interrelation, Risk Factors, Diabetes, Cardiovascular Disease, Young Adult Students, College**

INTRODUCTION

The rising burden of cardiovascular diseases (CVDs) has become a major public health problem worldwide. CVDs are a group of diseases that predominantly impact the heart and blood vessels. These diseases are usually associated with atherosclerosis and an elevated risk of thrombosis due to blood clots. CVDs include diseases such as coronary heart diseases, peripheral vascular diseases; congenital heart diseases, pulmonary embolism, cerebrovascular diseases, and venous thrombosis .Cardiovascular risk factors (CVRFs) have an important role in the development of almost all CVDs. They can be divided into two categories: modifiable factors, including hypertension, diabetes, high cholesterol, obesity, physical inactivity, and inadequate intake of fruits and vegetables ; and non-modifiable factors such as age, sex , family history and ethnicity .CVDs remain the principal cause of death globally, with an estimation of 17.9 million deaths (32% of global deaths) each year reaching 23.3 million deaths by 2030, 85% of deaths are due to stroke and heart disease, and one-third of these fatalities are premature in adults under the age of 70.[1]

Diabetes mellitus (DM) is a major public health concern worldwide. According to the International Diabetes Federation, 537 million adults (aged 20–79 years) currently have diabetes, and this number is expected to increase to 783 million by 2045.There is lack of public awareness regarding DM. It is extremely critical to educate people regarding the risk factors for DM to reduce its incidence. A systematic review reported low DM knowledge about DM, its risk factors, and its complications among the Saudi population. Educating young adults about the risk factors and complications of DM may help improve their knowledge of DM. However, this cannot be achieved without an effective DM awareness program targeted at young adults. Moreover, assessing nutritional practices and habits is important for providing continuous feedback to the population during the program to improve their overall dietary intake and habits.[2]

The diabetes mellitus prevalence is still advancing and increasingly becoming one of the globally most severe and expensive chronic illnesses. The strong correlation between diabetes as well as the most prominent reason for diabetes and death in diabetic patients is

cardiovascular disorders. Health conditions like dyslipidemia, hypertension, obesity, and other factors of risk like the risk of cardiovascular are frequent in diabetic persons and raise the likelihood of heart attacks.[3]

In particular, several researchers have found diabetes mellitus-related biochemical pathways that raise the likelihood of cardiovascular disorder in people with diabetes individually. This review describes diabetes-cardiovascular disorder relationships, explores potential therapeutic mechanisms, addresses existing treatment, care, and describes the directions for the future for study.[4]

The link between type 2 diabetes and CVD has been known for decades. Compared to patients without diabetes, those with type 2 diabetes are two to four times more likely to experience cardiovascular events and are more likely to have worse outcomes after these events. About half of all diabetes-related fatalities can be attributed to cardiovascular causes.[5]

NEED OF THE STUDY

Diabetes is a major cause of morbidity and mortality worldwide and it contributes substantially to healthcare costs. In 2017 diabetes accounted for 425 million cases and its prevalence will rise to 629 million by 2040.[5] Type 2 Diabetes mellitus (T2DM) is the most common type of diabetes, accounting for approximately 90% of all cases. A global increase of unhealthy lifestyle, the aging of the population and the escalating rates of obesity among adults and children can partially explain the diabetes pandemic.[6]

Moreover, as a result of economic development and urbanization, the incidence of diabetes is rapidly increasing in the developing countries. A substantial portion of diabetes health burden can be attributed to diabetes related macrovascular and microvascular complications such as coronary heart disease (CHD), stroke, peripheral artery disease (PAD), heart failure (HF), diabetic retinopathy (DR). Cardiovascular disease (CVD) represents the main cause of morbidity and mortality in subjects with T2DM in whom it occurs approximately 15 years earlier than in people without diabetes and it is more common in women, who show a mortality rate from CVD higher than men when compared with the counterpart without diabetes (2–5 times vs 1–3 times). Proper control and treatment of diabetes is therefore crucial as the prevalence of the disease continue to mount. This review provides an overview of worldwide trends of diabetes-related cardiovascular complications, focusing on population-based studies.[7]

OBJECTIVES:-

1. To determine the pre- test knowledge score regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college.
2. To assess the impact of health awareness programme on knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college.
3. To find out the association between pre -test knowledge score with their selected demographic variables.

HYPOTHESIS

H1- There will be a significant difference between the mean pretest and posttest score on knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college.
H2- There will be a significant association between mean pre - test knowledge score with their selected demographic variables.

RESEARCH METHODOLOGY

The methodology section outline the plan and method that how the study is conducted. This includes Universe of the study, sample of the study, Data and Sources of Data, study's variables and analytical framework. The details are as follows;

Population and Sample

The study sample comprised of 100 young adults from selected college selected by convenient sampling technique.

Data and Sources of Data

Data was collected from young adults through questionnaire method .The questionnaire had 2 sections .the first section included demographic data like Age, Gender, Educational status of parents, Type of family, Area of residence, it also consist of information about DM and CVD related factors. The second section of questionnaire comprised the HDFQ (Heart Disease Fact Questionnaire). HDFQ is validated questions of 25 Items for mainly heart diseases and diabetes mellitus (DM) that was developed to tap into respondent's knowledge of major risk factors for the development of CVD. Approximately half of these items specifically address diabetes related risk factors .The HDFQ is readable to an average 13 years old and imposes little burden .Risk factors with possible answer of 'True, False ,And I Don't Know. The score were calculated by giving one point for each correct score and zero point for

incorrect answer or I don't know response .The total knowledge score was calculated by summing the points for the correct answer and then grading the score out of 25.

Theoretical framework

The variable of the study contain dependent and independent variables. The study used health awareness programme as independent variable and knowledge regarding interrelation of risk factors between diabetes and cardiovascular diseases among young adults as dependent variable. The beneficiary's health awareness programmes were young adults from selected college. The key areas where the students needed to be assessed and educated were

- Risk factors of CVD
- Risk factors of diabetes mellitus
- Interrelation of CVD and DM with special emphasis on modifiable and non-modifiable risk factors.

Their knowledge was pre assessed by using HDFQ-25 Questionnaire. Then after health awareness program was delivered and post test was conducted after 7 days.

Statistical tools

Descriptive Statistics

DATA INTERPRETATION, ORGANIZATION OF DATA: TABLES, FIGURES AND GRAPHS

The data collected of the study was classified, organized and analyzed under following sections:-

SECTION I

Deals with analysis of demographic data of young adult students at selected colleges in terms of frequency and percentage.

SECTION II

Deals with analysis of data related to assessment of pretest & post test knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college in terms of frequency and percentage.

SECTION III

Deals with analysis of data related to the effectiveness of health awareness programme on knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college.

SECTION IV

Deals with analysis of data related to the association between knowledge score regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students with selected demographic variables.

SECTION I

Deals with analysis of demographic data of young adult students at selected colleges in terms of frequency and percentage.

Table 1: Frequency & percentage distribution of young adult students at selected colleges

Sr. No.	Variable	Groups	Frequency	Percentage
1	**Age (in years)**	18-20	36	36.00
		21-22	44	44.00
		23-24	20	20.00
2	**Gender**	Male	34	34.00
		Female	66	66.00
		Transgender	0	0.00
3	**Educational status of parents**	No formal education	0	0.00
		Primary education	0	0.00
		Secondary education	10	10.00
		Higher Secondary	38	38.00
		Degree / Diploma	41	41.00
		Post graduate	11	11.00
4	**Type of family**	Nuclear family	41	41.00
		Joint family	28	28.00
		Extended family	31	31.00
5	**Area of residence**	Rural	63	63.00
		Urban	37	37.00

Sr. No.	Variable	Groups	Frequency	Percentage
6	Place of stay	Hostel / PG	26	26.00
		House	74	74.00
7	Family Medical History of cardiovascular diseases	Present	46	46.00
		Absent	44	44.00
		Don't Know	10	10.00
8	Personal Medical History of Cardiovascular Disease	Yes	0	0.00
		No	100	100.00
9	Family Medical History of Diabetes	Present	16	16.00
		Absent	84	84.00
		Don't Know	0	0.00
10	Personal Medical History of Diabetes	Yes	4	4.00
		No	96	96.00
11	Previous source of information about cardiovascular diseases/ Diabetes	Friends	8	8.00
		Parents & family	26	26.00
		Teachers	7	7.00
		Health Professionals	23	23.00
		Mass Media	36	36.00
		Seminars	0	0.00
		No previous information	0	0.00

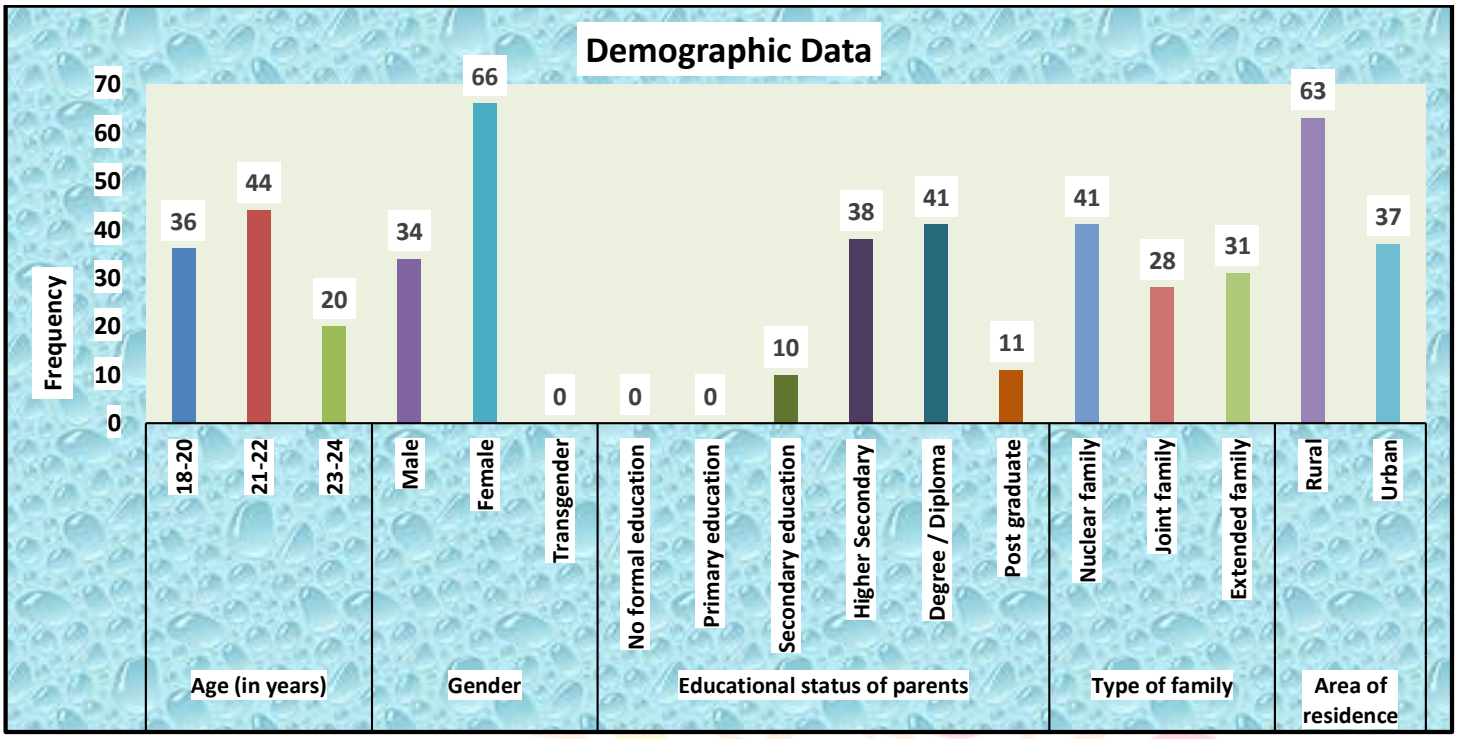

Figure No-1: Distribution of young adult students at selected college

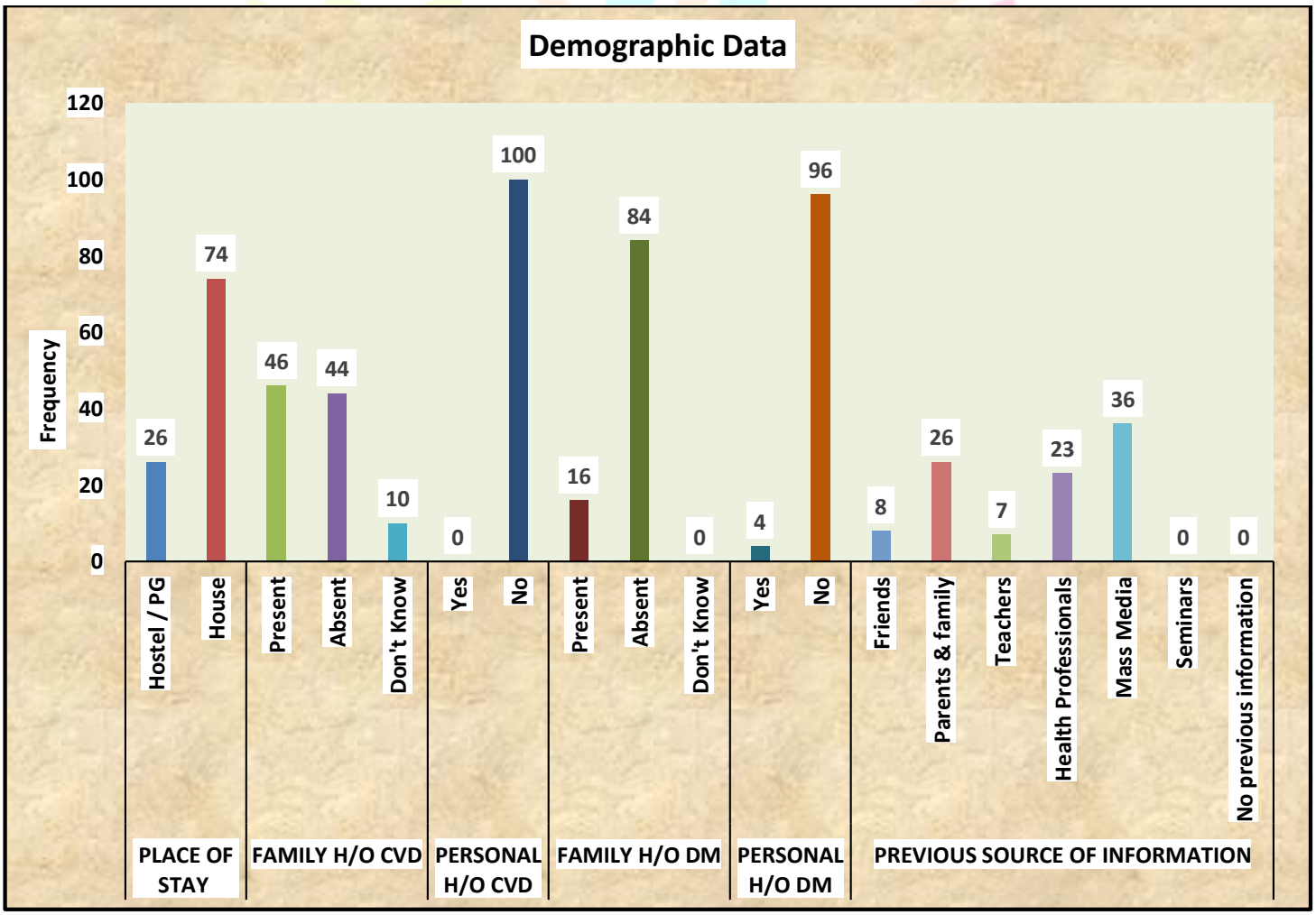

Figure No-2: Distribution of young adult students at selected colleges

SECTION II

Deals with analysis of data related to assessment of pretest & posttest knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college in terms of frequency and percentage.

Table 3: General assessments of Knowledge- PRE test

Variable	Groups	Score	Pre Test	
			Frequency	Percentage
KNOWLEDGE	Low	0-12	84	84.00
	Moderate	13-17	16	16.00
	Good	18-25	0	0.00
KNOWLEDGE	Minimum		5	
	Maximum		16	
	Average (SD)		8.78 (2.32)	

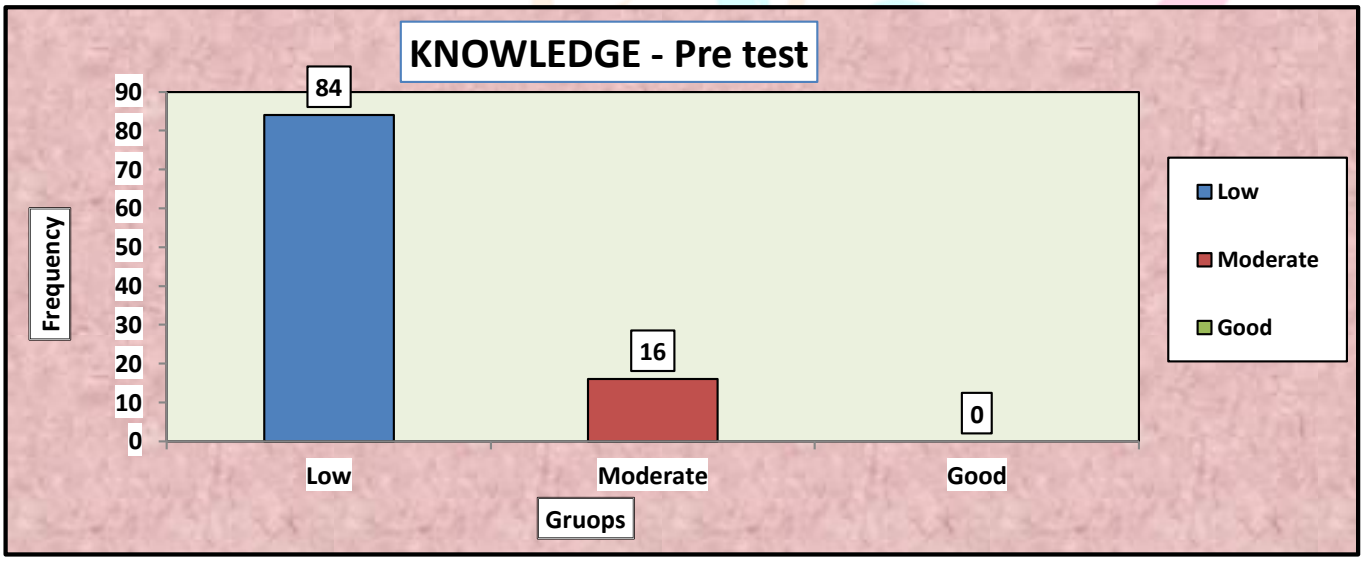

Figure No-3: General assessments of Knowledge- PRE test

Table 4: General assessments of Knowledge- POST test

Variable	Groups	Score	Post Test	
			Frequency	Percentage
KNOWLEDGE	Low	0-12	0	0.00
	Moderate	13-17	42	42.00
	Good	18-25	58	58.00
KNOWLEDGE	Minimum		13	
	Maximum		23	
	Average (SD)		20.22 (3.11)	

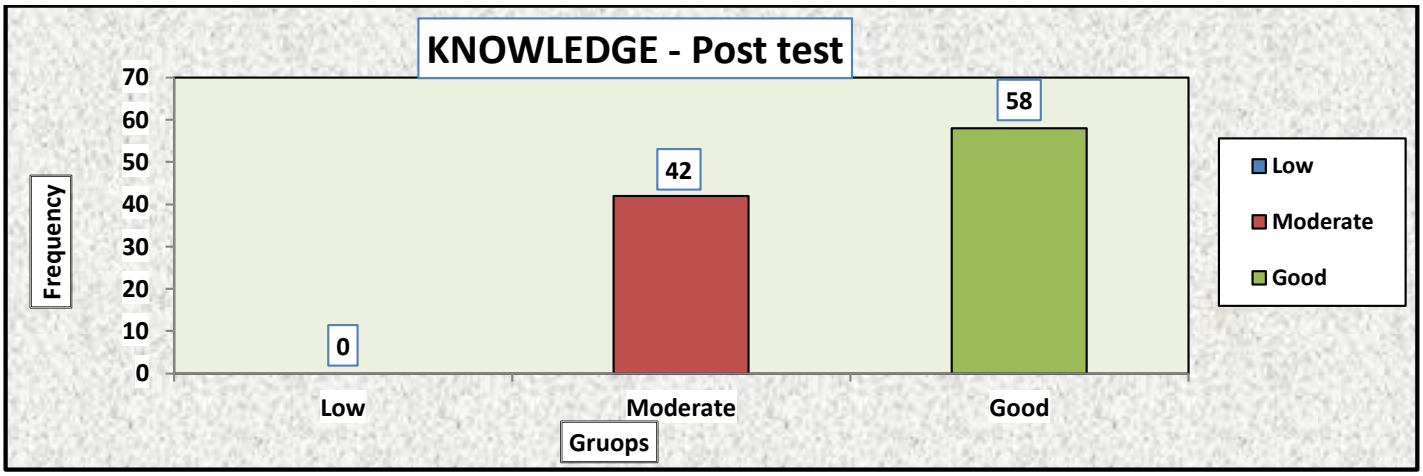

Figure No-4: General assessments of Knowledge- POST test

GENERAL ASSESSMENTS OF KNOWLEDGE- PRE & POST TEST

For assessment purpose the total score of knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college was divided in to three groups like low level (0-12 score), moderate (13-17 score) and good (18-25 score).

Pre Test:

At the time of pretest, assessment of knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college, 84% of them had low level knowledge, 16% moderate knowledge and no one of them had good knowledge.

Average knowledge score at the time of pretest was 8.78 with standard deviation of 2.32. The minimum score of knowledge was 5 with maximum score of 16.

Post Test:

At the time of posttest, assessment of knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college, no one of them had low level knowledge, 42% moderate knowledge and 58% of them had good knowledge.

Average knowledge score at the time of posttest was 20.22 with standard deviation of 3.11. The minimum score of knowledge was 13 with maximum score of 23.

Table 5: General assessments of Knowledge- PRE test and POST test

Variable	Groups	Score	Pre Test		Post Test	
			Frequency	Percentage	Frequency	Percentage
KNOWLEDGE	Low	0-12	84	84.00	0	0.00
	Moderate	13-17	16	16.00	42	42.00
	Good	18-25	0	0.00	58	58.00
KNOWLEDGE	Minimum		5		13	
	Maximum		16		23	
	Average (SD)		8.78 (2.32)		20.22 (3.11)	

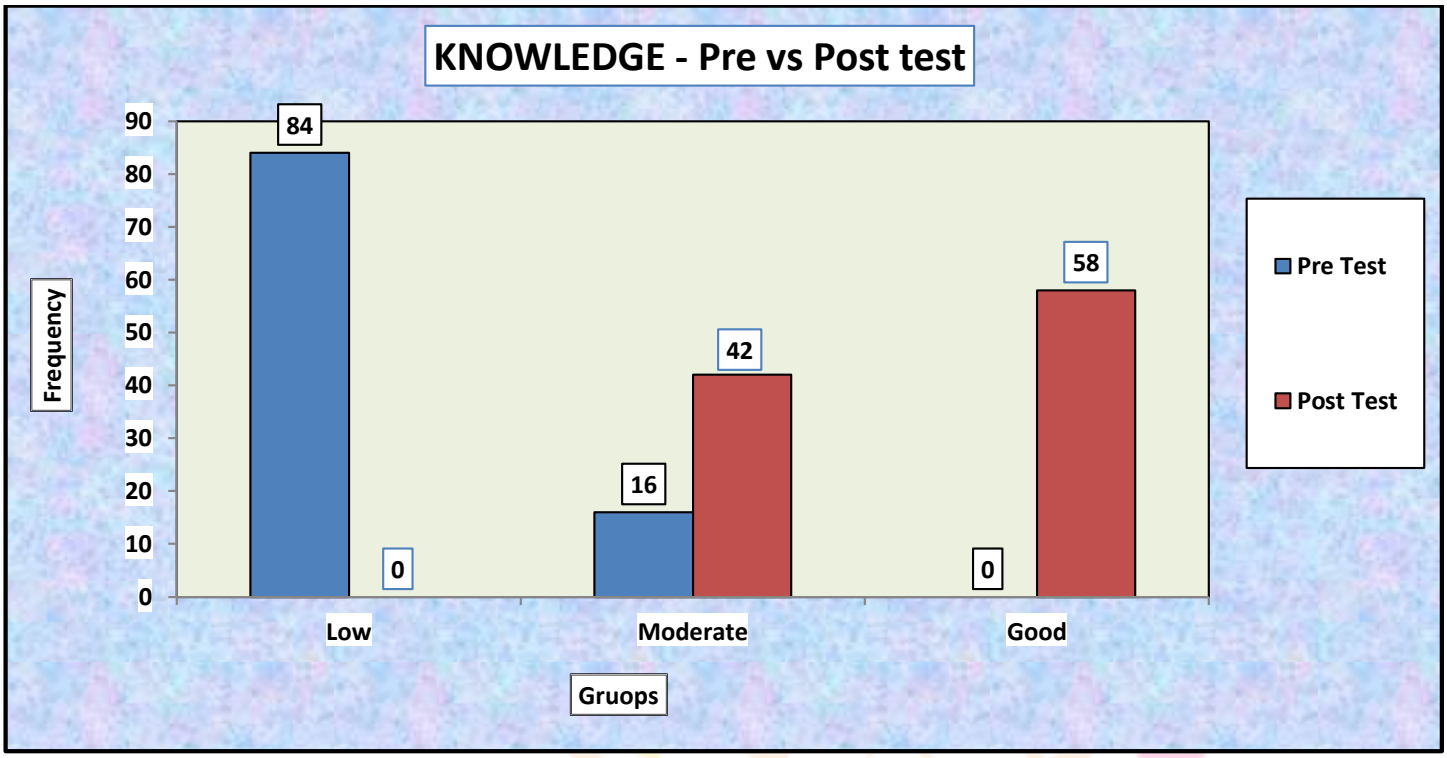

Figure No 5: General assessments of Knowledge - PRE & POST test

SECTION III

Deals with analysis of data related to the effectiveness of health awareness programme on knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students at selected college.

Table 6: Comparison of the pre and posttest Knowledge (paired t test)

Group	Frequency	Mean	S.D.	t value	P value
Pre Test	100	8.78	2.32	30.50	0.000
Post Test	100	20.22	3.11		

The comparisons of pretest and posttest means of knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students were done by paired t test. The test was conducted at 5% level of significance.

The pretest average score was 8.78 with standard deviation of 2.32. The posttest average score was 20.22 with standard deviation of 3.11. The test statistics value of paired t test was 30.50 with p value 0.00. The p value less than 0.05, hence **H1 accepted that means there is significant difference in pretest and posttest knowledge.**

Shows that, health awareness programme on knowledge regarding interrelation of risk factors between diabetes & cardiovascular disease among young students was effective.

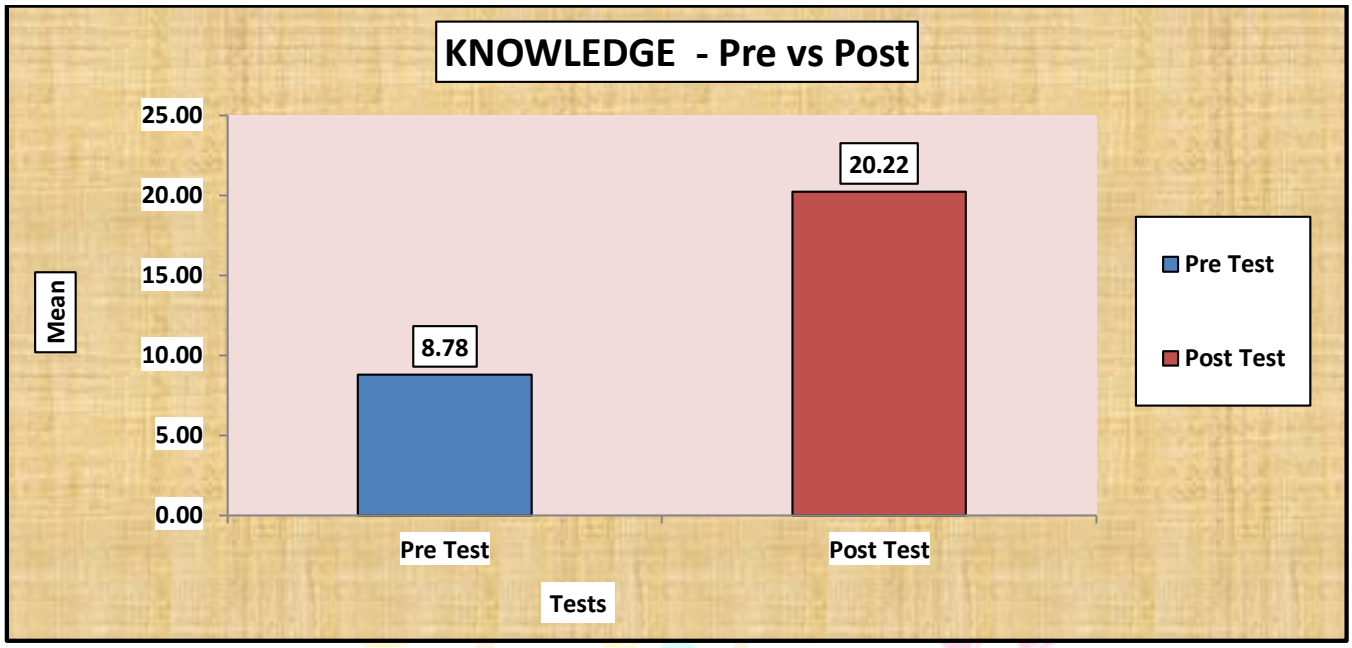

Figure 6: Comparison of average pre and posttest Knowledge score

SECTION IV

Deals with analysis of data related to the association between knowledge score regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students with selected demographic variables.

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

Table 7: Association of Knowledge with demographic variables

Variable	Groups	KNOWLEDGE - PRE		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Age (in years)	18-20	19	17	0.36	2	0.83	Not Significant
	21-22	21	23				
	23-24	11	9				
Gender	Male	16	18	0.32	1	0.57	Not Significant
	Female	35	31				
	Transgender	0	0				
Educational status of parents	No formal education	0	0	0.18	3	0.98	Not Significant
	Primary education	0	0				
	Secondary education	5	5				

	Higher Secondary	20	18				
	Degree / Diploma	20	21				
	Post graduate	6	5				
Type of family	Nuclear family	22	19	0.61	2	0.74	Not Significant
	Joint family	15	13				
	Extended family	14	17				
Area of residence	Rural	38	25	5.92	1	**0.015**	**Significant**
	Urban	13	24				

Table 8: Association of Knowledge with demographic variables

Variable	**Groups**	**KNOWLEDGE - PRE**		**Chi Square**	**d.f.**	**p value**	**Significance**
		below Md	**Above Md**				
Place of stay	Hostel / PG	16	10	1.56	1	0.21	Not Significant
	House	35	39				
Family Medical History of cardiovascular diseases	Present	25	21	0.71	2	0.70	Not Significant
	Absent	22	22				
	Don't Know	4	6				
Personal Medical History of Cardiovascular Disease	Yes	0	0	* Cannot compute Chi-Square			
	No	51	49				
Family Medical History of Diabetes	Present	9	7	0.2	1	0.65	Not Significant
	Absent	42	42				
	Don't Know	0	0				
Personal Medical History of	Yes	0	4	4.3	1	**0.037**	**Significant**

Diabetes	No	51	45				
Previous source of information about cardiovascular diseases/ Diabetes	Friends	5	3	2.4	4	0.66	Not Significant
	Parents & family	14	12				
	Teachers	5	2				
	Health Professionals	10	13				
	Mass Media	17	19				
	Seminars	0	0				

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES – PRE TEST

The chi square test was used to see association between knowledge score regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students with selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For demographic variables, area of residence and personal medical history of diabetes, p value of the association test with pre knowledge was less than 0.05. That means, the knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students was associated with these demographic variables.

Concludes that there was significant association of these demographic variables with the pretest knowledge. Hence H2 Accepted.

No Significant Association:

For demographic variables, age, gender, educational status of parents etc., p value of the association test with pre knowledge was more than 0.05. That means, the knowledge regarding interrelation of risk factors between diabetes and cardiovascular disease among young adult students was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the pretest knowledge.

RESULTS AND DISCUSSION

Demographic variable

The demographic characteristic shows that ,the majority of young adults belongs to age group 21-22 years 44 (44%), according to gender of the young adults at selected college majority of them were females 66% , in the study according to educational status of parents majority 41(41%) did degree /diploma, according to type of family 41 (41%) belongs to nuclear family, (63%) of young adults reside in rural area, according to place of stay 74(74%) of them stay in house, majority 46 (46%) of them stated medical history of cardiovascular disease, according to study of young adults no-one having the personal medical history of cardiovascular diseases, majority84 (84 %) of young adults do not have family medical history of diabetes, 96(96%) of young adults do not have personal medical history of diabetes ,data related to previous source of information cardiovascular disease /diabetes, the majority of young adults got information from mass media that is 36(36%.)

During Pretest it was found that young adults have low knowledge score with 84%, 16 had moderate knowledge & none of them had good knowledge.

Whereas in posttest nobody had low knowledge, 42% of young adults had moderate knowledge & 58% had good knowledge score.

The pretest average score was 8.78 with standard deviation of 2.32.The post test average score was 20.22 with standard deviation of 3.11.The statistics value of paired -t test was 30.50 with p value 0.00.The p value is less than 0.05hence H1 hypothesis is accepted which states that there will be a significant difference between the mean pre test and post test score on knowledge regarding interrelation of risk factors between diabetes and cardiovascular diseases a month young adults at selected college

For the demographic variables the association of knowledge score with area of the residence and personal medical history of diabetes are significant, hence H2 accepted for this demographic variable.

Health awareness programme was found to be effective in enhancing young adult's knowledge. Participants gained significant knowledge after its exposure. As the prevalence of DM continues to rise, associated CVD - through both traditional CV risk factors and the direct effects of DM on CVD - can also be expected to rise. Accordingly, proper control and treatment of DM, along with aggressive treatment of associated CV risk factors is central to curbing the growing prevalence and progression of DM and CVD.

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REFERENCES

1. Yavagal,(2001): Coronary artery disease epidemic in Indians; A cause for alarm and call for action. Journal

of Indian Medical Association, 98(11), 694-702.

2. Athavale AV, Durge PM, Zodpey SP, and Deshpande SH. ,(2000) :Prevalence and risk factors of coronary

heart-disease in sedentary workers: Indian J Indus Med ,Jul-Aug, 43(2),18-20.

3. Vishwanathanmohan, and raj Deepa, (2001) : Prevalence of heart disease among selected urban

population in South India : Journal of American College of Cardiology,:38(4),682-687.

4. Newton A, (2002): A study of active myocardial infarction in young adults: Journal of Indian Medical Association, Apr; 100(4)

5. The Interplay Between Diabetes, Cardiovascular Disease, and Kidney Disease - Chronic Kidney Disease and Type 2 Diabetes - NCBI Bookshelf (nih.gov)

6. Diabetes and cardiovascular disease: inter-relation of risk factors and treatment | Future Journal of Pharmaceutical Sciences | Full Text (springeropen.com)

7. Petersen PH, Jørgensen LG, Brandslund I, De Fine Olivarius N, Stahl M. Consequences of bias and imprecision in measurements of glucose and hba1c for the diagnosis and prognosis of diabetes mellitus. Scand J Clin Lab Invest Suppl. 2005;**240**:51–60.

8.Julie Wagner JS, Kimberly Lacey KT, Deborah Chyun H. Development Of Questionnaire To Measure Heart Disease Risk Knowledge In People With Diabetes: The Heart Disease Fact Questionnaire, Patient Education And Counseling (PEC). April 2020 14 Issue 2; Pages 154- 160