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**Dr. Pallavi Pathania**  
Ph.D. Medical Surgical  
Nursing, Assistant Professor  
Shimla Nursing College,  
Shimla, Himachal Pradesh,  
India

## **A pre-experimental study to assess the effectiveness of IEC package on knowledge regarding coronary artery disease among students in Shimla Nursing College, Annandale, Shimla, Himachal Pradesh, 2018**

**Dr. Pallavi Pathania**

### **Abstract**

The global burden of cardiovascular disease is rapidly increasing due to rise in the incidence and prevalence in the developing countries. By 2020 heart disease will become the leading cause of both death and disability worldwide. CAD is the most common type of heart disease. CAD happens when the arteries that supply blood to heart muscle become hardened and narrowed. Nurses play a key role in the prevention of CHD viewing their responsibility not only as carers but as health educators. One might expect that, given the education background and hands on experience, nurses would have a heightened awareness of CHD and consequently provide sufficient health education/promotion to facilitate better. It is consequently important to determine CHD knowledge and Health behaviours within the future population of nurses that will provide such strategies that is student nurses. Student nurses could be potential advocates for CHD prevention and possibly effectively help make an impact on the CHD prevalence that we see today. During researcher clinical exposure, Nursing students have many misconceptions regarding cardiovascular diseases mainly coronary heart disease. This study will help to clear the doubts and misconceptions of nursing students regarding coronary artery disease The objective of the study is to assess the knowledge regarding coronary artery disease among nursing students before and after administration of IEC package. This pre-experimental study included 100 samples of general nursing and midwifery students in Shimla Nursing College, Annandale, Shimla. The study was conducted at Shimla nursing college Annandale, Shimla. The samples were selected by using convenient sampling technique. The knowledge of the samples was assessed by using structured questionnaire method. These samples were assessed for pre-existing knowledge regarding coronary artery disease by means of pre-test and an IEC package regarding Coronary Artery Disease was administered thereafter. In the end a post-test was conducted. The data collected was organized and analysed statistically. The results of the study shows that the pre-test mean score was 17.23 and that of post-test was 22.14. The results of post-test showed that 71% of students had adequate knowledge, 27% had moderate and 2% had inadequate knowledge regarding coronary artery disease which is considered as significant level of knowledge. The conclusion of the study revealed that there is a significant improvement in the knowledge regarding coronary artery disease among students after providing IEC package.

**Keywords:** Coronary artery disease, IEC package, effectiveness, knowledge, students

### **Introduction**

#### **An ounce of prevention is worth a pound of cure**

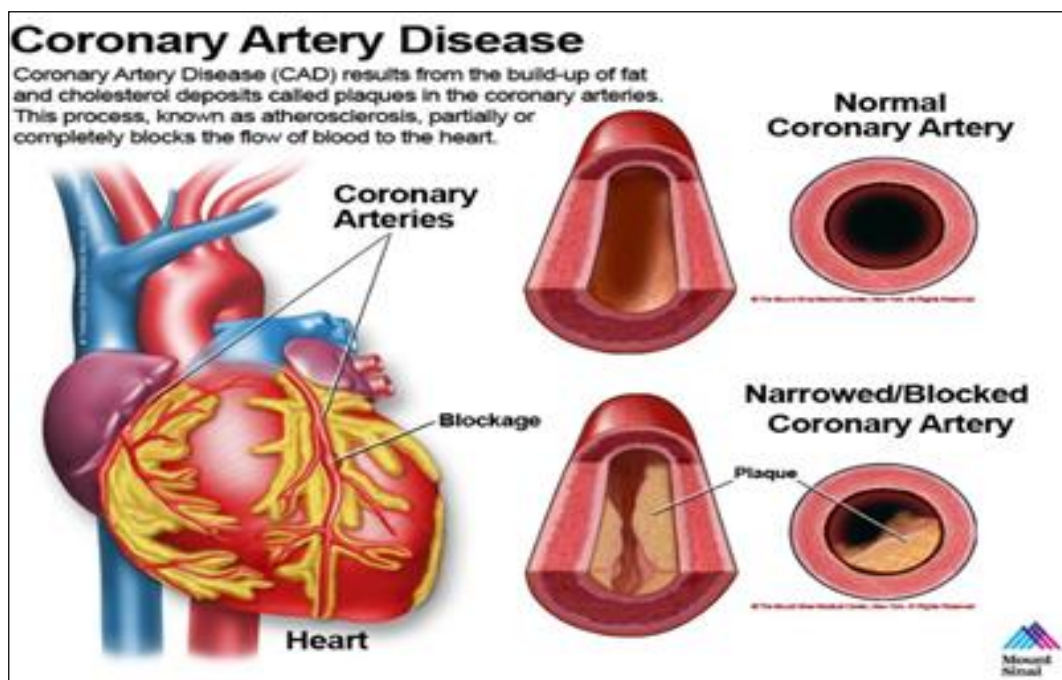
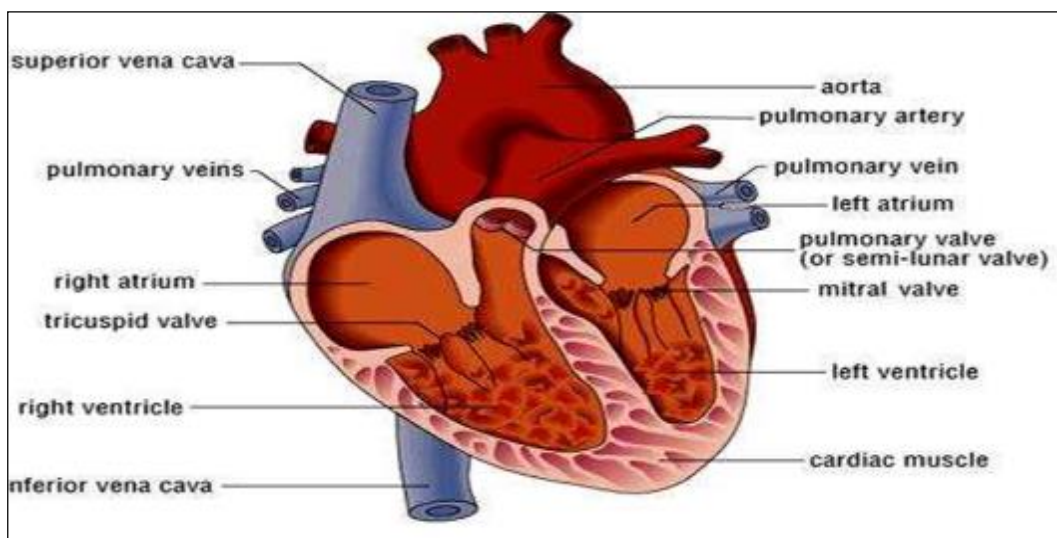
CAD, is also called Coronary arteriosclerosis, Coronary atherosclerosis. Coronary artery disease (CAD) is the most common type of heart disease. It is the leading cause of death in the United States in both men and women. CAD happens when the arteries that supply blood to heart muscle become hardened and narrowed. This is due to the build-up of Coronary artery disease should now be considered an important public health problem due to epidemiological transition characterized by changing lifestyles and a problem related to interplay of factors with regards to their existence, casualty and attributes. The global burden of cardiovascular disease is rapidly increasing due to rise in the incidence and prevalence in the developing countries. India is a developing country is now in the middle of the coronary artery epidemic. By 2020 heart disease will become the leading cause of both death and disability worldwide, with the number of fatalities

### **Correspondence**

**Dr. Pallavi Pathania**  
Ph.D. Medical Surgical  
Nursing, Assistant Professor  
Shimla Nursing College,  
Shimla, Himachal Pradesh,  
India

projected to increase to more than 20 million a year and to more than 24 million a year by 2030. Coronary artery disease is caused by a narrowing of the blood vessels that lead to the heart. This occurs when fatty deposits, called atherosclerosis, form along the vessel walls. If these fatty deposits become thick enough to stop blood flow, a heart attack or myocardial infarction results, which can lead to disability or death. The risk of heart disease can be reduced through lifestyle changes -- a healthy diet, physical activity and elimination of tobacco use. Risk indicators like cholesterol levels and blood pressure can be monitored to assess the effectiveness of drug treatments and lifestyle changes in reducing the chances of heart disease. In India the increased prevalence of cardiac risk factor is mainly due to greater severity and extent of CAD including diabetes, hypertension, increased markedly in India. Coronary artery disease (CAD) is the world-wide leading cause of death not only in high-income countries but also increasingly in

developing countries. Nurses play a key role in the prevention of CHD viewing their responsibility not only as carers but as health educators. One might expect that, given the education background and hands on experience, nurses would have a heightened awareness of CHD and consequently provide sufficient health education/promotion to facilitate better HB. However, there seems to be evidence that suggests substantial CHD knowledge gaps in nurses and thus it is important to determine if nurses are suitably equipped to provide such health education/promotion. Providing this evidence is being established for the future development of CHD prevention, it is consequently important to determine CHD knowledge and Health behaviours within the future population of nurses that will provide such strategies that is student nurses. Student nurses could be potential advocates for CHD prevention and possibly effectively help make an impact on the CHD prevalence that we see today.



In view of the wide prevalence of coronary artery disease it is necessary to focus attention to preventive aspect, rather than curative aspect alone. Coronary artery disease is the

most prevalent non-communicable disease and the main risk factor identified among students is physical activity and sedentary lifestyle, this insight leads the investigator to

assess the knowledge of nursing students to prepare and evaluate the effectiveness of IEC package on knowledge regarding coronary artery disease.

### Methodology

Research methodology is the significant part of any research study, which enables the researcher to project a blue print of the research understanding. The research methodology includes the strategies to be used to collect and analyse the data to accomplish the research objectives. The methodology of research indicates the general pattern organizing the procedure for gathering valid and reliable data for investigation. It deals with the description of methodology and different steps, where taken for gathering and organizing data for investigation. It includes research approach, research design, the setting, the population, and sample, and sampling technique, development and description of tool, procedure for data collection and the plan for data analysis.

The research approach adopted in the study was Pre-Experimental research approach. A Pre-experimental research design was selected for the present study. The study was conducted at Shimla Nursing College, Annandale, Shimla, Himachal Pradesh, 2018. Total Sample were 100 Female GNM Students of Shimla Nursing College. Sample size of the study subject was 100 Students. With the extensive review of literature and discussion with the experts and with the investigator personal and professional experience 'Structured questionnaires were developed to assess the knowledge of students regarding coronary artery disease. In the present study 'Structured questionnaire' was used as a tool for data collection. The tool for the data collection consists of two Sections. Section-1: Demographic variables is used to collect data about certain characteristics of sample population. Section-2: Structured questionnaires were developed to assess the knowledge of students regarding coronary artery disease. Validity of tool was established by experts from nursing field for content. The reliability of the tool was determined by using split half method and the tool was found to be reliable. The 'r' value calculated was  $r=0.71$ , hence the tool was considered reliable for proceeding with the main study. Ethical approval to conduct the study was obtained from the head of the college. Written consent will be taken from the Principal of the college. Informed consent will be taken from the students of the college. Data collection will not interfere in the routine working of the area. Data collection will be carried out by using developed & validated structured questionnaire. The purpose and details of the study was explained to the study subjects. Assurance was given regarding the confidentiality of the data collected. The tool for the data collection consists of three phases. Phase 1: Assess the Pre-existing level on knowledge regarding coronary artery disease by conducting a pre-test on 26<sup>th</sup> april 2018 among students of Shimla nursing college Annandale, Shimla. Phase 11: On 27<sup>th</sup> april 2018 intervention is given in the form of IEC package regarding coronary artery disease to the students of Shimla nursing college Annandale, Shimla. Phase 111: After that on 4<sup>th</sup> may the post-test was conducted to assess the level on knowledge regarding coronary artery disease among students of Shimla nursing college Annandale, Shimla.

Researcher observed the language of the tool was clear and easily understood. After that researcher thanked the study subject.

### Result

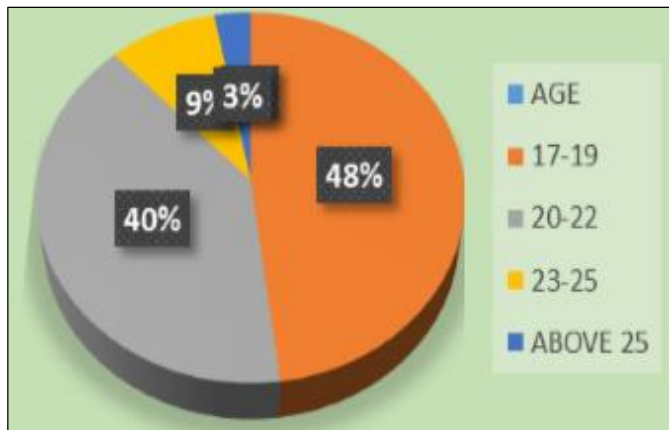
#### Section A: Descriptin of demographic variables among nursing students

**Table 1:** Frequency and percentage distribution of GNM students based on demographic variables such as age, educational status, class perused by subject, religion, marital status, community, dietary habits, family history of heart diseases, previous knowledge regarding CAD, source of information regarding CAD. N=100

S. No	Demographic variables	Number	Percentage
1	<b>Age</b>		
	17-19 years	48	48%
	20-22 years	40	40%
	23-23 years	9	9%
	Above 25 years	3	3%
2	<b>Educational Status</b>		
	Graduate	5	5%
	Undergraduate	82	82%
	Diploma	13	13%
3	<b>Class Perused by Subject</b>		
	1 <sup>st</sup> year	31	31%
	2 <sup>nd</sup> year	35	35%
	3 <sup>rd</sup> year	34	34%
4	<b>Religion</b>		
	Hindu	95	95%
	Sikh	4	4%
	Bodh	1	1%
	Christian	0	0%
	Any other	0	0%
5	<b>Marital Status</b>		
	Married	10	10%
	Unmarried	90	90%
	Widow	0	0%
6	<b>Community</b>		
	Urban	58	58%
	Suburban	9	9%
	Rural	33	33%
7	<b>Dietary Habits</b>		
	Vegetarian	66	66%
	Non-vegetarian	32	32%
	Any other	12	12%
8	<b>Family History of Heart Disease</b>		
	Yes	9	9%
	No	91	91%
9	<b>Previous Knowledge Regarding CAD</b>		
	Yes	68	68%
	No	32	32%
10	<b>Source of Informtion Regarding CAD</b>		
	Health care profession	22	22%
	Teachers	65	65%
	Parents	1	1%
	Mass media	1	1%
	Any other	11	11%

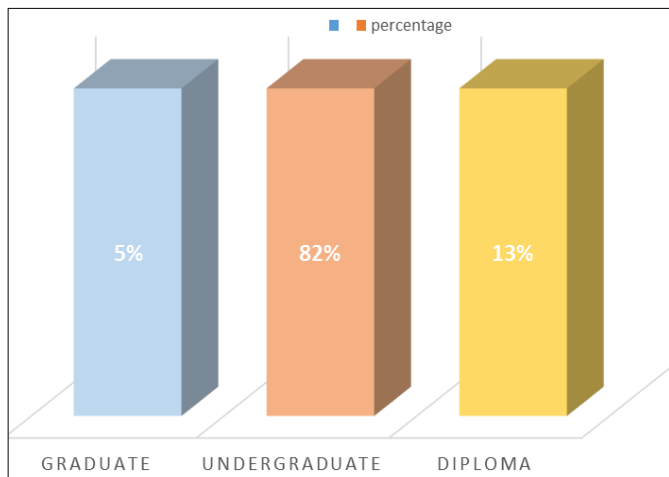
Table 1 shows the frequency and percentage distribution of demographic variables with respect to Age, Educational status, Class perused by subject, Religion, Marital status, Community, Dietary habits, Family history of heart disease, Previous knowledge regarding CAD, Source of information regarding CAD.

**1. Frequency and percentage distribution of study subject as per age**



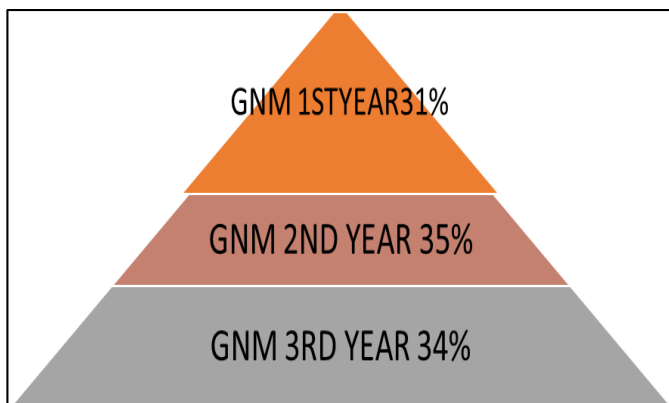
**Fig 1:** reveals that maximum number of girls that is 48% were in the age group of 17-19, 40% were in the age group of 20-22 years, 9% were in the age group of 23-25 and 3% in the age group of above 25 years.

**2. Frequency and percentage distribution of study subject as per educational status**



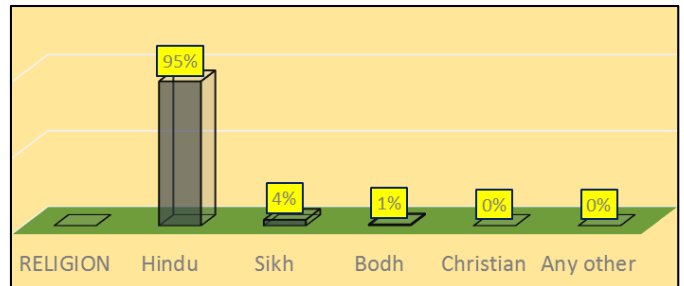
**Fig 2:** reveals that maximum number of girls undergraduate that is 82% and 13% of the girls having diploma, and 5% are graduate.

**3. Frequency and percentage distribution of study subject as per class perused by subject**



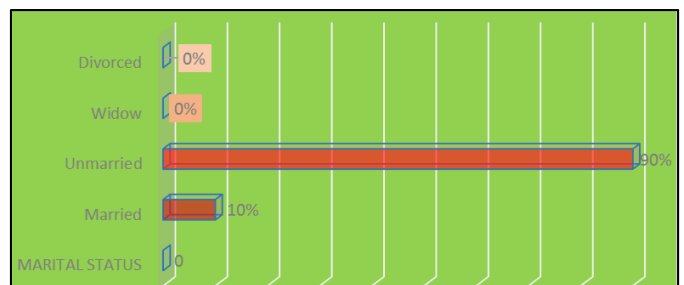
In figure 3 we conclude that there are 31% girls in GNM 1<sup>st</sup> year and 35% girls in GNM 2<sup>nd</sup> year and 34% in GNM 3<sup>rd</sup> year.

**4. Frequency and percentage distribution of study subject as per religion**



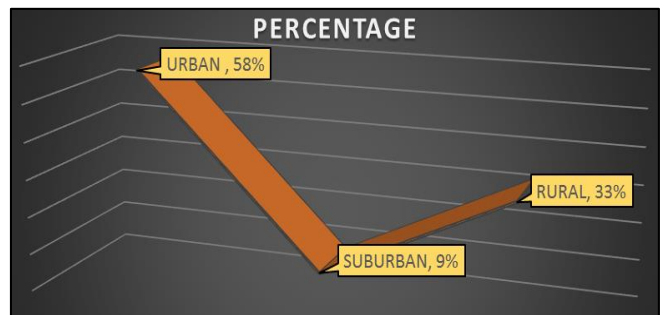
**Fig 4:** reveals that 95% of the girls are Hindu, 4% are Sikh, 1% are Bodh.

**5. Frequency and percentage distribution of study subject as per marital status**



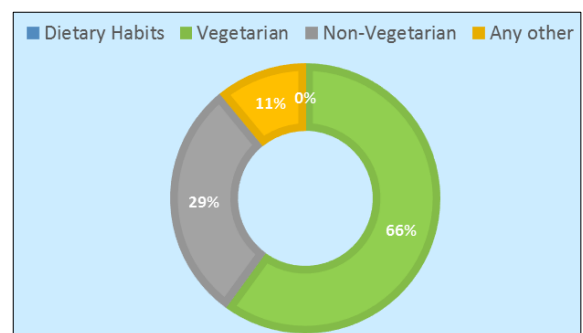
**Fig 5:** reveals that 95 % of the girls are unmarried and 10% girls married.

**6. Frequency and percentage distribution of study subject as per community**



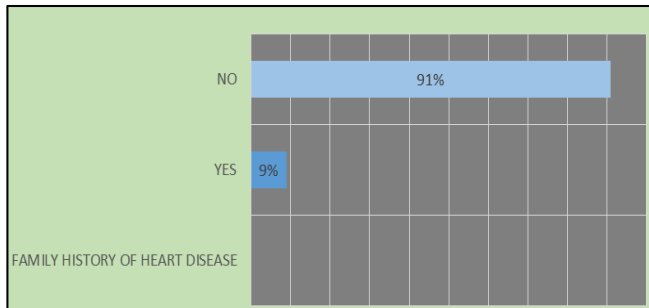
**Fig 6:** reveals that 58% of girls are from urban community 9% are from suburban and 38% girls are from rural.

**7. Frequency and percentage distribution of study subject as per dietary habits**



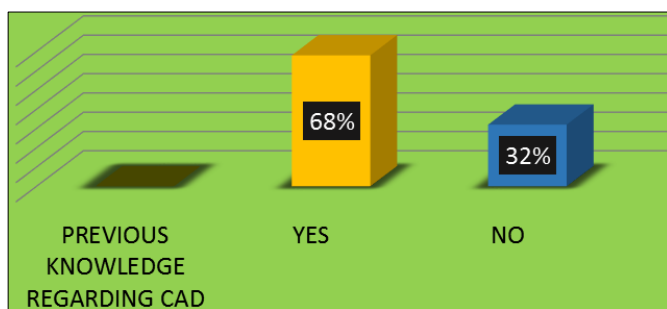
**Fig 7:** reveals that 66% of the girls are vegetarian 29% are non-vegetarian and 11% having any other dietary pattern.

**8. Frequency and percentage distribution of study subject as per information regarding CAD**



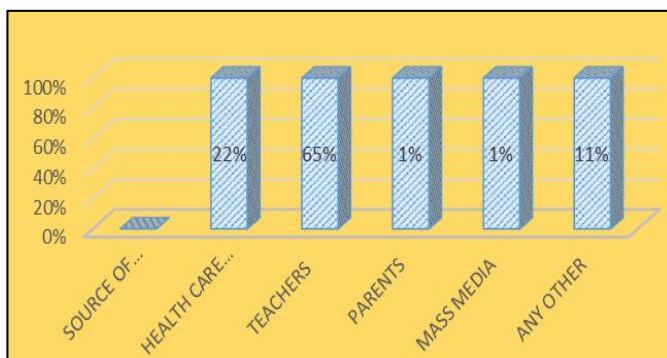
**Fig 8:** reveals that 91% not having the family history of CAD and 9% having the family history of CAD.

**9. Frequency and percentage distribution of study subject as per previous knowledge regarding CAD**



**Fig 9:** reveals 68% having the previous knowledge regarding CAD and 32% not having the knowledge regarding CAD.

**10. Frequency and percentage distribution of study subject as per source of information regarding CAD:**

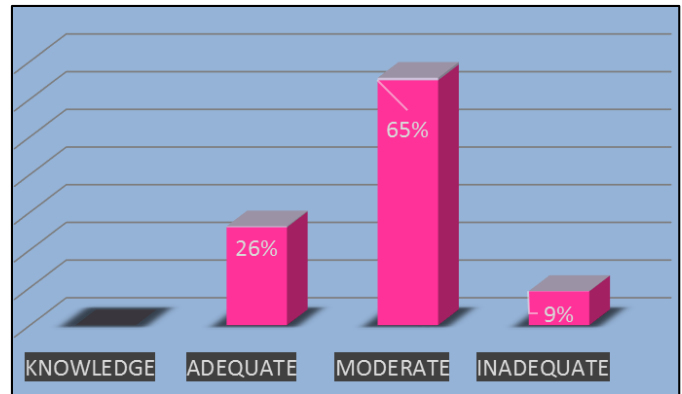


**Fig 10:** reveals that maximum of the information that is 65% from teachers and 22% from health care center and 11% from any other sources and 1% from mass media.

**Section B: Assessment of Pre-Test and Post-Test Knowledge Score Among Nursing Students**

**Table 2:** Depicts the frequency and percentage distribution of pre-test level of knowledge regarding coronary artery disease among nursing students. N=100

S No.	Knowledge Score	Number	Percentage
1	Adequate	26	26%
2	Moderate	65	65%
3	Inadequate	09	09%

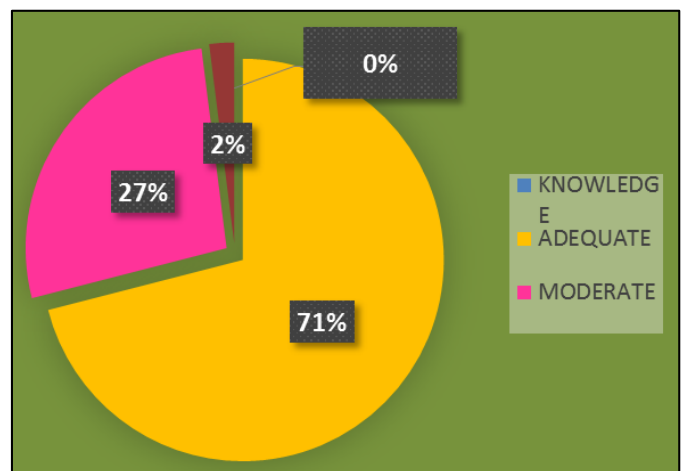


**Pre test**

A majority of 26(26%) had adequate knowledge regarding coronary artery disease, a majority of 65(65%) had moderate knowledge regarding coronary artery disease and a majority of 09(09%) had inadequate knowledge regarding coronary artery disease.

**Table 3:** Depicts frequency and percentage distribution of post-test knowledge score among nursing students. N=100

S No.	Knowledge Score	No.	Percentage
1	Adequate	71	71%
2	Moderate	27	27%
3	Inadequate	02	02%



**Post test**

A majority of 71(71%) had adequate knowledge regarding coronary artery disease, a majority of 27(27%) had moderate knowledge regarding coronary artery disease and a majority of 02(02%) had inadequate knowledge regarding coronary artery disease.

**Section C: Comparison of the Pre-Test and Post-test Knowledge score on the Effectiveness of Iec Package**

**Table 4:** Depicts comparison of the pre-test and Post-test knowledge score on the effectiveness IEC package. N=100

Test	Mean	Mean Difference	S.D.	'Z' Value
Pre-test	17.23	4.9	1.7	10
Post-test	22.14	4.9	2.2	10

\*\*\*P<0.05, S – Significant

Table 4 shows that, the mean pre-test knowledge score was 17.23, standard deviation was 1.7, and the mean post-test knowledge score was 22.14, standard deviation was 2.2. the obtained 'Z' value is 10. It was satisfactorily significant at  $P < 0.05$  level. There is significant difference (4.9) between pre-test and post-test knowledge among nursing students. On analyzing the collected data, it reveals that IEC package was effective on increasing knowledge regarding coronary artery disease.

## Discussion

### This chapter concentrates on the findings derived from the statistical analysis.

Coronary artery disease (CAD) is the most common type of heart disease. It is the leading cause of death in the United States in both men and women. CAD happens when the arteries that supply blood to heart muscle become hardened and narrowed. This may be caused by high blood pressure, smoking, diabetes, lack of exercise, obesity, high blood cholesterol, poor diet, and excessive alcohol consumption, among others. Lifestyle habits which can help to treat coronary artery disease and also help to prevent it from developing in the first place. Leading a healthy lifestyle can help keep your arteries strong and clear of plaques. To improve your heart health, you can: Quit smoking, Control conditions such as high blood pressure, high cholesterol and diabetes, stay physically active, eat a low-fat, low-salt diet that's rich in fruits, vegetables and whole grains, maintain a healthy weight, Reduce and manage stress. Medications used to treat coronary artery disease Anti Angina agents, Anti-hypertensive agents, Anti platelet agents and lipid lowering etc. Complications of Coronary artery disease can lead to: Chest pain (angina), Heart attack., Heart failure, Abnormal heart rhythm (arrhythmia). The objectives of study were : To assess the pre-test level of knowledge: The pre-test score was 17.23 and it revealed that 9% have inadequate knowledge, 65% had moderate knowledge and 26% had adequate knowledge regarding coronary artery disease. To assess the post-test level of knowledge: The post test score was 22.14 and it revealed that 2% had inadequate knowledge, 27% had moderate knowledge and 71% had adequate knowledge regarding coronary artery disease. To compare pre-test and post-test knowledge score: After conducting pre-test and post-test there is a significantly improvement in the result. The pre-test score was 17.23 and post-test score was 22.14. The knowledge among student nurses is significantly improved to some extent regarding coronary artery disease. Nurses play a key role in the prevention of CHD viewing their responsibility not only as carers but as health educators. It was observed that the student nurses do not have adequate knowledge regarding the coronary artery disease they need to be more educated regarding the disease its risk factors, sign and symptoms and its prevention. Nursing students have many misconceptions regarding cardiovascular diseases mainly coronary heart disease, and thus it became the need of the study and aim of the researchers to assess and analyse the knowledge of CAD among students. This study was done to clear the doubts and misconceptions of nursing students regarding coronary artery disease. Some of literatures related to the research were also reviewed as followed: Hassan A Aziz (2017) conducted an experimental study on Coronary Heart Disease Risk Factors among female students in Qatar University.

Total cholesterol (TC), high-density lipoprotein (HDL) cholesterol and low-density lipoprotein (LDL) cholesterol measurements were examined on 275 female students aged 18-26 years ( $M=21$ ). Among the 275 volunteers, 12.4% had high TC, 14.9% had low HDL cholesterol and 15.6% had high LDL cholesterol. The cholesterol levels are within the desirable ranges. Students should maintain their cholesterol levels within those ranges and be aware of the factors that can cause hypercholesterolemia.

After reviewing the literature, data was collected and analysed. A pre-test was conducted to assess the previous knowledge regarding coronary artery disease among students. After a day IEC package regarding knowledge related to CAD was administered as intervention and thereafter a post-test was conducted after a week and the result was then analysed on the basis of these. The findings showed that total post-test score was higher than the pre-test score and there was much difference in the knowledge score of students after post-test i.e after pre-test 26% students had adequate knowledge, 65% had moderate knowledge and 9% had inadequate knowledge regarding CAD and after the post-test 71% students had adequate knowledge, 27% had moderate knowledge and 2% students had inadequate knowledge. The result revealed that there was a significant improvement in the knowledge regarding coronary artery disease among students after providing IEC package.

## Conclusion

The following conclusion is drawn from the findings of the study:-

The conclusion of the study revealed that there was a significant improvement in the knowledge regarding coronary artery disease among students after providing IEC package.

## Recommendations

Based on the experiences gained during the study and the results obtained, the following recommendations are made: - A study can be conducted to find out the prevalence rate of coronary artery disease among student nurses. A study can be conducted to assess the knowledge, and attitude of nursing students regarding coronary artery disease. A study can be conducted on knowledge, and attitude of medical students about coronary artery disease and its prevention. A study can be conducted on the knowledge regarding risk factors and prevention of coronary artery disease among staff nurses.

## Acknowledgement

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## References

1. [http://www.mdguidelines.com/patients/pdffiles/coronary\\_artery\\_disease.pdf](http://www.mdguidelines.com/patients/pdffiles/coronary_artery_disease.pdf). viewed on 17/02/2018.
2. <http://emedicine.medscape.com/article/3196833overview>. viewed on 17/02/2018
3. [http://india.gov.in/citizen/health/heart\\_attack.php](http://india.gov.in/citizen/health/heart_attack.php). Viewed on 18/02/2018
4. Bedi HS, 2005; Ahmad N, Bhopal R, 2005; Wannamethee GS, 2006 viewed on 18/02/2018
5. Bedi HS, Gupta R, *et al.* 2003-2005. viewed on 18/02/2018
6. Medline, 2010 viewed on 18/02/2018
7. WHO Report, 2010 viewed on 19/02/2018
8. Reddy SS, Prabhu GR, 2005 viewed on 19/02/2018
9. Enas EA, Senthil Kumar A, 2001 viewed on 19/02/2018
10. Bedi HS, 2005 viewed on 20/02/2018
11. <http://www.america.gov/st/healthenglish/2008/July/20080724175631abretnuh0.9819757.html>. Viewed on 20/02/2018
12. Aronow WS, Cassidy J. Effect of smoking on exercise – induced Angina Pectoris American Journal of Epidemiology 2007; 107:362-383. Viewed on 21/02/2018
13. Wilson PW, Levy D. Cardiovascular Risk Factors in the Elderly, 2006; 63(16):12-19. Viewed on 22/02/2018
14. Hubert HB, Feinleib M. Obesity as an Independent Risk Factor for Cardiovascular Disease, 2006; 67(5):968-77. Viewed on 22/02/2018
15. M Ronald "Coronary artery disease risk factors in school children" journal of pediatrics, 1975; 86(5):697-706 viewed on 23/02/2018