

**A STUDY TO ASSESS THE RISK FACTORS AND EVALUATE THE EFFECTIVENESS OF COMMUNITY BASED EDUCATIONAL PROGRAM ON RISK FACTORS AND THEIR KNOWLEDGE REGARDING PREVENTION OF CORONARY ARTERY DISEASE AMONG ADULTS VILLAGE DAULTABAD DISTRICT GURUGRAM, HARYANA.**

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**ABSTRACT : Introduction:** The heart is a muscular organ about the size of 250 grams. With every heartbeat, the heart pumps blood that carries oxygen and nutrients to all parts of the body. The heart beats about 70 times per minute in a person at rest. The heart rate increases when a person is active or experience strong emotions. Heart muscles receive blood supply from a system of coronary arteries. A good blood supply is vital for the normal function of the heart.

**Material/Method:** It was a pre experimental study conducted amongst 60 consented adults of village Daultabad, Gurugram. Data was collected through a structured knowledge questionnaire and provide community based educational program on knowledge regarding coronary artery disease(CAD).

**Result:** Inthat 83.33% had moderate risk and 16.66% had severe risk in pre test which was improved in post test that is 96.66%.In that 13.33% had good knowledge and 86.66% had excellent knowledge in pre test which was improved by 100%of sample had excellent knowledge in post test knowledge score.

**The pre test mean score was 27.21 which was increased in post test mean score 34.33 for risk assessment. The pre test mean score was 22.5 which was increased in post test mean knowledge score was 27.7. “t” value was computed to find the level of significance between mean and it was observed highly significant(‘t’=14.82) at p less than 0.005. knowledge was significant with smoking, no association found between knowledge and other demographic variables.**

**Conclusion: Community based educational program will be effective in improving knowledge regarding prevention of coronary artery disease among adults of village Daultabad, Gurugram.**

**Key words:** Knowledge, Effectiveness, Community Based Educational Program(CBEP), Coronary artery disease (CAD).

### **Introduction:**

The heart is a muscular organ about the size of 250 grams. With every heartbeat, the heart pumps blood that carries oxygen and nutrients to all parts of the body. The heart beats about 70 times per minute in a person at rest. The heart rate increases when a person is active or experience strong emotions. Heart muscles receive blood supply from a system of coronary arteries. A good blood supply is vital for the normal of the heart.<sup>1</sup>Risk can be defined as a probability of an adverse health outcome whereas 'risk factors' refers to an attribute or characteristic or exposure of an individual whose presence or absence raises the probability of an adverse outcome.<sup>3</sup> In developed countries, there are five existing modifiable risk factors (high blood pressure, high blood cholesterol, tobacco use (chewing/smoking), diabetes mellitus, and obesity) which constitutes approximately one-third of all CVD cases. In developing countries, alongside these existing modifiable risk factors, low vegetable and fruit intake and alcoholic abuse ranks first within the list of risk factors.<sup>4</sup> It is additionally widely accepted that age, sex, high blood pressure, smoking, dyslipidemia and diabetes are the major risk factors for developing cardiovascular disease.<sup>5</sup>In United States 17.6 million have coronary heart disease (CHD), including 8.5 million with myocardial infarction (MI) and 10.2 million with angina pectoris. Prevalence is increasing with age for both women and men.<sup>6</sup>In UK every two minutes, someone is suffering from a heart attack. Most of the people don't know how to recognize the symptom.<sup>7</sup> South Asians are prone to develop CHD at a younger age often before the age of 40 years in men. South Asians are individuals whose ethnic roots originate from the Indian subcontinent, a large geographic area that includes India, Pakistan, Sri Lanka and Nepal. The prevalence of diabetes is uniformly higher in south Asians which is the risk factor of CHD.<sup>8</sup>Most studies have used an age cut-off of 40-45 years to define young patients with coronary heart condition or acute myocardial infarction . However, young population in India is becoming the most vulnerable to coronary artery disease (CAD) and myocardial infarction. Four people die of heart attack every minute and her age group is mainly between 30 and 50. Twenty-five percent of heart attack deaths occur in people less than 40. Every day nine hundred people under 30 die due to

heart disease.<sup>9</sup> The most behavioral risk factor of CVDs is unhealthy diet, physical inactivity and tobacco use, which are liable for 80% of strokes and coronary heart condition. Unhealthy diet results in hypertension, diabetes, overweight and obesity.<sup>4</sup> Reports reveal that CVD is increased by using tobacco in either form smoking or chewing tobacco. Risk increases if smoker is young or is a woman. Having more than one to two alcohol drinks damage the heart muscles.<sup>6</sup>**India:** India with the world's second largest and economic growth contributes to high global burden of disease. Deaths and disability due to CVD is expected to double by 2015 and worsen by 2020.<sup>11</sup> Trends show that risk factors causing CVD's has been steadily increasing, it has also been spreading from urban to rural population. Due to weak health system, undiagnosed, untreated and uncontrolled CCVD in adult rural population, number of CVD risk factors people are increased.<sup>12</sup> The overall prevalence of CAD in native south Indian population was 11%. Unadjusted CHD rates ranged from 1.6% to 7.4% in rural populations and 1% to 13.2% in urban populations. Crude prevalence rate of CHD in urban areas of Northern states such as Jammu and Kashmir, Delhi and Uttar Pradesh and western states such as Rajasthan had a prevalence rate of 6-10%. The rates in rural areas were 6-7% in Jammu and Kashmir, 3-5% in Himachal Pradesh and Punjab among the Northern states while in Rajasthan, it was 3-5%.<sup>13</sup>**Haryana:** DALY (disability-adjusted life year) for (IHD) was 3,062 per 10,000 people and was highest in Punjab followed by Tamil Nadu(4788) and Haryana (4244) other states Andhra Pradesh (4023), Karnataka(3658), Gujrat (3736). And in Haryana it is estimated that smoking was the most prominent risk factor among male and high incidence of positive family history is there.

### Need of the study:

CVDs are expected to be the fastest growing chronic illnesses between 2005 and 2015 growing at 9.2% every year. A more worrying fact is that the incidences of CVDs have gone up significantly for people between the age 25 and 69 to 24.8% which means losing more productive people to these diseases. The need of CVD surveillance arises when demographic transition is accompanied by a risk transition". These risk factors are used for describing the distribution of future disease burden in a population that helps in predicting health of specific individual. Risk factors are present for a long period of time during the natural history of CVD. Demographic projections suggest a major increase in CVD mortality as life expectancy increases and the age structure of the growing population changes. Heart diseases are considered to be "silent" diseases whose symptoms are not evident in a patient suffering from them till the disease is in an advanced state.<sup>14</sup>

A study revealed that disorder (CVD) burden of India is predicted to double within the next 20 years, making it the only largest explanation for death and therefore the second largest explanation for disability by the year 2020. This will be characterized by an enormous burden of CVD among urban.<sup>4</sup>

In rural India, only a couple of studies are undertaken to research the prevalence of disorder (CVD). Most of the studies carried out on the urban population. So, there was lack of awareness

which can be one of cause of cardiovascular diseases. Technologies are not so advanced in the rural area, so there is lack of affordable and accessible services. The aim of conducting this teaching “to prevailing” the health states of the people of the community area. Use of certain preventive measures helps in reducing the risk of having coronary artery disease. Community nurse are in a position to identify the risk factors and plan an educational programme to increase the knowledge and know about the risk factor of the community people. So, above reference motivated the researcher to carry out study on **prevention** of coronary artery disease.

**Material and methods:** This is a pre experimental one group pretest post-test study. Purposive sampling technique was used. The study was conducted on adults of village Daultabad, Gurugram. The sample size was 60. Data collection tool was consists of 3 section. That is selected demographic variables, risk assessment tool and structured knowledge questionnaire to assess knowledge regarding CAD. Ethical approval to conduct study was obtained from institutional review board of SGT University, Gurugram. Then permission obtained from the sarpanch of the village Daultabad was included in the study. Content validity of the tool was determined by expert’s opinion and suggestion on relevance of items. The reliability of the tool was found out by croan bach alpha. Pilot study was conducted in village Rampura, Jhajjar to find out the feasibility and practibility of the study. The study was conducted for period of 12 days in month of January 2020. The informed consent was obtained. Appropriate orientation had given to the subjects about the objectives of the study, nature of knowledge structured questionnaire and adequate care was taken for protecting the subjects from potential risk including maintain confidentially, security and identify. The demographic variables collected from the subjects. The pre test was done to assess the risk factor and knowledge regarding coronary artery disease through risk assessment tool and structured knowledge questionnaire. The community based educational program was administered. The post test study was carried out one week later, using the same tools as pre- test. Collected data was then tabulated and analysed.

**RESULT:**

<b>S.no</b>	<b>Demographic variables</b>	<b>Group F (%)</b>	<b>Percentage (%)</b>
1.	<b>Gender</b>		
1.1	Male	32	(53.33%)
1.2	Female	28	( 46.66%)
1.3	Transgender	0	(0%)
2.	<b>Age in years</b>		
2.1	20 to 30 year	27	(45%)
2.2	30 to 40 year	13	(21.66%)
2.3	Above 40 year	20	(33.33%)
3.	<b>Religion:-</b>		
3.1	Hindu	60	(100%)
3.2	Muslim	0	(0%)
3.3	Any other	0	(0%)
4.	<b>Educational status:-</b>		
4.1	Illiterate	05	(8.33%)
4.2	Upto 10 <sup>th</sup>	12	(20%)
4.3	Upto 12 <sup>th</sup>	10	(16.66%)
4.4	Graduate	29	(48.33%)
4.5	Post graduate and any others	04	(6.66%)
5.	<b>Marital status:-</b>		
5.1	Married	41	(68.33%)
5.2	Unmarried	14	(23.33%)
5.3	Widow	04	(6.66%)
6.	<b>Occupation:-</b>		
6.1	Private job	21	(35%)
6.2		02	(3.33%)

6.3	Government job	15	(25%)
6.4	House wife	14	(23.33%)
6.5	Student	08	(13.33%)
	Any other		
7	<b>family income:-</b>		
7.1	Upto rs10000/-	02	(3.33%)
7.2	Rs 10,000-20,000	15	(25%)
7.3	Rs 20,000-30,000	18	(30%)
7.4	Above 30,000	25	(41.66%)
8	<b>Smoking :-</b>		
8.1	Yes	08	(13.33%)
8.2	No	52	(86.66%)
9	<b>family history :-</b>		
9.1	Yes	00	(0%)
9.2	No	60	(100%)
10	<b>lifestyle:-</b>		
10.1	Sedentary	05	(8.33%)
10.2	Moderate	25	(41.66%)
10.3	Active	30	(50%)

**Table1** depicts that in gender male were 53.33% , females were 46.66% and transgender were 0%. Adults in age category of 20-30 were 45%, 30-40were 21.66% and above 40 were 33.33%. In Religion Hindu were 100% ,Muslim were 0% and any other were also 0%.Educational status in illiterate were 8.33%,upto 10<sup>th</sup> were 20 % , up to 12<sup>th</sup> were 16.66%, graduate were 48.33% and post graduate and any others were 6.66%. Marital status in married were 68.33%, unmarried were 23.33% and widow were 6.66%. Occupation in private job were 35%,government job were3.33%, housewife were 25%, student were 23.33% and any other were 13.33%.Family income in up to rs 10,000 were 3.33%, RS 10,000-20,000were 25%, Rs 20,000-30,000 were 30% and above 30,000 were 41.66%. Smoking in yes category were 13.33% and No were 86.66%. Family history in yes 0% and no were 100%. Lifestyle in sedentary were 8.33% , moderate were 41.66% and active were 50 %.

**Mean, Median, Standard Deviation of Pre-test and Post test Knowledge score on Prevention of Coronary Artery Disease.**

The overall post test mean (27.7) was higher than pre test mean (22.5) and post test median(28) was higher than pre test median(22) and post test SD(1.10) was lower than the pre test SD(2.0).

Group	Mean	Median	Standard deviation	Range
Pre -test	22.5	22	2.0	18-28
Post -test	27.7	28	1.10	22-29

**Mean, Median, Standard Deviation of Pretest and Post Test of Risk Assessment on Prevention of Coronary Artery Disease**

post test mean (34.33) was higher than pre test mean (27.21) and post test median(34) was higher than pre test median(27) and post test SD(1.74) was lower than the pre test SD(3.1).

**N=60**

Group	Mean	Median	Standard deviation
Pre- test	27.21	27	3.1
Post- test	34.33	34	1.74

**“t” test showing the effectiveness of CBEP of knowledge score on Prevention of Coronary Artery Disease**

the comparison of the mean knowledge score between the pre and post test on Prevention of Coronary Artery Disease. The area wise distribution of the knowledge score of adults reveals that the post test mean with SD(27.7±1.10)was higher than the pre test mean(22.5±2) with SD. “t” value was computed to find the level of significance between mean and it was observed highly significant(‘t’-18.1) at p less than 0.005.

**N=60**

Group	Mean± SD	SD <sub>ME</sub>	T value	Df	P value
Pre- test	22.5± 2	0.25	18.1	59	0.000*

<b>Post- test</b>	27.7 ±1.10	0.14			
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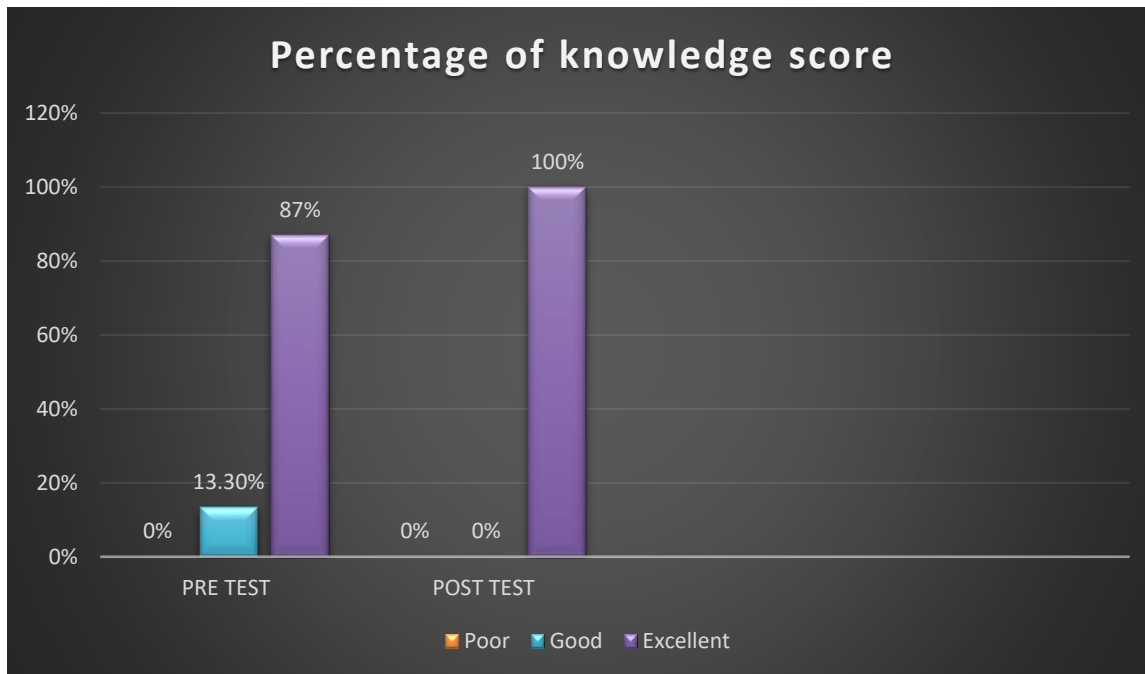
**“t” test showing the effectiveness of CBEP of Risk Assessment on Prevention of Coronary Artery Disease**  
 The comparison of the mean risk score between the pre- test and post test on Prevention of Coronary Artery Disease. The area wise distribution of the knowledge score of adults reveals that the post test mean with SD(34.33)was higher than the pre test mean(27.21) with SD. “t” value was computed to find the level of significance between mean and it was observed highly significant( $t=14.82$ ) at p less than 0.005.

**N=60**

<b>Group</b>	<b>Mean± SD</b>	<b>SD<sub>ME</sub></b>	<b>T value</b>	<b>Df</b>	<b>P value</b>
<b>Pre test</b>	27.21	0.4	-14.82	59	0.000*
<b>Post test</b>	34.33	0.2			

**Category Wise Percentage Knowledge Score on Prevention of Coronary Artery Disease**

96.66%of sample had severe risk and 3.33%moderate risk in post test. Whereas in the pretest and 83.33% had moderate risk and 16.66%had severe risk.

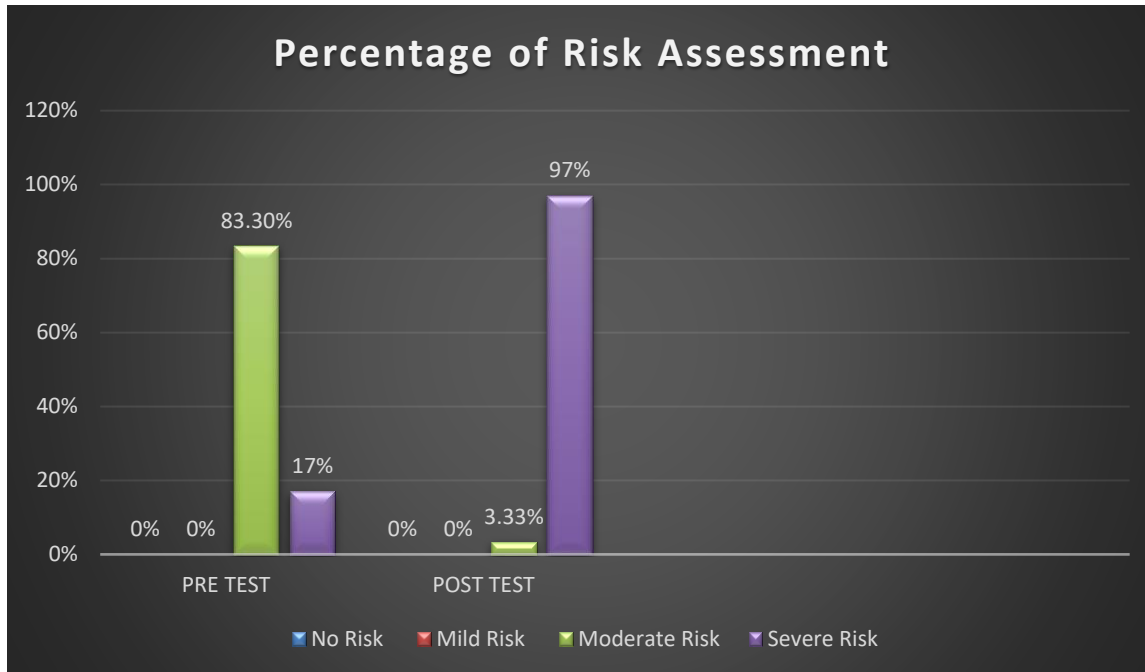


**Fig1: Category wise Percentage knowledge score on Prevention of Coronary Artery Disease**



### Category wise percentage distribution of pre test and post test risk score

96.66% of sample had severe risk and 3.33% moderate risk in post test. Whereas in the pretest and 83.33% had moderate risk and 16.66% had severe risk.



**Fig 2.** Depicts the Percentage of Pre-Test and Post-Test Risk Assessment Among Adults

### To associate knowledge regarding prevention of coronary artery disease with selected demographic variables

The association of post test knowledge regarding prevention of CAD among adults with selected variables such as smoking was found statistically significant 0.001 at  $p < 0.05$  and no association found between knowledge and other demographic variables like gender, age in years, religion, educational status, marital status, occupation, family income, family history and lifestyle.

**DISCUSSION:** This study was a pre- experimental study, pretest –posttest design without control group approach was used to assess the risk factors and evaluate the effectiveness of Community Based Educational Program (CBEP) on knowledge regarding prevention of coronary artery disease among adults. Majority of gender male were 53.33%, Adults in age category of 20-30 were 45%, In Religion Hindu were 100% , 48.33% were graduate, married were 68.33%, Occupation in private job were 35%, family income above 30,000 were 41.66%, smoking in No were 86.66%, family history in no category is 100% and lifestyle in active were 50%. The pre test mean score was 27.21 which was increased in post test mean score 34.33 for risk assessment. The pre test mean score was 22.5 which was increased in post test mean knowledge score was 27.7. “t” value was computed to find the level of significance between mean and it was observed highly significant ( $t=14.82$ ) at  $p$  less than 0.005. it was concluded that there was a

significant difference in pre test and post test risk assessment and knowledge to assess the effectiveness of community based educational program regarding prevention of CAD among adults. Hence, there was research hypothesis accepted. Nurses are the backbone of the health care set up of any country. The Nursing practice has gone under many evolutions in the recent past. The expanded role of professional Nurse emphasized the activities which include promotive, preventive, curative and rehabilitative aspects. The Nurse educator have the responsibility to update the skills and practices of Nursing students. They should be able to identify any abnormal findings during assessment of risk factor and their knowledge on prevention of coronary artery disease. The study has an important implication in the Nursing education and other fields. Nurse educator have the responsibility to update the knowledge regarding prevention of coronary artery disease. The Nursing educator/ Researcher should be encourage the adults regarding prevention of coronary artery disease under the supervision of Nursing educator/ Researcher. By adopting, the different teaching strategies like lecture, discussion, related video and demonstration of prevention of coronary artery disease can be disseminated effectively. One of the main aim of the nursing research is to contribute knowledge to the body of nursing to expand and broaden the scope of nursing. This is possible only if nurses are taking initiative to conduct research. Recommendation are similar study can be replicated on larger sample to make generalizability. The study confines itself only to find out the risk factor and knowledge of adults, their attitude and practice are not studied. The study is limited to the experience level of the researcher. The present study supported by they can provide appropriate information and support through the testing process and help to interpret results. Therefore, This study resembles to this study **Reilly R**, educational (55.8% vs. 47.0%,  $p < 0.001$ ;  $OR = 1.43$ ,  $p < 0.001$ ). And “t” value of risk factors result with other previous conducted study. Community based educational program on prevention of coronary artery disease among adults was effective in terms of knowledge with t-value ( $t = 14.82$ ). significant at  $p < 0.05$ . this study resembles to this study **Diehl K** The evidence supported the effectiveness of lifestyle interventions delivered by nurses in PHC to affect positive changes on outcomes associated with the prevention of chronic disease including: weight, blood pressure, cholesterol, dietary and physical activity behaviors, patient satisfaction, readiness for change and quality of life. The strength of recommendations is limited by the small number of studies within each comparison group and the high risk of bias of the majority of studies. According to association of post test knowledge score on prevention of coronary artery disease among adults with selected demographic variables such as smoking was found statistically significant at  $0.001^*$  ( $p < 0.05$ ). this study resembles with this study **Pryde MM** Results of the study revealed that Higher mastery was associated with a greater likelihood of having quit smoking (.51.007), higher partner support ( $p = 0.013$ ) and higher total cholesterol levels ( $p = 0.1004$ ).

## CONCLUSION:

The study at last concluded that there was a significant difference in knowledge and risk score before and after administration of Community Based Educational Program (CBEP) among adults. The mean knowledge score for adults is 34.33. It was concluded that adults have excellent knowledge. It was proven that community based educational program (CBEP) was effective on prevention of coronary artery disease.

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