



# A STUDY TO ASSESS THE RISK FACTORS ASSOCIATED WITH CORONARY ARTERY DISEASE PRESENT AMONG ADULT POPULATION IN THE SELECTED HOSPITAL OF NEW DELHI AND TO DISSEMINATE INFORMATION PAMPHLET

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**Abstract:** The present study aimed to identify the risk factors contributing to coronary artery diseases present among adult population and to develop and disseminate information pamphlet to prevent coronary artery disease. The conceptual framework adopted for the present study was based on the "Health Belief Model" by Marshall H. Becker (1974). The quantitative research approach was adopted for the study with a cross-sectional survey research design and non-probability purposive sampling technique. The sample of present study comprised of 64 adult population attending medicine OPD in the Lal Bahadur Shastri Hospital, Kalyan Puri, New Delhi. Structured questionnaire were used to identify the risk factors contributing to coronary artery disease among adult population. Descriptive and inferential statistics were used to analyse the data. The findings of the study revealed that out of 64 adult population 7(10.93%) were in low risk, 47(73.43%) were in moderate risk and 10(15.62%) were in high risk. The findings of the present study revealed that the highest risk factor was the physical inactivity (2.18) and the least risk factor was experienced in the use of addictive substance (0.346). There was no significant relationship between risk status of adult populations and selected demographic variables such as religion, type of work, monthly family income and no. of family members except age, gender and level of education.

**Key Words:** Risk factors, Coronary artery disease.

## INTRODUCTION

The heart, which is considered as the center for living and loving, is unique among vital organ of the body. Heart diseases are the major causes of death and disabilities in our country. It is expected to become the major killer in the next two decades. There is an estimate that about one crore -heart patient will be there in our country by the turn of the century.<sup>1</sup> Coronary Heart Disease is the leading cause of death and disability in men and women in the whole world. Data accumulated over the past 3 decades with regard to CVD indicates that cardiovascular disease processes are accelerated over the life course due to lack of health awareness in controlling the modifiable risk factors and environmental exposures. It is estimated that 77% of the victims of heart disease live in the developing countries.<sup>2</sup>

The prevalence of classic cardiovascular risk factors like hypertension, dyslipidemia, obesity and diabetes, varies widely between different countries, and shows some important secular trends. The conventional risk factors for CAD are often divided into non-modifiable and modifiable risk factors. Previously include age, sex and case history, while the latter include DM (DM), smoking, dyslipidemia, hypertension and obesity. There is increasing incidence indicating that Asian Indians are at increased risk of CAD, which can't be attributed to the common risk factors.<sup>5</sup>

The World Health Organization identified important risk factors for CAD such as poor diet, smoking, drinking alcohol, and lack of exercise (World Health Organization [WHO], 2017).<sup>6</sup>

## NEED OF THE STUDY

The researcher from her experience, had also observed that adults had many risk factors related to coronary artery disease such as lack of physical activities, spending majority of time watching television and internet, high consumption of junk food, avoiding homemade food, lack of interest in eating vegetables, habit of smoking and alcohol consumption, high educational stress, interest of consuming more non vegetarian foods and processed foods such as KFC, Pizza etc. There was lack of awareness regarding the harmful effects of having such habits, leading to obesity and many other illnesses. Hence, the nurse researcher felt the need to assess the risk factors associated with CAD among adult population and to disseminate information pamphlet is likely to be beneficial to adult population to decrease risk of getting CAD.

## STATEMENT OF THE STUDY

A study to assess the risk factors associated with coronary artery disease present among adult population in the selected hospital of New Delhi and to disseminate information pamphlet.

## OBJECTIVES OF THE STUDY

1. To assess the risk factors associated with coronary artery disease present among adult population.
2. To develop and disseminate information pamphlet related to coronary artery disease.
3. To seek association between the risk status and selected demographic variables.

## RESEARCH METHODOLOGY

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

### Population and Sample

In the present study, sample comprised of 64 adult population aged between 20-55 years attending medicine OPD in the Lal Bahadur Shastri Hospital, Kalyan Puri, New Delhi. Purposive sampling technique was adopted to select the population for data collection.

### Data and sources of data

The data was collected by 64 adult population in the month of January 2022. Tools used for data collection were Structured questionnaire to obtain data regarding demographic characteristics of adult population consist of 7 questions and Structured questionnaire to assess the risk factors associated with coronary artery disease present among adult population which consist of 42 questions divided into 6 areas and each item was scored from 0 to 4.

**TABLE-1: BLUE PRINT OF STRUCTURED QUESTIONNAIRE TO ASSESS RISK FACTOR UNDER VARIOUS AREAS**

PARTS	CONTENT AREA	TOTAL ITEMS	TOTAL SCORES	SCORE IN % OF THE TOTAL
1	Bio Physical Measurements	3	9	7.09
2	Self and family history	2	6	4.72
3	Use of addictive substance	10	31	24.41
4	Physical inactivity	9	27	21.26
5	Diet	10	30	23.62
6	Stress	8	24	18.89
		42	127	100%

**TABLE-2: SCORE FOR RISK STATUS ASSESSMENT**

CATEGORY	SCORE
Low risk	6-32
Moderate risk	33-64
High risk	65-96
Very high risk	97-127

For categorizing the scoring uses 25<sup>th</sup> percentile formula.

## CONCEPTUAL FRAMEWORK

The attribute variables in the study are Age, gender, religion, and level of education, type of work, monthly family income and no. of family members in the family.

The present study is based on the conceptual frame work of "Health Belief Model" by Marshall H. Becker (1974). Subsequent amendments to the model were made as late as 1988 to accommodate evolving evidence generated within the health community about the role that knowledge and perceptions play in personal responsibility Originally the model was designed to predict behavioural response to the treatment received by acutely or chronically ill patients, but in more recent years the model has been used to predict more general health behaviours. The original model included these four constructs:

**Perceived Benefits** indicates an individual's assessment of the positive consequences of adopting the behaviour. In the study, perceived benefits of preventive action includes previous experience within the family confidence in the adult people's ability to take action, contact with health care personnel, reassurance from others

**Perceived Barriers** indicates an individual's assessment of the influence that facilitate or discourage adoption of the promoted behaviour .In the study Perceived barriers to preventive action includes lack of knowledge, no awareness for facilities for health education, inability to take action and modify behaviour. Perceived benefits of preventive action minus perceived barriers to preventive action lead to the adult people to take preventive health action.

**Perceived Susceptibility** indicates an individual's assessment of the risk of getting the condition in this study it is the perceived susceptibility of adult people to develop the risk factors of coronary artery diseases.

**Perceived Severity** indicates an individual's assessment of the seriousness of the condition, and its potential consequences. In the study, adult people may perceive severity of problems of life style behaviours and its potential consequences which would help them to perceive threat of development of coronary artery diseases. A Variant of the model includes the perceived costs of adhering to prescribed Intervention as one of the core beliefs.

**Modifying factors:** An individual's personal factors that affects whether the new behaviour is adopted. The four major constructs of perception are modified by other variables like culture, education level, past experiences, skills and motivation. These are individual characteristics that influence person's perceptions. The modifying variable behind this is motivation. Modifying factors here include attribute variables (age, religion, educational qualification, type of family, monthly income, occupation), personality of adult people, their socioeconomic status, their knowledge about coronary artery diseases and its prevention. The present study on this model explains that there are a number of adult people with problem of life style behaviours. These modifying factors influence the four major constructs i.e. perceived benefits, perceived barriers perceived susceptibility and perceived severity.

**Cues to Action:-** In addition to the four beliefs or perception and modifying variables, the HBM suggest that behaviour is also influenced by the cues to action .Cues of action are events, people, or things that move people to change their behaviour. The model postulates that health seeking behaviour influenced by person's perception of a threat posed by a health problem and the value associated with action aimed at reducing the threat. Cues to action would activate the readiness and stimulate overt behaviour. These cues to action are categorized under health education program campaigns, mass media information, and internet, and newspaper, magazine and so on. This will help the adult people to perceive the threats of problems of life style behaviour. This perceived threat would enable the adult people to undertake recommended health actions such as preventive and curative health actions. Development & dissemination of Information Booklet on prevention of CAD has likelihood for people to take health seeking behaviour.



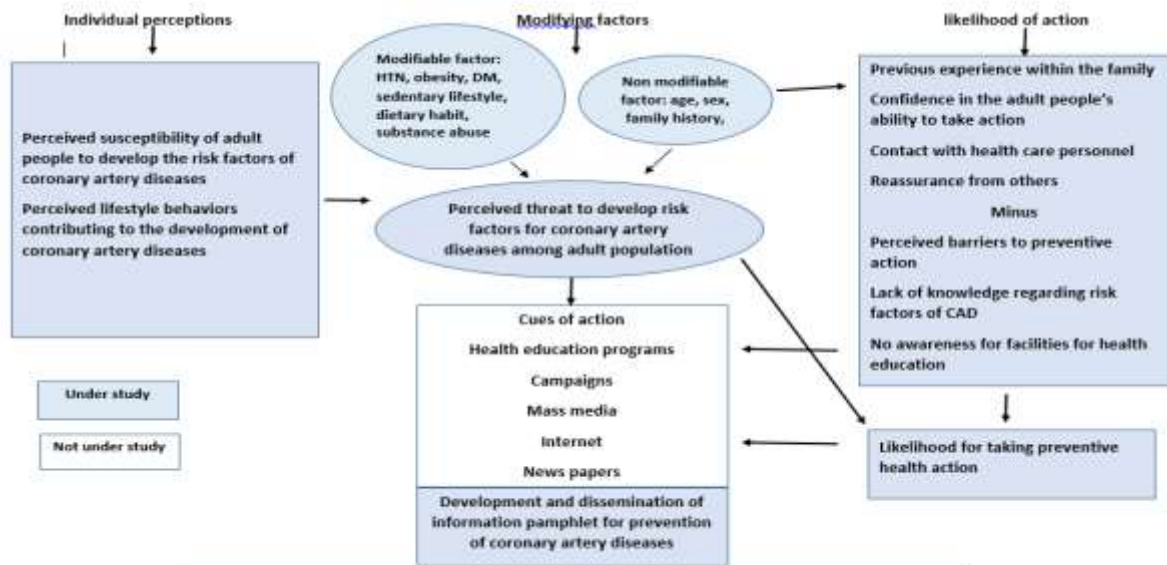


FIGURE 1- Conceptual framework adopted from Marshall H. Becker- Health Belief

## STATISTICAL TOOL

Descriptive and inferential statistics were used for analysis and interpretation of the study. Data related to risk assessment of coronary artery disease were analyzed in terms of mean, median and standard deviation. To test the significant association between risk status and demographic variables, computing the fisher's exact values where ever the frequencies in the contingency table were below 5 at 0.05 level of significance.

## RESULT AND DISCUSSION

The data was analyzed and presented under the following sections.

### SECTION: 1

Findings related to sample characteristics

Frequency and percentage distribution of adult population according to their demographic characteristics.

### SECTION: 2

Findings related to risk assessment for coronary artery disease among adult populations.

- Frequency and percentage distribution of area wise prevalence of risk factors for coronary artery disease among adult populations.
- Frequency and percentage distribution of adult population according to their level of risk status for CAD.
- Mean, median, standard deviation, possible range of scores and range of obtained scores of risk scores of adult population.
- Area wise Mean, modified mean and rank order of risk factors of CAD among adult population.

### SECTION- 3

Findings related to relationship between risk status of adult population and selected demographic variables such as age, gender, religion, level of education, type of work, monthly family income and number of family members.

### SECTION: 1

#### Findings related to sample characteristics

Frequency and percentage computation to describe sample characteristics in the study. The summary of the sample characteristics are presented in tables and figures.

**TABLE: 3**

**Frequency and percentage distribution of adult population according to their demographic characteristics (age, gender, religion, level of education, type of work, monthly income, no. of family members).**

n=64

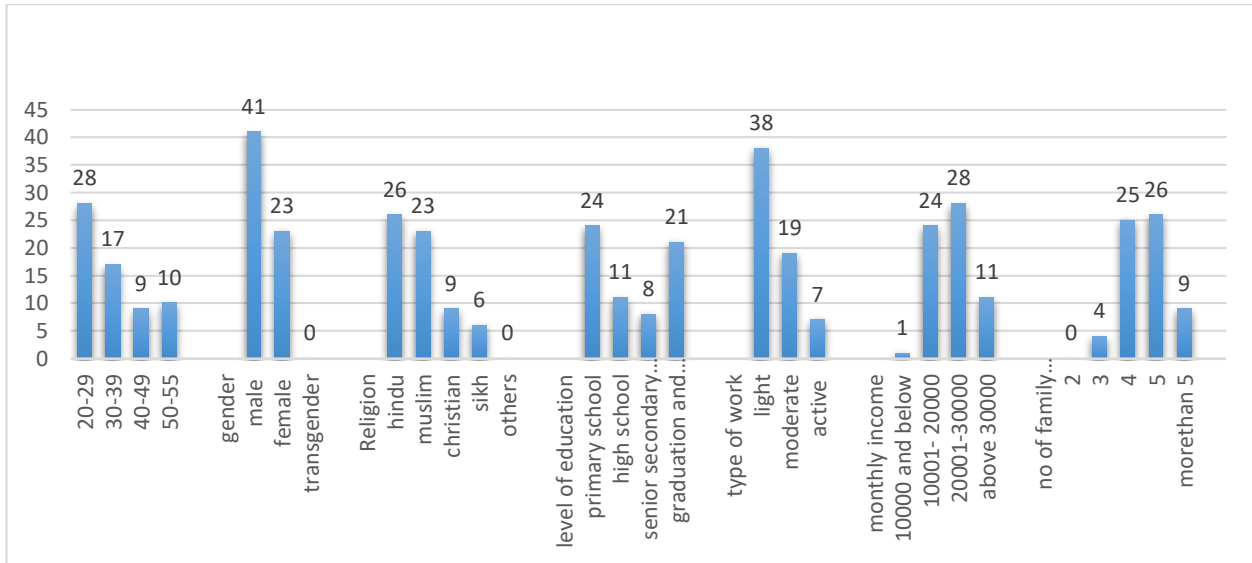
S.NO.	SAMPLE CHARACTERISTICS	FREQUENCY	PERCENTAGE
<b>1</b>	<b>Age (in years)</b>		
	20-29	28	43.75
	30-39	17	26.56
	40-49	9	14.06
	50-55	10	15.62
<b>2</b>	<b>Gender</b>		
	Male	41	64.06
	Female	23	35.93
	Transgender	0	0
<b>3</b>	<b>Religion</b>		
	Hindu	26	40.62
	Muslim	23	35.93
	Christian	9	14.06
	Sikh	6	9.37
	Others	0	0
<b>4</b>	<b>Level of education</b>		
	Primary school	24	37.50
	High school	11	17.18
	Senior secondary school	18	12.50
	Graduation or above	21	32.81
<b>5</b>	<b>Type of work</b>		
	Light (sitting office work)	38	59.37
	Moderate (standing and walking work e.g. store assistant, light industrial work)	19	29.68
	Active (lifting e.g. labor, industrial and farm work)	7	10.93
<b>6</b>	<b>Monthly income (in rupees)</b>		
	10000 and below	1	1.56
	10001-20000	24	37.50
	20001-30000	28	43.75
	Above 30000	11	17.18
<b>7</b>	<b>Number of family members</b>		
	2	0	0
	3	4	6.25
	4	25	39.06
	5	26	40.62
	More than 5	9	14.06

**Data presented in table no. 3 shows that:**

Out of 64 samples, 28(43.75%) belongs to age group between 20-29 years, 17(26.56%) belongs to age group between 30-39 years, 9(14.06%) belongs to age group between 40-49 years and 10(15.62%) belongs to age group between 50-55 years.

41(64.06%) of samples were male and 23(35.93%) were female.

Most of adult population 26(40.62%) were Hindu, 23(35.93%) were Muslim, 9(14.06%) were Christian and 6(9.37%) were Sikh. Educational status varied with 24(37.50%) having primary education, 11(17.18%) passed high school, 8(12.50%) passed senior secondary school and 21(32.81%) being graduated and above. With regard to type of work 38(59.37%) samples were doing light work, 19(29.68%) were doing moderate work and 7(10.93%) were doing active work. Monthly income of 1(1.56%) samples were Rs.10000 and below, 24(37.50%) samples were between Rs.10001-20000, 28(43.75%) were had between Rs.20001-30000 and 11(17.18%) had monthly income above 30000. 4(6.25%) samples having 3 family members, 25(39.06%) samples having 4 family members, 26(40.62%) samples having 5 family members and 9(14.06%) samples having more than 5 family members



**Fig. 2:** Column diagram showing the frequency and percentage distribution of adult population by their demographic characteristics (age, gender, religion, level of education, type of work, monthly income, no. of family members).

**SECTION: 2**

**Findings related to risk assessment for coronary artery disease among adult populations.**

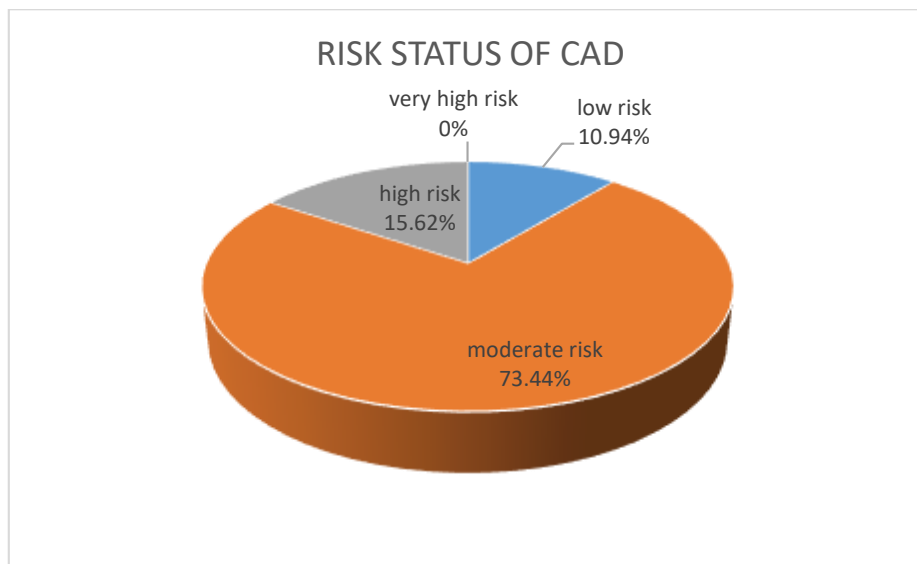
**TABLE: 4**

**Frequency and percentage distribution of adult population according to their level of risk status for Coronary Artery Disease. n=64**

CATEGORY	SCORE	FREQUENCY	PERCENTAGE
Low risk	6-32	7	10.94
Moderate risk	33-64	47	73.44
High risk	65-96	10	15.62
Very high risk	97-127	0	0.00

The data in table 4 reveals that majority of adult populations, 47(73.44%) had moderate risk status for CAD. High risk were seen in 10(15.62%) adult population, low risk were seen in 7(10.94%) adult population and there were no adult population found in very high risk status for CAD.

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**Figure: 3** pie diagram showing the percentage distribution of adult population according to their level of risk status for CAD.

**TABLE: 5**

Possible range of scores, range of obtained scores, Mean, median and standard deviation of risk scores of adult population.

n=64

Possible range of scores	Range of obtained scores	Mean scores	Median	Standard deviation (SD)
6-127	20-89	48.46	46	15.26

The data in table 5 shows that the range of obtained score for risk scores of adult population was 20-89. The mean was 48.46, median 46 and standard deviation was 15.26.

**TABLE: 6**

Mean, modified mean and rank order of risk factors of CAD among adult population.

n=64

Risk factors	Item number	Mean scores	Modified mean	Rank order
Physical inactivity	9	19.65	2.18	I
Stress	8	10.6	1.32	II
Diet	10	11.56	1.156	III
Bio physical measurement	3	2.28	0.76	IV
Self and family history	2	0.89	0.445	V
Use of addictive substance	10	3.46	0.346	VI

The data in table 6 reveals that the highest risk was in the physical inactivity (2.18) and the least risk was experienced in the use of addictive substance (0.346). The descending order of the risk status was physical inactivity (2.18), stress (1.32), diet (1.156), bio physical measurement (0.76), self and family history (0.445) and use of addictive substance (0.346) respectively.

For calculating modified mean divide the total item number with mean scores of the respective risk factors.

### **SECTION- 3**

**Findings related to seek association between risk status of adult population and selected demographic variables.**

The data was analyzed to find out seek association between the risk status of adult population and selected demographic variables by computing the **Fisher's exact value** where ever the frequencies in the contingency table were below 5 at 0.05 level of significance. The results of the **Fisher's exact test** are given below.

TABLE: 7

Fisher's exact test to seek association between risk status of adult population with demographic variables.

n=64

Category	Low risk	Moderate risk	High risk	Very high risk	Fisher's Exact test	P-value
<b>AGE</b>						
20-29 years	5	23	0	0	25.383	0.001*
30-39 years	2	15	0	0		
40-49 years	0	5	4	0		
50-55 years	0	4	6	0		
<b>GENDER</b>						
Male	3	28	10	0	8.120	0.017*
Female	4	19	0	0		
Transgender	0	0	0	0		
<b>RELIGION</b>						
Hindu	5	15	6	0	9.795	0.081
Muslim	0	19	4	0		
Christian	2	7	0	0		
Sikh	0	6	0	0		
Others	0	0	0	0		
<b>LEVEL OF EDUCATION</b>						
Primary school	1	15	8	0	13.920	0.011*
High school	0	10	1	0		
Senior secondary school	0	8	0	0		
Graduation and above	6	14	1	0		
<b>TYPE OF WORK</b>						
Light work	7	23	8	0	7.894	0.063
Moderate work	0	18	1	0		
Active work	0	6	1	0		
<b>MONTHLY FAMILY INCOME</b>						
Rs.10000 or below	0	1	0	0	5.939	0.483
Rs.10001-20000	1	20	3	0		
Rs.20001-30000	3	20	5	0		
Rs.30000 or above	3	6	2	0		
<b>NUMBER OF FAMILY MEMBERS</b>						
2	0	0	0	0	3.004	0.828
3	1	3	0	0		
4	2	18	5	0		
5	3	20	3	0		
More than 5	1	6	2	0		

$p \leq 0.05$ , \* significant

- ❖ There was no significant relationship between risk status of adult populations and selected demographic variables such as religion, type of work, monthly family income and no. of family members except age, gender and level of education.

## CONCLUSION

The conclusion drawn on the basis of study is given below:

- ❖ A findings of the study with regard to demographic variables reveals that most of the adult population 43.75% belongs to age group 20-29 years, majority of adult population 64.06% were male, most of adult population 40.62% were Hindu, mostly adult population 37.50% were having primary school, majority of adult population 59.37% were doing light work, most of adult population 43.75% were having monthly income between Rs.20001-30000 and 40.62% adult population having 5 family members.
- ❖ Physical activity were the major risk factors among adult population and the use of addictive substance were least.
- ❖ 54.7% adult population were having normal weight, 62.5% adult population were having normal blood pressure, 67.2% adult population were having no risk for waist-hip ratio and 81.3% adult population were having no any co-morbid disease.



- ❖ The analysis of data indicated that out of 64 adult population 10.937% were in low risk, 73.437% were in moderate risk and 15.625% were in high risk.
- ❖ There was no significant relationship between risk status of adult populations and selected demographic variables such as religion, type of work, monthly family income and no. of family members except age, gender and level of education.

### RECOMMENDATIONS

- ❖ A similar study can be conducted with a large sample thereby findings can be generalized for larger population.
- ❖ A study can be conducted at hospital settings among patients diagnosed with Coronary artery disease regarding management of coronary artery diseases.
- ❖ A similar study can be conducted in various other groups like office workers, sedentary life style etc.
- ❖ A comparative study can be conducted on samples drawn from urban and rural population
- ❖ A similar study can be conducted to assess the attitude of adult population towards prevention of coronary artery diseases.
- ❖ A similar study with control group and experimental group can be more beneficial.

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