

# A Study on the Assessment of Knowledge Regarding Cardiac Arrest in Existing Lifestyle Practices Among Adult, in Selected Community Area of Dehradun, Uttarakhand

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**Abstract- Introduction:** Cardiac arrest occurs when the heart suddenly and unexpectedly stops pumping. During cardiac arrest, people typically collapse and become unresponsive. Symptoms start without warning. Cardiac arrest happens when Rapid, Abnormal impulses override the heart's neutral rhythm **Aim:** To assess the knowledge regarding cardiac arrest and existing lifestyle practices of adults, in the selected community area, Dehradun, Uttarakhand. **Materials and Methods:** A descriptive study was conducted with 50 adults selected based on inclusion criteria by using a convenience sampling technique through a structured knowledge questionnaire tool. Descriptive and Analytical analysis was done after the collection of data through SPSS and MS Excel. **Results:** The findings of the study suggested that most of the subjects fell in the age group of 25-55 years. The mean with the standard deviation of the study was  $14.09 \pm 6.44$  of knowledge and  $9.22 \pm 2.20$  of practice score. There was no significant association between the knowledge score and socio-demographic profile, and no significant association between the practice score and socio-demographic profile. **Conclusion:** The majority of the participants from 25-30 years of age as well as a majority of the participants had vegetarian and mixed dietary patterns. The study concluded that 78% of the adults had good knowledge regarding cardiac arrest whereas 60% of the adults knew the health practices regarding cardiac arrest in the existing lifestyle.

**Keywords:** Adults, Cardiac Arrest, Existing Lifestyle, Knowledge.

## INTRODUCTION

The heart is an organ that pumps blood throughout the body. The human heart is a muscular organ that provides continuous blood circulation through the

cardiac cycle and is one of the most vital organs in the human body. The human heart is a four-chambered muscular organ, shaped and sized roughly like a man's closed fist with two-thirds of the mass to the left of the midline. Parts of the heart: layers of the heart wall, chamber of the heart, valves of the heart (Cleveland Clinic, 2024).

Cardiac arrest is more common in adults at the age of 40 years and above. Cardiac arrest occurs when the heart suddenly and unexpectedly stops pumping. During cardiac arrest, people typically collapse and become unresponsive. Symptoms start without warning. Cardiac arrest happens when rapid, Abnormal impulses override the heart's neutral rhythm. It is an electrical issue (Byjus, 2024). The most common cause of cardiac arrest is underlying heart problems like Coronary Artery Disease, Major blood loss, Lack of oxygen, Very low Potassium electrical injury, Heart failure Arrhythmias and Intense Physical Exercise, Smoking, Obesity, Diabetes, and High Blood Pressure (Byjus, 2024). Symptoms of cardiac arrest in severe cases include sudden collapse, no pulse rate, no breathing, and loss of consciousness. Symptoms before cardiac arrest include chest discomfort, shortness of breath, weakness, fast beating, fluttering, or pounding heart. It may occur with no warning (NHLBI, 2022).

Worldwide, in the United States, approximately 326,000 cases of out-of-hospital and 209,000 cases of in-hospital cardiac arrest occur among adults annually. Which works out to be an incidence of approximately 110.8 per 100,000 adults per year. Non-western regions of the world have differing incidences. The sudden cardiac arrest deaths in China is 41.8 per 100,000 and in south India is 39.7

per 100,000. The survival rate from sudden cardiac arrest is less than 1% Worldwide and close to 8% in the US. The American Heart Association has released a heart and stroke statistics (2022) update. According to the report cardiac arrest remains in public health crisis. There are more than 356,000 out-of-hospital cardiac arrests (Tsao et al., 2022).

In India (2017), the survival rate of hospital admission was 32.5%, the survival rate to hospital discharge was 8.8%, and with good cerebral performance category neurological status was 3.8%. The majority of hospital cardiac arrest was seen in adults, predominately in males. The majority of hospital cardiac arrests were witnessed arrests (56.5%) with a 1.3% bystander CPR rate, in which 92.5% of arrests occurred at home, 96% presented with initial non-shockable rhythm, and 92% with presumed cardiac etiology (Krishna et al., 2017).

In Uttarakhand (2022), according to Research from Uttarakhand health department so far this year. In the 4 Dham disasters, the highest number of deaths is reported from Kedarnath (135), followed by Yamunotri (80), Badrinath (75), and Gangotri (21). Almost 80% of the deaths were related to medical issues, mainly cardiac arrest, and 20% were due to accidents. In (UK 2022) there were 32 accident-related deaths in Yamunotri alone, while 48 were health-related (Azad S, 2022).

A similar study was conducted on cardiac arrest. Interestingly, more than 80% of the RCTs (randomized controlled clinical trials) encompassed advanced life support and post-cardiac arrest care. Surprisingly 9 out of 11 RCTs led to neutral results, demonstrating equivalency between the newly tested interventions (Penna A, 2022).

Another study was conducted on the comparative accuracy of the different risk scores in assessing cardiovascular risk in India. A study in of the patient in a patient with a first myocardial infarction, 149 patients (mean age  $59 \pm 10.6$  years 123 (82.6 % (males) without prior cardiovascular disease and presenting with myocardial infarction were included (Bansal et al., 2014).

The public knowledge of cardiac arrest and initiation of basic life support is crucial to increasing the survival rate in cardiac arrest patients. The need for the study to check the awareness regarding cardiac arrest plays a vital role in the adolescent age group and maintaining good health practices regarding cardiac arrest.

## OBJECTIVES

1. To assess the knowledge regarding cardiac arrest among adults.
2. To assess the existing lifestyle practices of adults regarding cardiac arrest.
3. To find out the association between knowledge regarding cardiac arrest with selected demographic variables.
4. To find out the association between existing lifestyle practices of adults with selected demographic variables.

## MATERIALS AND METHODS

### Research design

A research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose. It contains a clear statement of the research problem, procedure, techniques to be used for gathering information, the population to be studied, and methods to use in processing and analyzing data. The description research design is selected for this study.

**Sample:** A sample is the subset of the population that is selected to represent the population for the study. The sample for the present study comprised adults of the age group of 25-50 years selected community area Bhogpur Dehradun, Uttarakhand.

**Sample size:** The sample size was 50 adults from selected community areas Bhogpur, Dehradun, Uttarakhand.

**Sample techniques:** In the present study convenience sample is used because subjects are chosen that are available in a convenient way to the research as study participants.

### Criteria for Sample Selection

**Inclusion criteria-** Adults of the age group of 25-50 years. Adults who will be willing to participate in the study. Adult who will be able to read and write in Hindi. Adults who will present at the time of data collection. **Exclusion criteria-** Adults who have a medical history of cardiac arrest.

**Ethical Permission:** The study was carried out after receiving administrative permission from the principal HCN, SRHU. Ethical permission was taken from the ethical committee, SRHU and written informed content was taken from the study participants.

**Pilot study:** The pilot study was conducted after obtaining permission from the ethical committee and

the administrative authorities of SRHU. A 10% sample was taken for a pilot study. The pilot study was conducted in the community area of Bhogpur, Dehradun, Uttarakhand.

**Data Collection Procedure**

Data was collected from a selected community area of Bhogpur Dehradun, Uttarakhand. On date 7-8-23 to 9-8-23. We, 10 students of the research group distributed the tools to participants and collected the data by interviewing the participants, we explained our purpose of the study to participants to fill out the demographic profile, and a structured questionnaire along with a self-practice checklist was filled by interviewing.

**Data analysis**

Analysis of data consists of putting all of the individual observations, scores, measures, interview

data, and so forth into some manageable form. Data was analyzed based on the objectives of the study by using descriptive statistics. Descriptive statistics such as mean, median, mode, frequency, percentage, and standard deviation, were used to analyze the data. Analytical statistics such as p-value and chi-square test are used for data analysis.

**Result**

The analysis is a detailed examination of a topic. It involves performing research and separating results into smaller, logical topics to form reasonable conclusions. The data was obtained through selected socio-demographic variables, a self-structured knowledge questionnaire, and self-a self-reported practices checklist. Data was analyzed based on the following objective research study.

**SECTION A- Description of socio-demographic characteristics of participants.**

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

N=50

S.no.	Demographic Characteristics	Frequency(f)	Percentage
1.	AGE		
	25-30	21	42%
	31-35	5	10%
	36-40	10	20%
	Above 41	14	28%
2.	EDUCATION		
	No formal education	2	4%
	Primary education	4	8%
	Secondary education	17	34%
	Graduate or above	27	54%
3.	OCCUPATION		
	Self-employed	18	36%
	Government job	3	6%
	Private job	13	26%
	Other	16	32%
4.	MONTHLY INCOME		
	Below 10,000	25	50%
	10,001-15,000	14	28%
	15,001-20,000	5	10%
	Above 20,001	6	12%
5.	DIETARY PATTERN		
	Vegetarian	24	48%
	Non-vegetarian	3	6%
	Egg- eating	1	2%
	Mixed	22	44%

Table 1 depicts the majority of the study population from the 25-30 age group. Half of the population were graduates and had the above qualifications. 36% of participants were self-employed, 325 had other occupations whereas 26% had private jobs followed by 6% had government jobs. Half of the population had their monthly income below 10,000. 48% of the population were vegetarian and 44% of the population were mixed dietary patterns.

**SECTION B -To assess the knowledge regarding cardiac arrest.**

Table 2- Level of knowledge regarding cardiac arrest among adults

Variable	Range of Obtained score	Mean ± SD	Median	Mode
Knowledge Score regarding Cardiac arrest.	7 – 19	14.09 ± 2.644	15	15

Table 2 shows that the knowledge regarding cardiac arrest in their existing lifestyle was good. The mean knowledge score of adults regarding cardiac arrest was (14.09± 2.644) the range score was 7-19, median and mode were 15.

Figure 1: Knowledge score regarding cardiac arrest among adults.

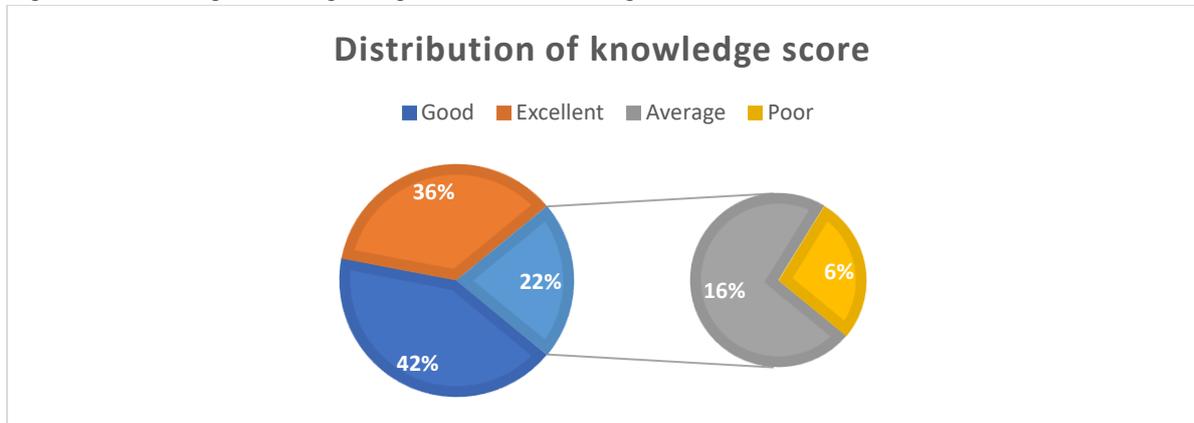


Figure 1 depicts that 42% of the participants have good knowledge regarding cardiac arrest. Poor knowledge score ranges between 7-9, Average score range between 10-12, Good score ranges between 13-15, and Excellent score range between 16-19 as well.

SECTION C: To assess the practice checklist regarding cardiac arrest among adults.

Table 3: Level of practice checklist score regarding cardiac arrest among adults.

Variables	Range of obtained score	Mean± SD	Median	Mode
Practice score regarding Cardiac arrest	4-13	9.22 ± 2.20	9	9

Table 3: shows that the healthy practice regarding cardiac arrest in their existing lifestyle was good. The score of adults regarding cardiac arrest was (9.22 ± 2.20), the range between the scores was 4-13 whereas the median and mode of the practice were 9 respectively.

SECTION D: To find an association between the knowledge score regarding cardiac arrest with their socio-demographic variables.

Table no.4: Association between selected demographic variables with knowledge score regarding cardiac arrest among adults

N=50

Sno.	Demographic Characteristic	Median less than 15	Median more than 15	Chi-square	P-value
1.	AGE			0.07	0.9
	25-30	13	8		
	31-35	3	2		
	36-40	6	4		
	40 or above	8	6		
2.	EDUCATION			1.10	0.7
	No formal education	1	1		
	Primary education	2	2		
	Secondary education	9	8		
	Graduate or above	18	9		
3.	OCCUPATION			3.46	0.32
	Self-employed	12	6		
	Government job	3	0		
	Private job	6	7		
	Others	9	7		

4.	MONTHLY INCOME				
	Less than 10,000	11	14	6.63	0.08
	10,001-15,000	12	2		
	15,001-20,000	3	2		
20,001 or above	4	2			
5.	DIETARY PATTERN				
	Veg.	17	7	3.8	0.27
	Non-veg	1	2		
	Egg - eating	0	1		
Mixed	12	10			

Table 4: this data shows that the socio-demographic variable of cardiac arrest among adults like age, education, occupation, monthly income, and dietary pattern has no significant association between knowledge regarding cardiac arrest and socio-demographic variables.

SECTION E- To find out the association between socio-demographic variables and practice regarding cardiac arrest among adults.

Table 5- Association between socio-demographic variable and practice regarding cardiac arrest among adults.

N=50

S no.	Demographical characteristics	Below median	Above median	Chi-square	P value
1.	AGE			4.31	0.22
	25 -30	10	11		
	31 – 35	2	3		
	36 – 40	3	7		
	40 above	2	12		
2.	EDUCATION			3.65	0.30
	No formal education	0	2		
	Primary education	0	4		
	Secondary education	6	11		
	Graduate and above	11	16		
3.	OCCUPATION			1.38	0.59
	Self-employed	7	11		
	Government job	0	3		
	Private job	4	9		
	Others	6	10		
4.	MONTHLY INCOME			3.59	0.30
	Less than 10,000	10	15		
	10,001 – 15,000	5	9		
	15,001 – 20,000	2	3		
	Above 20,001	0	6		
5.	DIETARY PATTERN			4.001	0.26
	Vegetarian	11	13		
	Non-vegetarian	0	3		
	Egg- eating	0	1		
	mixed	6	16		

Table 5: This data represents that the socio-demographic variable of cardiac arrest among adults' age, education, occupation, monthly income, and dietary pattern has no significant association with existing lifestyle practices and knowledge regarding cardiac arrest.

### DISCUSSION

The present study was been discussed following the objectives. To assess the knowledge regarding cardiac arrest in existing lifestyle Practices among adults in selected community areas of Dehradun, Uttarakhand

In the present study, half of the study population belongs to the 25-30 age group whereas 28% of the study population belongs to the over 40 years of age group. Half of the population were graduates and

had the above qualifications whereas 24% of the population had secondary education followed by 4% of study participants between the age group 25- over 40 years had no formal education. 36% of participants were self-employed, 32% had other occupations whereas 26% had private jobs followed by 6% had government jobs. Half of the population had a monthly income below 10,000 whereas 28% of the study population had a 10,000-15,000 monthly income for their household expenditure. 48% of the population were vegetarian and 44% of

the population were mixed dietary patterns. Another study conducted in north India included 194 patients in the study (mean age  $49.6 \pm 10.3$  years, 84.5% males) attending a cardiovascular disease prevention clinic at a tertiary center (Bansal et al., 2015). The other study was conducted to assess the knowledge, attitude, and practice regarding cardiovascular disease and cardiovascular risk factors in the community, including males (54.2%) and females (45.8%) with mean age and SD  $48.1 \pm 11.2$  respectively (Singh et al., 2024).

The current study revealed that the knowledge regarding cardiac arrest in their existing lifestyle was good. The mean knowledge score of adults regarding cardiac arrest was  $(14.09 \pm 2.644)$  the range score was 7-19, median and mode were 15. 42% of the participants have good knowledge regarding cardiac arrest. Poor knowledge score ranges between 7-9, Average score range between 10-12, Good score ranges between 13-15, and Excellent score range between 16-19 as well. The healthy practice regarding cardiac arrest in their existing lifestyle was good. The score of adults regarding cardiac arrest was  $(9.22 \pm 2.20)$ , the range between the scores was 4-13 whereas the median and mode of the practice were 9 respectively.

The study reveals that the use of tobacco and alcohol, lack of physical activity, obesity, hypertension unhealthy diet, other environmental factors, etc., along with aging and genetic factors cause atherosclerosis by narrowing blood vessels which leads to heart attack in later stages of the life years (Deepika et al., 2017). Another study also revealed that the risk factors mentioned in various literature reviews for Coronary Heart Disease are age; gender; genetics, use of tobacco (smoked and smokeless) high blood pressure; and elevated lipid levels, especially low-density lipoprotein cholesterol (Tran DT and Zimmerman LM, 2015).

A study reveals that in the case of Andhra Pradesh, most of the death cases are reported on heart attack and the average age of heart attack is about 49 years (Deepika et al., 2017). Another study revealed that 75% of the participants knew heart attack symptoms, stroke symptoms, and Cardiovascular Risk Factors respectively. Participants with Cardiovascular Risk Factors had 2.5 times lower knowledge of cardiovascular disease symptoms compared to those with existing Cardiovascular Disease (Singh et al., 2024). The other study reveals that the knowledge regarding the types of Cardiovascular Disease and stroke among study participants was low.

Approximately 60% of the study participants didn't know any type of cardiovascular disease in which coronary heart disease was the common type of CVD (Awad A, and Nafisi H., 2014).

The current study revealed that the socio-demographic variable of cardiac arrest among adults like age, education, occupation, monthly income, and dietary pattern has no significant association between knowledge regarding cardiac arrest and socio-demographic variables as well as the socio-demographic variable of cardiac arrest among adults' age, education, occupation, monthly income, and dietary pattern has no significant association with existing lifestyle practices and knowledge regarding cardiac arrest.

## CONCLUSION

The present study was conducted on the assessment of knowledge regarding cardiac arrest in existing lifestyle Practices among adults in selected community areas of Dehradun, Uttarakhand. The majority of the participants from 25-30 years of age as well as a majority of the participants had vegetarian and mixed dietary patterns. The study concluded that 78% of the adults had good knowledge regarding cardiac arrest whereas 60% of the adults knew the health practices regarding cardiac arrest in the existing lifestyle. Awareness campaigns or training sessions are conducted in the community for the general awareness of the public regarding the signs and symptoms of cardiac arrest. Basic Life Support training was provided to the community leaders and community volunteers.

## Limitation

In this study, some of the questions require an individual in-depth interview to get details of close-ended questions due to different reasons. The study results were limited to the rural population only.

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Conflicts of interest: - There is no conflict of interest.

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