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A descriptive exploratory study to assess knowledge regarding risk factors of coronary artery disease (CAD) among teachers in selected school of Jammu, J&K

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Abstract
The prevalence and incidence of coronary artery disease along with the risk factors profile vary greatly across the regions of the world. Coronary heart disease is the leading cause of death worldwide. The world health organization estimates 3.8 million men and 3.4 million women around the world die from it each year. The global burden of coronary heart disease (CHD) is rapidly increasing to the effect that it is likely to be the most common cause of disability-adjusted life years (DALY) loss in year 2020 as compared to fifth position in 1990. The present was aimed to assess the knowledge regarding risk factors of coronary artery disease (CAD) among teachers in selected school of Jammu, J&K. The sample consisted of 100 teachers of K C Public School, Jammu. Purposive convenient sampling technique was used to select the sample. Socio-demographic profile and Structured knowledge questionnaire was used to assess the level of knowledge. The results showed that majority of teachers 66 (66%) were having poor knowledge followed by 32 (32%) were having average knowledge and only 2 (2%) were having good knowledge regarding risk factors of coronary artery disease. The association of level of knowledge regarding risk factors of coronary artery disease with socio-demographic variables revealed that only age (in years) had significant association with the knowledge. The findings of the research study showed that maximum subjects had poor knowledge regarding risk factors of coronary artery disease. So the nurses, other health professionals and government should pay more attention to health and establish strategies to minimize risk factors and complications for coronary artery disease. Greater efforts to implement preventive measures might reduce complications and might improve quality of life.

Keywords: knowledge, coronary artery disease and employees

1. Introduction
Blood is a bodily fluid in human and others animal that deliver necessary substances such as nutrients and oxygen to the cells and transport metabolic waste products away from those same cells [1].

Arteries are blood vessels that carry blood away from the heart. While most arteries carry oxygenated blood, there are two exceptions to this, the pulmonary and the umbilical arteries. In developed countries, the two leading cause of death, myocardial infarction and stroke, may each directly result from an arterial system that has slowly and progressively compromised by years of deterioration [2].

The global burden of coronary heart disease (CHD) is rapidly increasing to the effect that it is likely to be the most common cause of disability-adjusted life years (DALY) loss in year 2020 as compared to fifth position in 1990 [3]. Coronary artery disease is a condition that develops due to the accumulation of atherosclerotic plague in the pericardial coronary arteries leading to Myocardial ischemia. Cardiovascular disease is affecting millions of people in both developed and developing countries, the prevalence of cardiovascular disease has increased dramatically. By 2020, the disease is forecasted to be the major caused morbidity and mortality in most developing nation [4].

The prevalence and incidence of coronary artery disease along with the risk factors profile vary greatly across the regions of the world. Regional differences in the prevalence and incidence of atherosclerotic coronary disease may depend upon the genetic variability, life-style differences and regional differences in the medical care system among others [5].

Coronary heart disease is the leading cause of death worldwide. Although, may have higher rate than women at all ages, coronary heart disease occur up to 10 years later in women. Coronary heart disease is major cause of death for both sexes:-the world health organization estimates 3.8 million men and 3.4 million women around the world die from it each year. Despite recent improvements, the mortality rate in the UK remains amongst the highest in the world and coronary prevention is a priority [6].

Being overweight, physical inactivity, unhealthy eating and smoking tobacco are risk factors for coronary artery disease. A family history of heart disease also increases your risk for coronary artery disease [7].

The risk factors for coronary artery disease are broadly classified as modification and non-modification risk factors. Modification risk factors include hypertension, diabetes mellitus, dyslipidemia, obesity and smoking. Non-modifiable risk factors include age, sex, race and family history for coronary artery disease [8].

Coronary artery disease also known as ischemic heart, is a group of disease that include: stable angina, unstable angina, myocardial infarction and sudden coronary death. A common symptoms is chest pain or discomfort which may travel into the shoulder, arm, back, neck or jaw. Occasionally, it may feel

like heartburn usually symptoms occur with rest [9].

The world health organization estimates that in 2010, 1.2 million Indians dead from heart disease and predicts that this number will more than double by 2020, giving India the greatest CVD burden of any nation by that year in the same thirty year period, death rate from the heart disease will rise by just 15%. By 2010 the states, 100 million Indians will have heart disease. In fact more than 25% of all cardiac patients in the world will be Indian. A major study found that the prevalence of heart disease in New Delhi and Chennai both in India was 10% and 11% respectively. Over the past three decades, heart disease rates in the nation of India have double in rural areas and tripled in urban areas [10].

It is estimated by the year 2020, India will have the largest cardiovascular burden in the world". He adds that among Indians CHD tends to occur earlier in life than in any other ethnic group [11].

Objectives of the study

1. To assess the level of knowledge regarding risk factors of coronary artery disease among teachers of selected school.
2. To find association of knowledge regarding risk factors of coronary artery disease among teachers with selected Socio-demographic variables such as age, gender, education etc.
3. To prepare and distribute an information booklet to the teachers.

2. Methodology

For the present study, Descriptive research approach and Non Experimental research design was used. The research setting was K C Public School, Jammu. The sample consisted of 100 teachers. Purposive convenient sampling technique was used to select the sample. Prior to the data collection procedure, formal permission was obtained from the Principal of school.

Socio-demographic profile, a Structured knowledge questionnaire was used to collect personal information. Socio-demographic profile included items like age, gender, type of living, type of family, dietary pattern, family history of hypertension and source of information. Self structured questionnaire schedule prepared to assess the level of knowledge of teachers on coronary artery disease (CAD). The review of literature, expert's opinions and investigator's own experience provided the basis for construction of tool.

Data collection was done in September 2017. Prior to interview the questionnaire to the teachers, investigator gave self introduction to the subjects and explained the purpose of gathering information. A good rapport was established with the subjects. They were assured that their responses will be used kept confidential and the information will be used only for research purpose. Formal consent was taken from subjects. The time taken by each respondent for filling the tool was average for 15-20 minutes. The data gathered was analyzed and calculated by percentage, mean, standard deviation and chi square.

Criterion Measures

Subjects were awarded with different levels of knowledge regarding coronary artery disease among employees such as:

Level of knowledge	Score	%
Poor	<14	<50%
Average	15-20	50-70%
Good	21-30	>70%

3. Results

Section-1

Sample characteristics

Table 1: Frequency and percentage distribution of Sample Characteristics (N=100)

Sr.no	Socio demographic variables	Frequency (n)	Percentage (%)
1.	Age (in years)		
	Less than 30	41	41%
	31-40	43	43%
	41-50	12	12%
	Above 50	4	4%
2.	Gender		
	Male	38	38%
	Female	62	62%
3.	Type of living		
	Urban	75	75%
	Rural	25	25%
4.	Type of family		
	Nuclear	51	51%
	Joint	49	49%
	Extended	-	-
5.	Dietary pattern		
	Vegetarian	63	63%
	Non vegetarian	36	36%
	Eggetarian	1	1%
6.	Family history of hypertension		
	Yes	23	23%
	No	77	77%

7.	Source of information		
	Hospital	22	22%
	Mass media	35	35%
	Books/pamphlets	19	19%
	Family/relatives	24	24%

Hence, it can be concluded that out of 100 samples majority of teachers were in age group 31-40 years, were females living in urban areas from nuclear family taking vegetarian diet. Majority were not having family history of HTN and mass/media was source of information among them.

Section 2

Objective wise Analysis

Objective 1: To assess the knowledge regarding risk factors for coronary artery disease among teachers of selected school of Jammu.

Table 2: Frequency and Percentage distribution of teacher's knowledge regarding coronary artery disease. (N =100)

Level of knowledge	Frequency (n)	Percentage (%)
Good	2	2.0
Average	32	32.0
Poor	66	66.0

Maximum score =30
Minimum score =0

The frequency and percentage distribution of knowledge among teachers showed the majority of teachers 66(66%) were having poor knowledge followed by 32(32%) were having average knowledge and only 2(2%) were having good knowledge.

Hence, it was concluded that maximum teachers were having poor knowledge regarding risks of coronary artery disease.

Objective 2: To find the association of knowledge regarding risk factors of coronary artery disease among teachers with selected socio-demographic variables.

Table 3: Association of level of knowledge regarding risk factors of CAD among teachers with age (in years) (N=100)

Age (in yrs.)	Knowledge Level					
	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Less than 30	30 (73.2)	10 (24.4)	1 (2.4)	41 (41)		
31-40	28 (65.1)	15 (34.9)	0 (0)	43 (43)		
41-50	8 (66.7)	4 (33.3)	0 (0)	12 (12)	6	$17.856^{(S)}$
Above 50	0 (0)	3 (75)	1 (25)	4 (4)		

Maximum score= 30 S= Significant
Minimum score= 0

Table-3 reveals association of knowledge regarding risk factors of CAD among teachers with age (in years). It shows that in the age group less than 30 years, 73.2% were having poor knowledge, 24.4% were having average knowledge and only 2.4% were having good knowledge. In 31-40 age group, 65.1% were having poor knowledge and 34.9% were having average knowledge. In 41-50 age group, 66.7% were having poor knowledge and 33.3% were having average knowledge. In above 50 age group, 75% were having average knowledge and only 25% were having good knowledge. Chi- square was computed (17.856) which showed the relationship among variables was significant at P<0.05 level.

Hence, it was concluded there was association of knowledge regarding risk factors for CAD among teachers with age (in years).

Table 4: Association of level of knowledge regarding risk factors of CAD among teachers with gender. (N=100)

Gender	Knowledge Level					
	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Male	25 (65.8)	12 (31.6)	1 (2.6)	38 (38)	2	$0.126^{(NS)}$
Female	41 (66.1)	20 (32.3)	1 (1.6)	62 (62)		

Maximum score= 30 NS= Not Significant
Minimum score= 0

Table-4 reveals association of knowledge regarding risk factors of CAD among teachers with gender. It shows that 65.8% males were having poor knowledge followed by 31.6% were having average knowledge and only 2.6% were having good knowledge. 66.1% females were having poor knowledge followed by 32.3% were having average knowledge and only 1.6% were having good knowledge. Chi-square was computed (0.126) which showed the relation among variables was non-significant at P< 0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors for CAD among teachers with gender.

Table 5: Association of level of knowledge regarding risk factors of CAD among teachers with type of living. (N=100)

	Knowledge Level					
Type of living	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Urban	48 (64)	25(33.3)	2(2.7)	75 (75)	2	1.1015^{NS}
Rural	18 (72)	7(28)	0(0)	25 (25)		

Maximum score=30 NS=Not Significant
Minimum score=0

Table-5 reveals association of knowledge regarding risk factors of CAD among teachers with type of living. It shows that 64% urban living employees were having poor knowledge followed by 33.3% were having average knowledge and only 2.7% were having good knowledge. In context to rural living, 72% were having poor knowledge and 28% were having average knowledge. Chi-square (1.015) was computed which showed relation among variables was non-significant at P<0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors of CAD among teachers with type of living.

Table 6: Association of knowledge regarding risk factors of CAD among teachers with type of family. (N=100)

	Knowledge Level					
Type of family	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Nuclear	36 (70.6)	14 (27.5)	1 (2)	51 (51)	2	$1.006^{(NS)}$
Joint	30 (61.2)	18 (36.7)	1 (2)	49 (49)		
Extended	0 (0)	0 (0)	0 (0)	0 (0)		

Maximum score=30 NS=Not Significant
Minimum score= 0

Table-6 reveals association of knowledge regarding risk factors for CAD among teachers with type of family. It shows that 70.6% from nuclear family were having poor knowledge followed by 27.5% were having average knowledge and only 2% were having good knowledge. In context to joint family, 61.2% were having poor knowledge followed by 36.7% were having average knowledge and only 2% were having good knowledge. Chi-square (1.006) was computed which showed relation among variables was non-significant at P<0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors for CAD among teachers with type of family.

Table 7: Association of knowledge regarding risk factors of CAD among teachers with dietary pattern. (N=100)

	Knowledge Level					
Dietary pattern	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Vegetarian	43(68.3)	19 (30.2)	1 (1.6)	63 (63)	4	$1.113^{(NS)}$
Non- vegetarian	21(61.1)	13 (36.1)	1 (2.8)	36 (36)		
Eggetarian	1 (100)	0 (0%)	0 (0)	1 (1)		

Maximum score=30 NS=Not Significant
Minimum score=0

Table-7 reveals association of knowledge regarding risk factors for CAD among teachers with dietary pattern. It shows that 68.3% vegetarians were having poor knowledge followed by 30.2% were having average knowledge and only 1.6% were having good knowledge. In context to non-vegetarian diet, 61.1% were having poor knowledge followed by 36.1% were having average and only 2.8% were having good knowledge. In eggetarian diet, 100% were having poor knowledge. Chi-square (1.113) was computed which showed the relation among variables was not significant at P<0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors for CAD among teachers with dietary pattern.

Table 8: Association of level of knowledge regarding risk factors of CAD among teachers with history of HTN. (N=100)

	Knowledge Level					
Family history of HTN	Poor n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Yes	15 (65.2)	7 (30.4)	1 (4.3)	23 (23)	2	$0.819^{(NS)}$
No	51 (66.2)	25 (32.5)	1 (1.3)	77 (77)		

Maximum score=30 NS=Not Significant
Minimum score=0

Table-8 reveals association of knowledge regarding risk factors of CAD among teachers. It shows that in the family history of HTN, 65.2% were having poor knowledge followed by 30.4% were having average knowledge and only 4.3% were having good knowledge. In context to No family history of HTN, 66.2% were having poor knowledge, 32.5% were having average knowledge and only 1.3% were having good knowledge. Chi-square (0.819) was computed which showed the relation among variables was not significant at P<0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors for CAD among teachers of with family history of HTN.

Table 9: Association of knowledge regarding risk factors of CAD among teachers with source of information. (N=100)

	Knowledge Level					
Source of information	Below average n (%)	Average n (%)	Good n (%)	Total n (%)	df	χ^2
Hospitals	15 (68.2%)	7 (31.8%)	0 (0%)	22 (22%	6	5.875(NS)
Mass media	20 (57.1%)	15 (42.9%)	0 (0%)	35 (35%)		
Books/Pamphlets	13 (68.4%)	5 (26.3%)	1 (5.3%)	19 (19%)		
Family/Relatives	18 (75%)	5 (20.8%)	1 (4.2%)	24 (24%)		

Maximum score=30 NS=Not Significant
Minimum score=0

Table-9 reveals association of knowledge regarding risk factors of CAD among teachers. It shows that the source of information through hospitals, 68.2% was having poor knowledge and 31.8% were having average knowledge. In context to mass media, 57.1% were having poor knowledge, 42.9% were having average knowledge. From books/pamphlets 68.4% were having poor knowledge, 26.3% were having average and only 5.3% were having good knowledge and in family and relatives 75% were having poor knowledge, 20.8% were having average knowledge and only 4.2% were having good knowledge. Chi square (5.875) was computed which showed the relation among variable to be non significant at P< 0.05 level.

Hence, it was concluded that there was no association of knowledge regarding risk factors for CAD among teachers with source of information.

4. Discussion

Objective 1: To assess level of knowledge regarding risk factors of coronary artery disease among teachers of selected school.

The analysis of data regarding the level of knowledge revealed that maximum 66% subjects had poor knowledge followed by 32% had average knowledge and only 2% had good knowledge regarding risk factors of Coronary Artery Disease. This is consistent with a study conducted to assess the level of knowledge regarding modifiable risk factors of myocardial infarctions among 50 coronary heart disease patients. The results showed that 82% had inadequate knowledge, 12% had moderately adequate and 6% had knowledge regarding modifiable risk factors of myocardial infarction. The study concluded that there is an immerse need of educational programme in related fields [12].

Objective 2: To find the association of knowledge regarding risk factors of coronary artery disease among teachers with selected socio-demographic variables.

The analysis of data to assess the association of knowledge regarding risk factors of coronary artery disease among employees with selected socio-demographic variables revealed that there is significant association of knowledge with age (in years) of subjects. This finding was also congruent with result of a study which concluded that there was significant of age with the knowledge related to coronary artery disease [13].

5. Conclusion

The findings of the research study showed that the subjects had poor knowledge regarding risk factors of coronary artery disease among employees in selected school of Jammu. So the nurses and other health professionals should pay more attention to health and establish strategies to minimize risk factors and complications for coronary artery disease. Greater efforts to implement preventive measures might reduce complications and might improve quality of life.

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