

# Knowledge and attitude regarding risk factors of cardio vascular disease among general people residing in Nepalganj, Banke; Nepal

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## Research article

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## **Abstract**

## **Background**

Cardio vascular disease (CVD), a group of disorders of heart and blood vessels. It is the leading cause of death globally including Nepal. The major factors which increase the risks are tobacco chewing/smoking, raised blood cholesterol level, high blood pressure, physical inactivity, overweight, obesity, excessive alcohol consumption, age, sex and heredity etc. Therefore, the aim of this study was to assess the level of knowledge and attitude regarding risk factors of cardio vascular disease among general people residing in Dhamboji-1,Nepalgunj, Banke; Nepal.

## **Methods**

A descriptive cross-sectional research design was adopted for the study and entirely based on primary data collected through structured and self-administered questionnaires during the month of July 2019. Non-probability convenience sampling technique was used to select 100 general people residing in Nepalgunj, Banke. The collected data were analyzed and summarized through descriptive as well as inferential statistics using SPSS software (version 21). The descriptive analysis was performed using frequencies, percentage etc. and for the inferential part of the study, chi-square test ( $\chi^2$ -test) was used.

## **Results**

The results of the study revealed that among total 100 respondents; 33 (33.0%) of the respondents had poor knowledge, 35(35%) of the respondents had average knowledge and 32(32.0%) had good level of knowledge regarding risk factors of cardio vascular disease. Likewise, the majority of respondents 68(68.0%) had unfavourable attitude, 32(32.0%) had neutral attitude and none of the respondents had favourable towards risk factors of cardio vascular disease. There was significant association between knowledge and educational status ( $p$  value = 0.010) and types of family ( $p$  value = 0.031). However, there was no statistically significant association between attitude and other demographic variables such as age, sex, family income, occupation, educational status, types of family, religion, marital status, level of education, present illness and personal habit.

## **Conclusion**

The findings of the study conclude that, though the attitude was unfavourable but the knowledge was average towards risk factors of cardio vascular disease among general people. Thus, comprehensive interventions against all risk factors should be planned and implemented to reduce the future burden of CVD in general people of Nepal.

## Background

The Cardiovascular diseases (CVDs) are group of disorders of the heart and blood vessels and they include coronary heart disease, cerebrovascular diseases, deep vein thrombosis and pulmonary embolism and some other disorders of heart [1]. Around 17.9 million people died from CVDs in 2016, representing 31% of all global deaths. Among these three-quarters of CVD deaths take place in low and middle-income countries. According to the WHO data published in 2017, Coronary Heart Disease deaths in Nepal reached 18.72% of total deaths [2]. CVDs are the leading cause of deaths in both developed and developing countries. In 2008, 30% (17.5 million people) of global all-cause mortalities were from CVDs. Of these, 6.2 and 7.3 million were due to stroke and coronary heart disease (CHD), respectively. It is expected to increase to 23.3 million by 2030 [3].

According to the heart disease and stroke statistics 2019 reported that cardiovascular disease remains the leading cause of death in United States, responsible for 840,768 deaths in 2016. But from 2006 to 2016, the US death rate from CVD decreased by 18.6% and from coronary heart disease by 31.8% [4]. CVD mortality rates in the South Asian countries are much higher than the East Asian countries [5]. South Asian countries have an increasing trend of risk factors for coronary heart disease (CHD) along with their economic development [6]. The South Asian countries Nepal, India, Pakistan, Sri-Lanka and Bangladesh contribute most to the worldwide CVDs burden [7]. In Nepal, it is estimated that 5.6% of people living in the mountains, 1.5% in the hills and 5% of people in the Terai region suffer from CVDs [8]. That's why; cardiovascular diseases (CVDs) are the leading causes of death globally including Nepal [2, 3, 4, 8]. In Nepal, the estimated age-standardized death rates caused by CVD (Ischemic Heart Disease and Cerebrovascular Diseases) were 152 and 82 per 100,000 population respectively in 2008 [9]. Moreover, 13.8% of industrial workers of Nepal were diagnosed with CVD in 2016 [10]. The deaths due to Non Communicable Diseases (NCDs: cardiovascular disease, diabetes, cancer and respiratory disease) have increased from 60% in 2014 to 66% of in 2018 of all deaths in Nepal [11].

According to Texas Heart Institute (THI) the main risk factors for cardiovascular diseases are hypertension, cigarette smoking, high fat level, diabetes, obesity and physically inactive and the minor risk factors contain stress due to anxiety, sex hormone intake, birth-control pills and alcohol drinking [12]. Furthermore, the major modifiable risk factors are tobacco smoking, physical inactivity, unhealthy dietary intake, high cholesterol and stress, eating fast food and carbonated drinks and non-modifiable risk factor are Age, Family history, Sex, Ethnicity [12, 13]. According to WHO, smoking, harmful use of alcohol, physical inactivity, unhealthy diets, obesity, hypertension, diabetes and hyperlipidemia are the established risk factors of CVDs. Smoking is estimated to cause nearly ten per cent (10%) of all CVDs followed by physical inactivity (6%), and overweight and obesity (5%). Also, low fruits and vegetables intakes caused death of approximately 16 million people [14, 15].

National NCD risk factors survey 2013 detected considerably high proportions of smoking (18.5%), alcohol consumption (17.4%), insufficient fruits and vegetables consumption (98.9%) and obesity (4%) among Nepalese [16]. It is emerging as a major killer even in Nepal where mortality attributed to CVD has

swiftly increased from 22–25% between 2004 and 2008. Most cardiovascular diseases share common risk factors like tobacco use, physical inactivity, unhealthy diet, harmful use of alcohol, diabetes, high blood pressure and raised lipid. Among them, behavioural risk factors unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol, alone contribute 80% of coronary heart disease and cerebrovascular disease [12, 13, 17].

There are several risk factors contributing to hypertension, such as age, gender and ethnicity. It is common in men over 45 years and women over 55 years. Positive family history being overweight and obese is also additional risk factors. Other life style factors that contribute to hypertension are smoking, stress cell phone use and physical inactivity, consumption of alcohol, increase salt intake reduce potassium take [18]. In Nepal, hypertension was the most prevalent risk factor for CVD which ranged from 26.0–38.9%. [19]. Nepal's high prevalence of underlying behavioural risk factors, particularly tobacco and alcohol consumption and poor cardiovascular health knowledge, is a matter of concern.[20].

According to the Surgeon General's Report on smoking and health in 2014 smoking is a major cause of cardiovascular disease (CVD) and causes approximately one of every four deaths from CVD. Also, exposure to second hand smoke causes heart disease in non-smokers. More than 33,000 non-smokers die every year in the United States from coronary heart disease caused by exposure to second hand smoke. Exposure to secondhand smoke can also cause heart attacks and strokes in non-smokers [21]. Diabetes is treatable, but even when glucose levels are under control it greatly increases the risk of heart disease and stroke. That's because people with diabetes, particularly type 2 diabetes, may have the contribute to their risk for developing cardiovascular disease are high blood pressure (hypertension), abnormal cholesterol, high triglycerides, obesity, lack of physical activity, smoking[22]. STEPS survey of Nepal in 2013 detected hyper cholesterol in 23.0%, smoking in 19.0%, overweight in 21.0%, raised blood glucose in 4.0%, physical inactivity in 3.0%, and harmful use of alcohol in 2.0% [23]. A study conducted in Jhaukhel, Duwakot; Nepal, revealed that median percentage scores for knowledge, attitude and practice/behavior were 79.3, 74.3 and 48 respectively. Nearly 44% of respondents had insufficient knowledge and less than 20% had highly satisfactory knowledge. Only 14.7% had a highly satisfactory attitude and 19.5% had satisfactory attitude and 13.9% had highly satisfactory practices. The study concluded that poor knowledge, unfavorable attitude and highly adverse behavior regarding cardiovascular health [24]. A study in Lamjung district, Nepal, the results found that smoking 24.1%, harmful use of alcohol 10.7%, insufficient intake of fruit and vegetables 72%, low physical activity 10.1%, overweight and obesity 59.4%, hypertension 42.9%, diabetes 16.2%, dyslipidemia 56.0% was common risk factors of cardio vascular disease. The study concluded that the risk factors of cardiovascular disease was high in rural population of Nepal [25]. Moreover, the study in Sitapaila village development committee, Kathmandu revealed that the majority of respondents were female, one third of respondents were Brahmin and Chhetri and over a quarter of respondents (29.1%) did not attend school. Cardio vascular disease risk factors included smoking (17.6%), alcohol consumption (29.4%), insufficient fruit and vegetables intake (98%), insufficient physical activity (21.0%), obesity (15.3%), hypertension (34.4%), diabetes (10.5%) and high triglyceride levels (10.8%). The study concluded that there was high prevalence

Loading [MathJax]/jax/output/CommonHTML/jax.js respondents [26].

Cardio vascular disease is the one of the major health problem in the developed and developing countries. It is the one of the most cause of death globally. Most of the previous studies showed that the knowledge was poor and attitude was negative towards cardio vascular disease. The outcomes of studies showed that need for better awareness regarding risk factors of cardio vascular disease among general people. Cardio vascular disease has gained worldwide attention and this is noted as one of the major challenges in the public health; there is a pressing need to study the trend of attitude towards Cardio vascular disease among general people. Thus, it is necessary to recognize knowledge and attitude of general people about this issue in order to make plans for medical challenge. However, few studies have assessed the Knowledge and attitude on CVD risk factors in Nepal and none in the mid-western part of Nepal. This study, therefore, has attempted to assess the knowledge and attitude regarding risk factors of cardio vascular disease among general people residing in Dhamboji-1, Nepalganj, Banke, Province number 5; Nepal.

## Methods

A descriptive cross sectional research design was adopted for the study dated in July 2019 to assess the knowledge and attitude regarding risk factors of cardio vascular disease among general people in Dhomboji-1, Nepalganj; Banke; Province number 5, Nepal. The study population of the present study comprised of all the people residing Dhomboji-1, Nepalganj, Banke, was 10,000. There were 2100 houses. A sample of 100 people was selected from people residing Dhomboji-1, Nepalganj, Banke by using non-probability convenience sampling technique. Face to Face interview technique was used to collect the data. The tools developed and used for data collection were structured and self-administered questionnaire and Likert scale consisting of three parts: (i) Performa to collect socio-demographic data, (ii) structured knowledge questionnaire regarding risk factors of cardiovascular disease and (iii) Likert scale to assess the attitude regarding risk factors of cardiovascular disease.

Further, the tool which consisted of socio-demographic data, structured Knowledge Questionnaire and attitude scale consisted of 11, 15 and 20 statements (questions) respectively. The knowledge score was classified into three categorized as good knowledge (>75%), average knowledge (50-75%) and poor knowledge (<50%) and also, attitude was measured by likert scale and arbitrarily classified as favorable attitude (>75%), Neutral attitude (50%-75%) and unfavorable attitude (<50%). The collected data were analyzed through descriptive as well as inferential statistics by using statistical package for social science (SPSS, version 21). The descriptive analysis was performed using frequencies, percentage in table etc. and for the inferential analysis chi-square test was used.

### Sample Selection Criteria

### Inclusion Criteria

The study has included the general people having age between 20 to 60 years residing in Dhamboji-1, Nepalganj; Banke and who

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- were willing to participate in the study.
- were available at the time of data collection

## **Exclusion criteria**

- General people residing Banke, who were not willing to participate in the study.

## **Pre-testing of tool and Reliability**

Reliability of the instrument was maintained through pre testing of instrument in 10% (10) of total sample size for arousing the understanding and accuracy of instrument. Pre-testing the instrument among 10% (10) of total sample size at community of Dhamboji-1, Nepalgunj and necessary modification of the instrument was carried out as necessary. Those participants were excluded from the study.

## **Ethical Consideration**

- Formal permission was taken from the Nepalgunj Sub Metropolitan city, Wada karyalaya, Dhomboji-1.
- Informed consent was taken from respondents before starting questionnaire.
- Confidentiality and privacy was maintained throughout the study.
- The data was personalized and was used for the purpose of study only.

## **Results**

The findings have been organized and presented under the following sections:

### **Section A: Description of demographic variables of respondents**

Table 1 depicts socio demographic characteristics that out of 100 respondents in which nearly half of the respondents 41 (41.0%) were belonged to age group (20-30) years and 15 (15.0%) of them aged between 50-60 years. Regarding sex, more than half of the respondents 56 (56.0%) were female and 44 (44.0 %) of the respondents were male. The most of the respondents 85 (85.0%) were literate and rest of the respondents 15 (15.0%) were illiterate. Likewise, 27(27.0%) respondents had possessed higher secondary education level, only 3 (3.0%) of the respondents had possessed primary level of education. Regarding religion, majority of the respondents 77(77.0%) were following Hinduism and the least of the respondents 4 (4.0%) were Buddhism. 33(33.0%) of the respondents had government jobs and least respondents 10(10.0%) were engaged in agriculture. Furthermore, majority of the respondents 69(69.0%) were married and only 1(1.0%) respondent was divorced. More than half of the respondents 59 (59.0%) did not have any present illness and the least of the respondents 2(2.0%) had cancer. Similarly, 39(39.0%) of the respondents had Rs.30, 000 and above family monthly income and 12(12.0%) of the respondents had below Rs.10,000 monthly income. Furthermore, more than half of the respondents 58(58.0%) were joint family and the least of the respondents 6(6.0%) was extended family. The majority of the respondents 70

(70.0%) ate mixed food and 11(11.0%) of the respondents were non-vegetarian. The majority of the respondents 63 (63.0%) did not have any personal habit and only 4(4.0%) of the respondents had personal habit of drug abuse and 4 (4%) were others.

### **Section B:** Distribution of Knowledge regarding risk factors of cardio vascular disease among general people

As shown in the table 2, the questionnaire contained 15 questions (statements) regarding knowledge of CVD risk factors. Each of these questions was equally scored (one point for each correct answer and zero otherwise). These points were then summed across all the questions. We categorised participants who obtained 12 or more upto 15 (i.e.12-15) correct responses having “good knowledge”, those with a score between 9 and 11 (i.e. 9-11) were classified as having “average knowledge” while those with a score of 8 and below were classified as having “poor knowledge”[27]

Thus, from the table 2, it reveals that among the total 100 respondents, 32 (32%) of respondents had good knowledge, 35(35.0%) of respondents had average knowledge and 33 (33.0%) had poor knowledge regarding risk factors of cardio vascular disease.

Figure 1 shows that the percentage distribution according to the level of knowledge regarding risk factors of cardiovascular disease among general people

### **Section C:** Distribution of attitude level regarding risk factors of cardiovascular disease among general people

In table 3, it consisted 20 statements (questions) on attitude regarding risk factors of cardiovascular disease among general people. All attitude statements were marked on a 5-point Likert scale such as strongly agree, agree, uncertain, disagree and strongly disagree. Each of these questions was equally scored. The table 3 depicts that majority of the respondents 68(68.0%) had unfavourable attitude, 32(32.0%) of respondents had neutral attitude and none of the respondents had favourable attitude regarding risk factors of cardiovascular disease

Figure 2 shows that the percentage distribution according to the level of attitude regarding risk factors of cardiovascular disease among general people.

### **Section D:** Association between level of Knowledge and Attitude regarding risk factors of cardiovascular disease with their selected demographic variables.

The results from the table 4, since, p-value ( $P < 0.05$ ) reveals that there was significant association between level of knowledge regarding risk factors of cardiovascular disease and educational status and types of family of respondents. Even though, there was no statistically significant association between level of knowledge and other demographic variables such as age, sex, family income, occupation, present illness, personal habit, religion, marital status, level of education at 5% (0.05) level of significance.

.Furthermore, since, p- value > 0.05, for selected demographic variables therefore, the table 5 depicts that there was no statistically significant association between level of attitude regarding risk factors of cardiovascular disease and socio-demographic variables such as age of respondent, sex, educational status, religion, level of education, family monthly income, types of family, occupation, present illness, personal habit, eating pattern, marital status at 5 % (0.05) level of significance.

## Discussions

This part deals according to the results obtained from the statistical analysis based on the data of the study. In the present study, nearly one third of the respondents 32(32.0%) had good knowledge, 35(35.0%) of the respondents had average knowledge and 33 (33.0%) had poor knowledge regarding risk factors of cardio vascular disease. This finding was in keeping with the results from a cross sectional study conducted by M Rosediani et al. in North- Eastcoast Malaysia from June to December 2010 to determine the knowledge, attitude and practice on cardio vascular disease, in which more than half of the respondents 55.6% had good knowledge [28]. Furthermore, the findings of the study is supported by the previous cross-sectional study conducted by Vaidya A et al., in Jhaukhel – Duwakot, Kathmandu in 2011 September to November to determine the knowledge, attitude and practice/ behaviour towards cardio vascular health among residents of community of Nepal. The study revealed that median percentage scores for knowledge had 79.3, also, less than 20% of the respondents had highly satisfactory knowledge (i.e. good knowledge), 36% of the respondents had average knowledge and nearly half of the respondents 44% had insufficient knowledge (i.e. poor knowledge) [ 24].

In the present study, concerning the attitude of general people regarding risk factors of cardio vascular disease, majority of the respondents 68(68.0%) had unfavourable attitude, nearly one third of the respondents 32(32.0%) had neutral attitude and none of the respondents had favourable attitude. This finding was in line with the study done in Jhaukhel – Duwakot, Kathmandu in which median percentage scores for attitude had 74.3 and only 14.7% of the respondents had favourable attitude [24].

Further, the present study revealed that there was statistically significant association between level of knowledge regarding risk factors of cardiovascular disease and educational status and types of family of respondents. Even though, there was no statistically significant association between level of knowledge and other socio-demographic variables such as age, sex, family income, occupation, present illness, personal habit, religion, marital status. This study is supported by a previous descriptive cross sectional study done by Abdelmoneim Awad and Hala Al-Nafisi in Kuwait from January to June 2014 for to assess the knowledge of cardio vascular disease and its risk factors among public revealed that there was no significant association between marital status and knowledge where p value is 0.757 [27]

The present study also shows that there was no statistically significant association between level of attitude regarding risk factors of cardiovascular disease and socio-demographic variables such as age of respondents, sex, educational status, religion, level of education, family monthly income, types of family,

occupation, present illness, personal habit, eating pattern, marital status. This finding was inconsistent with another study conducted in the country.

## Limitations Of The Study

- The study was limited to selected community of Dhomboji-1, Nepalganj.
- The study was limited to only those respondents who were willing to participate.
- The size of the sample was only 100, hence the findings of this study may not be generalized.

## Conclusion

Based on the above findings and discussion of this study, it is concluded that, though the attitude was unfavourable but the knowledge was average towards risk factors of cardio vascular disease among general people. It indicates the health education on risk factors of cardio vascular disease should be given to general people for improving knowledge and attitude.

## Recommendation

On the basis of the study, the recommendations were as follow:

- A similar study can be replicated on large sample to generalize the findings.
- A study can be done to find out effectiveness of health awareness program regarding risk factors of cardio vascular disease among community people.
- Further interventional study is recommended to enhance practice regarding risk factors of cardio vascular disease.
- Comprehensive interventions against all risk factors should be planned and implemented to reduce the future burden of CVD in general people of Nepal.

## Abbreviations

CVDs: Cardiovascular diseases; CVD:Cardiovascular disease, NCD:Non-communicable disease;  
CHD:coronary heart disease; THI:Texas Heart Institute; WHO:World Health Organization

## Declarations

### Ethics approval and consent to participate

Research involving human materials and human data in this study has been performed in accordance with the guidelines of the authority of ward office no. 1, Dhamboji of Nepalganj, sub-metropolitan city, Banke; Nepal. The health sector of this area is under the supervision of ward authority. The approval is issued in the letter head of the office including reference number 2076/77 B.S., 546. As per the guidelines Loading [MathJax]/jax/output/CommonHTML/jax.js

of the authority, privacy and confidentiality of the respondents have been maintained. Most of the participants provided written consent and some of them provided only verbal consent as they were illiterate. Participants were voluntary. Therefore, medium of data collection was verbal since all respondents of the locality could not produce their responses in the written form as guided by the ethical committee of ward office. Only permission has been obtained to collect the data for research study. No institutional review has been made for the manuscript because the review facility is not available in the ward office.

### **Consent to publish**

Not applicable

### **Availability of data and materials**

The required data and materials are available at the hands for this study from designing structured questionnaire and face to face interview. Proper precaution has been taken to maintain privacy and confidentiality of the data. The co-author has been commissioned to collect data.

### **Competing interests**

The authors declare that they have no competing interests.

### **Funding**

No funding has been received in conducting this research.

### **Authors' Contributions**

To complete this study, RPT has contributed in designing, supervising, analysing data and writing the manuscript. SR has done in developing and pre-testing of the questionnaire, collecting data, reviewing the manuscript and interpreting the results. Both authors read and approved the final manuscript.

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## Tables

**Table 1:** Frequency and Percentage distribution of respondents according to selected Socio-Demographic Variables, n = 100

S.No.	Socio-Demographic variables		frequency	Percentage (%)
1	Age	20-30 30-40 40-50 50-60	41 25 19 15	41 25 19 15
2	Sex	Male Female	44 56	44 56
3	Educational status	Literate Illiterate	85 15	85.0 15.0
3.1	Level of education (Literate) (n=85)	Primary level Secondary level Higher secondary level Graduate level and above	3 22 27 10	3 22 27 10
4	Religion	Hinduism Islam Buddhism Christianity	77 12 4 7	77 12 4 7
5	Occupation	Government job Business Agriculture Others	33 26 10 31	33.0 26.0 10.0 31.0
6	Marital status	Married Unmarried Widowed/ Widower Divorced	69 21 9 1	69.0 21.0 9.0 1.0
7	Present illness	Hypertension Diabetic mellitus Cancer Asthma Others None	10 13 2 5 11 59	10.0 13.0 2.0 5.0 11.0 59.0
8	Family monthly income	Below Rs.10,000 Rs. 10,000-20,000 Rs.20,000-30,000 Rs.30,000 and above	12 23 26 39	12.0 23.0 26.0 39.0
Loading [MathJax]/jax/output/CommonHTML/jax.js		Nuclear	36	36.0

		Joint	58	58.0
		Extended	6	6.0
10	Eating pattern	Vegetarian	19	19.0
		Non-vegetarian	11	11.0
		Mixed	70	70.0
11	Personal habit	Smoking	23	23.0
		Tobacco	6	6.0
		Drug abuse	4	4.0
		others	4	4.0
		None	63	63.0

**Table 2:** Frequency and Percentage Distribution of Level of Knowledge to assess the risk factor of cardio vascular disease among general people. n =100

S.No.	Level of Knowledge	Range of score	Frequency (%)
1	Good knowledge	12-15(>75%)	32 (32.0%)
2	Average knowledge	9-11(50%-75%)	35(35.0%)
3	Poor knowledge	<8 (<50%)	33(33.0%)

Minimum score = 0

Maximum score = 15

**Table 3:** Frequency and Percentage Distribution of level of attitude to assess the risk factors of cardio vascular disease among general people. n =100

Likert scale to assess risk factor of cardio vascular disease among general people.

S.No.	Attitude level	Range of score	Frequency (%)
1	Favourable	15-20 (>75%)	0(0.0%)
2	Neutral	1-14 (50%-75%)	32(32.0%)
3	Unfavourable	<10 (<50%)	68 (68.0%)

Minimum score = 0

Maximum score = 20

**Table 4:** Association between level of Knowledge regarding risk factors of cardiovascular disease with their selected demographic variables.

S.No.	Socio-demographic variables	Level of knowledge			Chi-square	P-value
		Good	Average	Poor		
1	Age	20-30 30-40 40-50 50-60	14 10 5 3	15 7 10 3	12 8 4 9	8.773 0.187**
2	Sex	Male Female	14 18	14 21	16 17	0.497 0.780**
3	Educational status	Literate Illiterate	30 2	32 3	23 10	9.117 0.010*
4	If literate ,level of education	Primary Secondary Higher Secondary Graduate Post graduate & above	1 8 11 6 4	0 6 11 12 3	2 8 5 5 3	16.400 0.089**
5	Religion	Hinduism Islam Buddhism Christianity	25 3 1 3	30 3 1 1	22 6 2 3	4.234 0.645**
6	Occupation	Government job Business Agriculture Others	10 8 2 12	12 7 3 13	11 11 5 6	5.236 0.514**
7	Eating pattern	Vegetarian Non-vegetarian Mixed	5 4 23	9 3 23	5 4 24	1.713 0.788**
8	Personal habitat	Smoking Tobacco Drug abuse None Others	5 1 0 3 23	8 3 2 1 21	10 2 2 0 19	8.586 0.378**
9	Family monthly income	Below Rs.10,000 Rs.10,000- 20,000 Rs.20,000-30,000 000& above	4 8 3 17	5 6 12 12	3 9 11 10	8.716 0.190**

10	Type of family	Nuclear Joint Extended	5 4 1	11 27 2	4 9 4	13.893	0.031*
11	Marital status	Married Unmarried Widow/widower Divorce	25 6 1 0	25 7 3 0	19 8 5 1	5.951	0.429**

\*Significant, \*\* Non-Significant: Significant ( $p\text{-value} \leq 0.05$ ) & Not significant ( $p\text{-value} > 0.05$ ) for two tailed test at 5% (0.05) level of significance

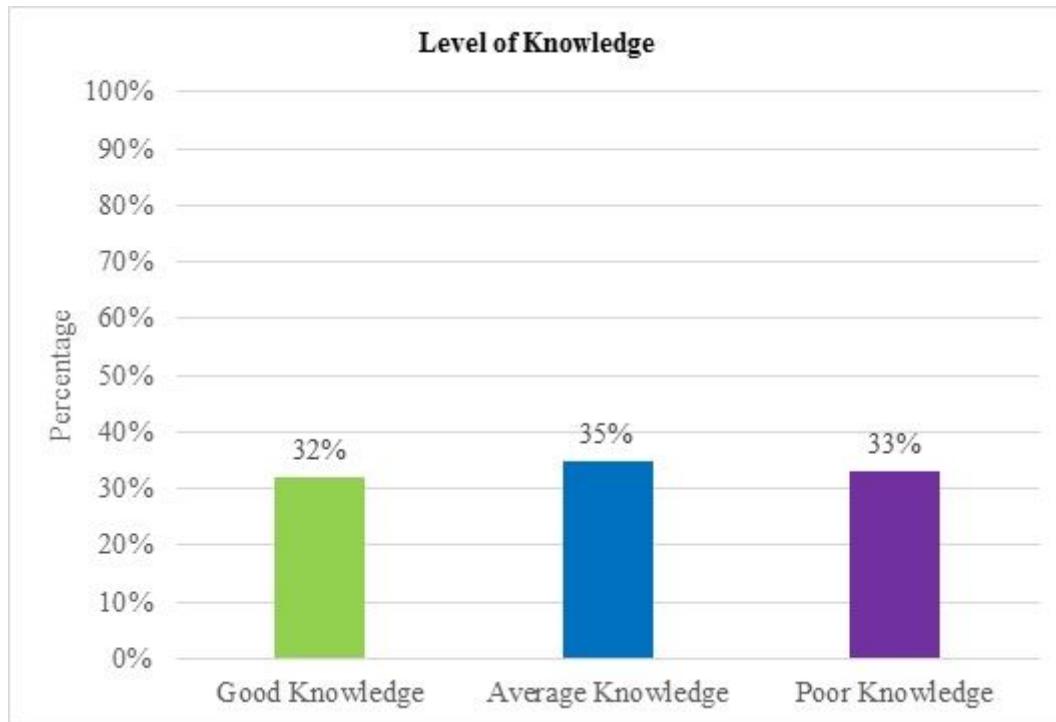
**Table 5:** Association between level of Attitude regarding risk factors of cardiovascular disease with their selected demographic variables

S.No.	Socio-demographic variables		Level of Attitude		Chi-square	P-value
			Neutral	Unfavourable		
1	Age	20-30	14	27	0.749	0.862**
		30-40	9	16		
		40-50	5	14		
		50-60	4	11		
2	Sex	Male	18	26	2.866	0.090**
		Female	14	42		
3	Educational status	Literate	27	58	0.014	0.904**
		Illiterate	5	10		
4	If literate, level of education	Primary	0	3	4.240	0.515**
		Secondary	8	14		
		Higher secondary	9	18		
		Bachelor	5	18		
		Post graduate & above	5	5		
5	Religion	Hinduism	25	52	1.623	0.654**
		Islam	4	8		
		Buddhism	2	2		
		Christianity	1	6		
6	Occupation	Government job	14	19	2.948	0.400**
		Business	8	18		
		Agriculture	3	7		
		Others	7	24		
7	Family income	Below	4	8	0.823	0.844**
		Rs.10,000	9	14		
		Rs.10,000-20,000	8	18		
		Rs.20,000-30,000	11	28		
		Rs.30,000& above				
8	Types of family	Single	9	26	2.930	0.403**
		Joint	20	38		
		Extended	3	4		
9	Marital status	Married	22	47	1.225	0.747**
		Unmarried	8	13		
		Widow/widower	2	7		
			0	1		

10	Present illness	None	16	43	5.443	0.364**
		Hypertension	4	6		
		Jaundice	4	9		
		Cancer	2	0		
		Asthma	2	3		
		Others	4	7		
11	Eating pattern	Vegetarian	8	11	1.867	0.393**
		Non-vegetarian	2	9		
		Mixed	22	48		
12	Personal habit	Smoking	7	16	8.596	0.072**
		Tobacco	4	2		
		Drug abuse	3	1		
		Others	2	2		
		None	16	47		

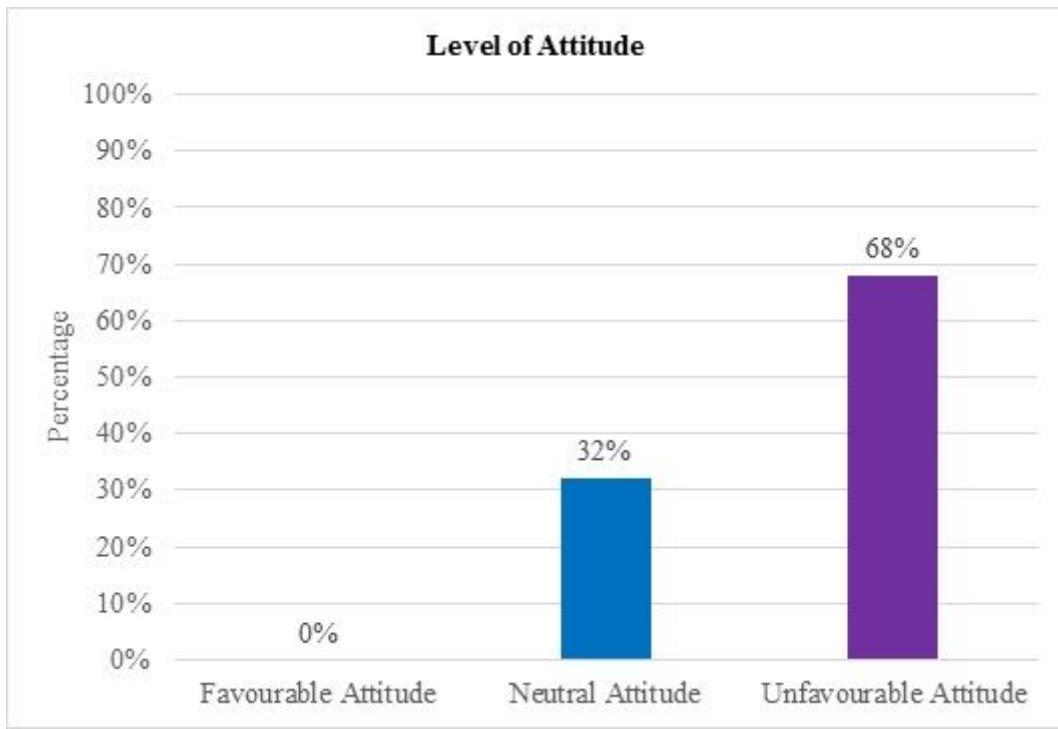
\*Significant, \*\* Non-Significant: Significant ( $p\text{-value} \leq 0.05$ ) & Not significant ( $p\text{-value} > 0.05$ ) for two tailed test at 5% (0.05) level of significance.

## Figures



**Figure 1**

shows that the percentage distribution according to the level of knowledge regarding risk factors of cardiovascular disease among general people



**Figure 2**

shows that the percentage distribution according to the level of attitude regarding risk factors of cardiovascular disease among general people.

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Questionnaires.docx](#)