



CODEN [USA]: IAJPBB

ISSN : 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

<https://doi.org/10.5281/zenodo.18847486>Available online at: <http://www.iajps.com>

Review Article

**KNOWLEDGE & ATTITUDE REGARDING  
CARDIOVASCULAR DISEASE RISK & PREVENTION IN  
PATIENT WITH CORONARY ARTERY DISEASE**<sup>1</sup>Usma Sharif, <sup>2</sup>Naseem Yaqoob, <sup>3</sup>Yasmin Bashir<sup>1</sup>Charge nurse, Chaudhary Pervaiz Elahi Institute of Cardiology, Wazirabad<sup>2</sup>Public Health Field Supervisor, College of Nursing and Midwifery, Fatima Jinnah  
University, Lahore<sup>3</sup>Charge Nurse, Mayo Hospital, Lahore**Abstract:**

**Introduction:** Cardiovascular disease (CVD) is a leading cause of death around the world including Pakistan. The patients' knowledge about cardiac risk factors is crucial for the effective management of modifiable risk factors.

**Objective:** To assess knowledge and attitude regarding cardiovascular disease risk and prevention in patient with coronary artery disease.

**Materials & methods:** It was descriptive, quantitative, cross-sectional study in nature in which 50 patient diagnosed with coronary artery disease included from the CCU of Institute of Cardiology. Self-administered questionnaires were used to collect the data from the participants.

**Results:** Total 50 participants appeared having age range 35 years to 55 years old. Only 44% respondents knew that they suffered from coronary artery disease and remaining 46% didn't. 14% reported that CAD (Coronary Artery Disease) was the leading cause of death and remaining 86% hadn't any idea about it. Overall, 64% participants showed low level of knowledge; 20% participants moderate level and only 16% participants showed high level of knowledge regarding CVD risks and prevention. On the other hand, 40% participants showed low level of attitude; 28% moderate and 32% showed high level of attitude regarding CVD

**Conclusion:** In conclusion, low level of knowledge found among the study participants regarding cardiovascular disease in patients with coronary artery disease whereas attitude was slightly better than knowledge.

**Keywords:** CVD (Cardio Vascular Disease), CAD (Coronary Artery Disease), knowledge, attitude, stress, obesity etc.

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Please cite this article in press Usma Sharif et al., Knowledge & Attitude Regarding Cardiovascular Disease Risk & Prevention In Patient With Coronary Artery Disease., Indo Am. J. P. Sci, 2026; 13(03).

**INTRODUCTION:**

The prevalence of the coronary artery disease (CAD) is increasing in the developing countries, including Pakistan. Coronary artery disease (CAD) is usually due to atherosclerosis which may lead to angina or heart attack (**Heart-Encyclopedia, 2019**). With around 17.5 million deaths recorded globally, more than 75% of these deaths have occurred in developing countries such. Risk factors leading to CAD are dyslipidemia, diabetes mellitus, hypertension, obesity, unhealthy eating patterns, smoking, alcohol consumption, and lack of physical activity (**Gupta R, 2016**).

The American Heart Association emphasized the importance of lifestyle modifications and the development of strategies that help to modify health behaviors in CAD (**Habibovic M, 2018**). Inadequate knowledge regarding the disease will affect attitude toward disease, assent with medical advice, and practice necessary for the prevention and treatment of CAD (**Kayaniyil S, 2009**).

Cardiovascular diseases (CVD), including coronary artery disease (CAD), constitute major public health problems worldwide. Each year, mortality due to heart diseases exceeds that of cancer around the world. Most countries face high and increasing rates of CVD. It is one of the principal causes of death and disability in the United States and most European countries (**GBD, 2015**). A recent survey showed that the vast majority of killer diseases in the Kingdom of Saudi Arabia (KSA) are non-communicable, chronic diseases (**Memish ZA, 2010**).

The worldwide increase in CVDs, especially in the developing countries, is caused by the rapid urbanization and its related reduction in physical activity and unhealthy diet. By the time heart problems are detected, their underlying pathology (atherosclerosis) is usually well established, and had been developing for long time. A recent study reported a high prevalence of cardiovascular disease risk factors among young adults (**Ibrahim NK, 2014**).

Risk factors, including unhealthy diet, sedentary lifestyle, cigarettes or shisha smoking, and obesity, are reaching dangerous levels in our community. The interaction of these risk factors with other genetic, physiologic, and environmental factors plays a major role in the underlying cause of coronary artery disease (CAD). Healthy diet, exercise and avoidance of smoking are invaluable measures in preventing atherosclerosis. A national prevention program at the community level as well as high risk groups is highly recommended to prevent the rapid rise in CAD morbidity and mortality. Therefore, the

assessment of knowledge, attitude and practice of CAD and the association of these three components with the educational level of the general population could be one of the most important factors in planning how to prevent CAD that is fatal even in those patients who are without a history of coronary heart disease. On the light of the current health care service and policy that highlights the importance of implementing preventive measures against the coronary vascular diseases in general, we carried out this study aiming at evaluating knowledge, attitude, and practice of CAD risk factors among men and women.

**Research objectives**

- ⊙ To assess the knowledge regarding cardiovascular disease risk and prevention in patient with coronary artery disease.
- ⊙ To assess the attitude regarding cardiovascular disease risk and prevention in patient with coronary artery disease.

**Research questions**

- ⊙ What was the level of knowledge regarding cardiovascular disease risk and prevention in patient with coronary artery disease?
- ⊙ What was the level of attitude regarding cardiovascular disease risk and prevention in patient with coronary artery disease?

**Definition of key terms**

- ⊙ **Cardiovascular disease (CVD)**

It is a type of disease that affects the heart or blood vessels. The risk of certain cardiovascular diseases may be increased by smoking, high blood pressure, high cholesterol, unhealthy diet, lack of exercise and obesity.

- ⊙ **Coronary Artery Disease (CAD)**

It is a type of disease that causes by plaque buildup in the all of the arteries that supply blood to the heart. It is made up of cholesterol deposits and plaque buildup causes the inside of the arteries to narrow overtime.

- ⊙ **Knowledge**

It is facts, information and skills acquired through experience or education; the theoretical and practical understanding of a subject.

⊙ **Attitude**

It is a settled way of thinking or feeling about something.

**METHODOLOGY:**

**Study design:**

The study was descriptive (Quantitative) in nature & cross-sectional study design (observational design) was adopted because the data was collected from many different individuals at a single point.

**Study setting:**

The study was conducted at CCU (Cardiac Care Unit) of Punjab Institute of Cardiology.

**Duration of study:**

The study completed in 3 months (from 01-08-2022 to 31-11-2022).

**Study Population:**

Patients admitted in CCU of Punjab Institute of Cardiology diagnosed with the coronary artery disease.

**Sample size & sampling**

In the population of 57 patients following sample was drawn for the study by using listed below formulae:

$N = \text{Population} = 57$ ;  $n = \text{Sample Size}$ ;  $E = \text{Margin error} = 0.05$

$$n = \frac{N}{1 + N(E)^2}$$

$$n = \frac{57}{1 + 57(0.05)^2}$$

$$n = \frac{57}{1 + 57(0.0025)}$$

$$n = \frac{57}{1 + 0.1425}$$

$$n = \frac{57}{1.1425}$$

$$n = 49.89$$

Thus a more suitable sample of  $n = 50$  considered for the study.

**Sampling Technique:**

Convenient sampling technique.

**Eligibility Criteria:**

**Inclusion Criteria:**

- Patients having age range 35 years to 55 years old included in the study.
- Both male & female patients having coronary artery disease participated in the study.

**Exclusion Criteria:**

- Patients less than 35 years old age and more than 55 years old excluded from the study.
- Patients other than coronary artery disease and CVD excluded from the study.

**Data collection method**

Self-administered questionnaire were used to collect the data from the study participants.

**Ethical consideration**

This study was approved by the ethical review committee of the institution and performed in accordance with the principles of Committee. To ensure their voluntary participation, inform consent was obtained from all the participants. All participants had autonomy to withdraw their consent at any time during the stipulated period of the study.

**3.10. Data Analysis**

Data was depicted in MS Excel and presented in the form of tables and graphs. Its accuracy can be checked via percentages and frequencies shown in the tables and graphs.

**RESULTS:**

As descriptive cross-sectional study held at CCU of Institute of Cardiology regarding cardiovascular risks and preventions in patients with coronary artery disease in which 50 participants appeared having age range 35 years to 55 years old. There were 24% participants belonged to an age group of (35-55) years; 26% were from (40-44) years; 16% respondents had an age group of (45-49) years and remaining 34% participants belonged to (50-55) years old as depicted in the table no. 4.1. & figure no. 4.1.

Table 4.1. Demographic data of study participants

Variables	Frequency (f)	Percentage (%)
<b>Age (Years)</b>		
35-39 years	12	24.00
40-44 years	13	26.00
45-49 years	8	16.00
50-55 years	17	34.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Marital status</b>		
Single	4	8.00
Married	46	92.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Gender</b>		
Male	39	78.00
Female	11	22.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Qualification</b>		
Illiterate	8	16.00
Literate	11	22.00
Primary education	9	18.00
Secondary education	14	28.00
Higher education	8	16.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Family history of heart disease</b>		
Yes	19	38.00
No	31	62.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Perception about daily life</b>		
Stressful daily life	23	46.00
Not having a stressful daily life	7	14.00
Partly experiencing stress	20	40.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Daily exercising activity</b>		
Doing (Walking, fitness)	8	16.00
Do not exercise	42	84.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Individual perceptions of the level of mobility</b>		
Physically not active	38	76.00
Physically active	12	24.00

<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Regular health checkups</b>		
Yes	5	10.00
No	45	90.00
<b>Total</b>	<b>50</b>	<b>100.00</b>
<b>Receiving education about heart disease</b>		
Yes	7	14.00
No	43	86.00
<b>Total</b>	<b>50</b>	<b>100.00</b>

In the sample of 50 participants, there were 78% male and 22% female participants included and as per their family history of heart disease 38% participants having history of heart disease and 62% didn't as indicated in the table no. 4.1. & figure no. 4.2.-4.3.

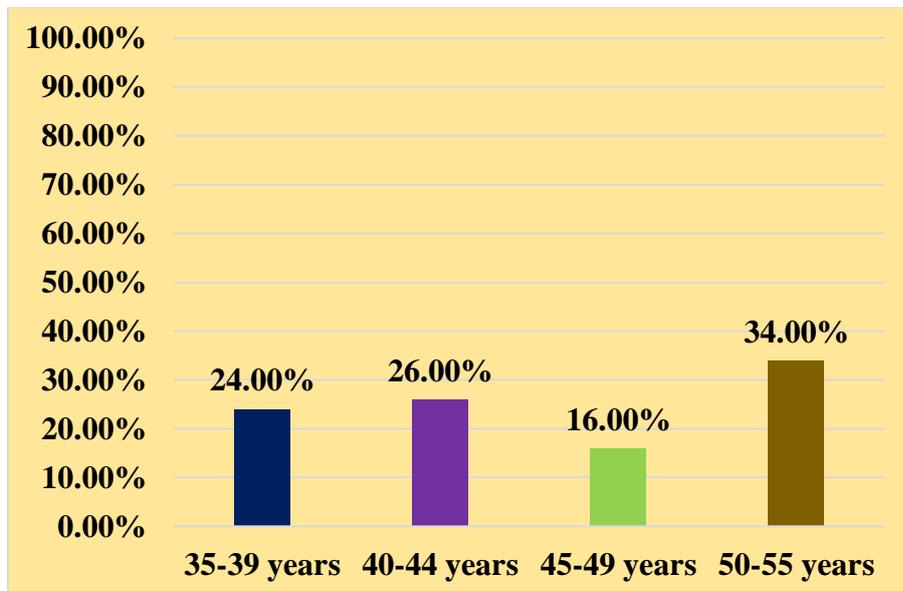


Figure no. 4.1. Age of study participants

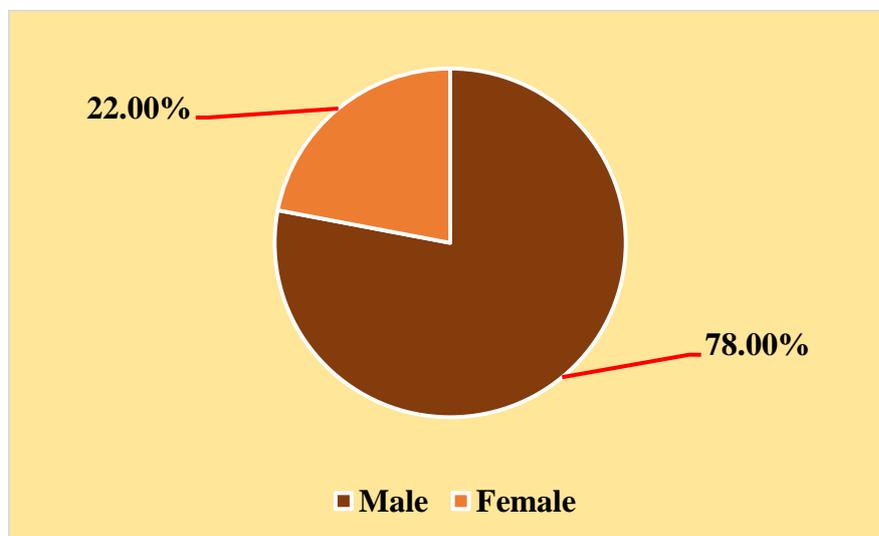
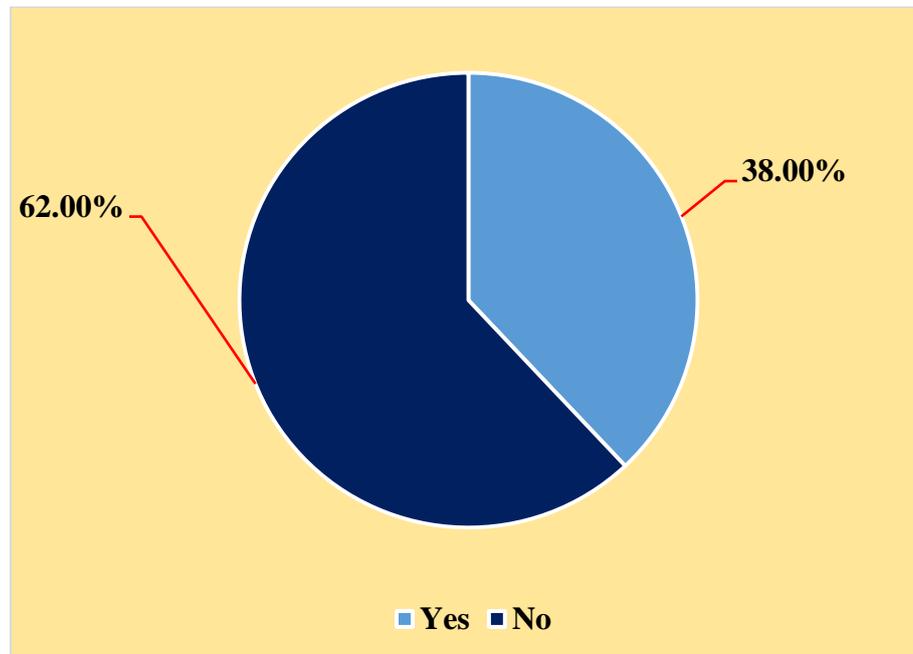


Figure no. 4.2. Gender of study participants



**Figure no. 4.3. Family history of heart disease among study participants**

In the population of 57 participants 50 participants met the criterion of the study and rest of the participants excluded from the research work administered regarding knowledge and attitude of CVD risks and preventions in patient with coronary artery disease. Only 44% respondents knew that they suffered from coronary artery disease and remaining 46% didn't. While only 24% respondents knew that CAD was related to

obstructed blood vessels and rest of 76% didn't as shown in the table no. 4.2.

As total 50 participants included in the study, out of which 14% reported that CAD (Coronary Artery Disease) was the leading cause of death and remaining 86% hadn't any idea about it. Even 28% participants reported that CAD was gender related disease and others 52% participants were not assured as mentioned in the table no. 4.2.

**Table 4.2. Assessment of knowledge and attitude regarding cardiovascular disease risks and prevention in patient with Coronary Artery Disease (n=50)**

Sr. No.	Questions	Responses		
		Yes (f) %	No (f) %	I don't know (f) %
1	Suffer from coronary artery disease	22 (44%)	23 (46%)	5 (10%)
2	CAD is related to obstructed blood vessels	12 (24%)	21 (42%)	17 (34%)
3	CAD is the leading cause of death	7 (14%)	22 (44%)	21 (42%)
4	CAD is related to gender	14 (28%)	21 (42%)	15 (30%)
5	Physical activity lowers the risk of CAD	8 (16%)	18 (36%)	24 (48%)
6	Walking and gardening are exercises that lower the risk of CAD	6 (12%)	21 (42%)	23 (46%)
7	Exercise at a gym/exercise class lower the risk of CAD	8 (16%)	14 (28%)	28 (56%)
8	Exercise center nearby in locality	4 (8%)	36 (72%)	10 (20%)

9	Undergo regular medical checkup	5 (10%)	31 (62%)	14 (28%)
10	Willing to follow recommended treatment by a doctor	34 (68%)	16 (32%)	0 (0%)
11	Willing to quit alcohol and smoking	39 (78%)	11 (22%)	0 (0%)
12	Necessary to maintain weight	12 (24%)	23 (46%)	15 (30%)
13	More exercising prevents CAD	6 (12%)	32 (64%)	12 (24%)
14	Awareness about one's lipid levels	5 (10%)	31 (62%)	14 (28%)
15	Stress management to prevent CAD	9 (18%)	15 (30%)	26 (52%)
16	Prefer walking than using vehicle to go nearby	8 (16%)	42 (84%)	0 (0%)
17	Willing to participate in exercise protocol under a physiotherapist	6 (12%)	33 (66%)	11 (22%)
18	Willing to make dietary changes	23 (46%)	21 (42%)	6 (12%)

There were total 50 participants included in the study and as per attitude to prevent CVD in patient with Coronary Artery Disease 78% participants reported that they were willing to quit alcohol/smoking while 22% didn't show such attitude. Only 24% participants revealed that they can maintain weight to control CVD and 76% didn't as recorded in the table no. 4.2.

Only 18% participants reported that by managing stress we can prevent cardiovascular disease and as well as overcome coronary artery disease and

82% didn't show positive attitude. Even 46% respondents were willing to make dietary changes to manage CVD and 54% respondents showed negative attitude towards it as determined in the table no. 4.2. Overall, 64% participants showed low level of knowledge; 20% participants moderate level and only 16% participants showed high level of knowledge regarding CVD risks and prevention. On the other hand, 40% participants showed low level of attitude; 28% moderate and 32% showed high level of attitude regarding CVD as depicted in the figure no. 4.2.

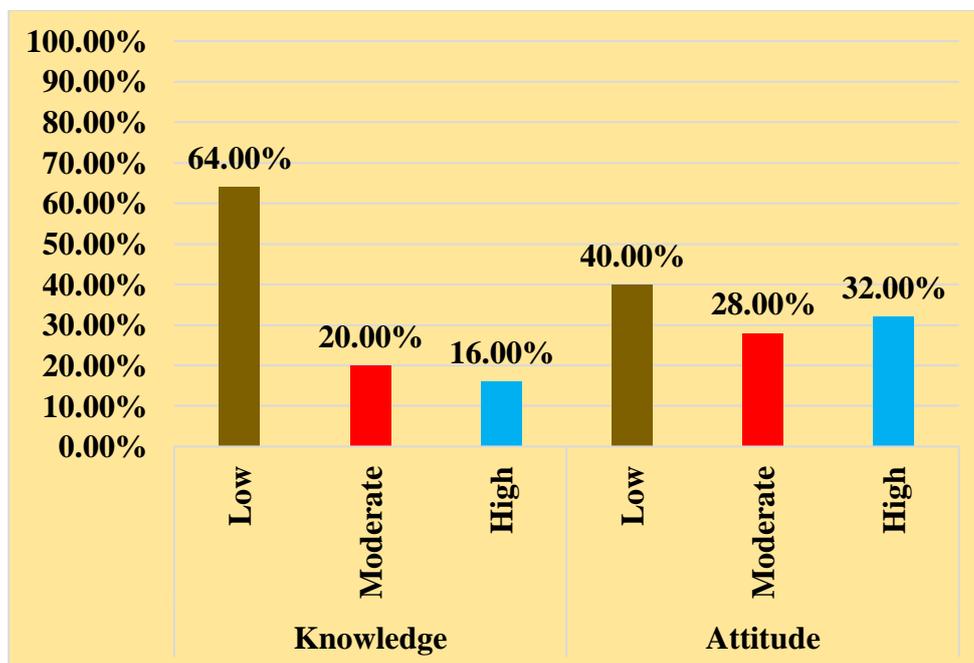


Figure no. 4.4. Level of knowledge and attitude among study participants regarding CAD

## DISCUSSION

Current study undertaken at CCU of Institute of Cardiology regarding knowledge and attitude of cardiovascular disease risks and prevention in patient with coronary artery disease in which 50 participants having CVD met the requirement of the research work. Current study result is contradicted with the findings of (C. Noel Bairey Merz, 2017) in which only women chose regarding Cardiovascular disease (CVD) and determined that CVD is gender related disease whereas in our result both male and female affected by this disease and majority of male patients enrolled in the study.

In another study by (Semih Akin et al., 2021) is also dissimilar with the findings of current result and found that patients with coronary artery diseases had moderate knowledge about the management of cardiac risk factors whereas current findings depicted low level of knowledge found among study participants regarding CVD risks and prevention. Whereas some findings particularly support for improving their knowledge about cardiac risk factors such as diet, stress management, and medication regimen matches with current study. Another study by (Shrestha M et al., 2020) is also contradicted with current result as the knowledge was found to be average and the attitude was found to be good while our result revealed low level of knowledge and attitude among study participants. Prevention strategies included exercise more, change eating habits and quit smoking if they had CVDs are according to our result.

Current study verified the findings of (Ni Kadek Ayu Suarningsih, Suindrayasa, 2020) who carried out a study in Indonesia and found highest risk factors were smoking, high cholesterol, high LDL cholesterol levels, uncontrolled blood pressure and overweight as our result found same risk factors whereas other findings is contradicted with current result as majority of respondents were aware of and have adequate knowledge about CHD risk factors whereas current study showed low level of knowledge among study participants regarding CVD. On the other hand another study by (Amarasekara et al., 2016) is not familiar to our result as patients having a moderate knowledge and high attitude in Sri Lanka regarding CVD risk factors while in current study low level of knowledge and attitude noticed among coronary artery disease patients. As well as a research by (Abukhudair W. et al., 2022) also is dissimilar to current findings as most participants have a good level of knowledge and awareness about CAD. Whereas our result didn't show good knowledge among study participants, although some respondents reported high and

moderate level of knowledge regarding CVD risk and prevention.

Current study result in accordance with the findings of (Mohammad NB, Rahman NA, Haque M., 2018) who revealed irregular eating pattern can cause disease and the benefits of vegetable intake and smoking, obesity were CVD risk factors. Whereas other findings is contradicted with the result in which patients had good knowledge and attitude regarding CVD risk factors. As well as another study by (Leonard Ntwari Nyagasare et al., 2022) also contradicted with current result in which participants had high level of knowledge and attitude regarding CVD risks and prevention.

Overall, there is a need to disseminate health awareness among Pakistani nation to reduce the burden of disease in the country. It is uncertain that if patients having adequate knowledge and high level of attitude as many countries researchers showed because if a person having sufficient health then he/she will implement it in daily life. It is very crucial to disseminate all health related information and awareness among Pakistani nation but not impossible because we required healthy nation to become developed country so why not health minister is taking positive steps in this regard by involving all healthcare staff.

## CONCLUSION:

In conclusion, low level of knowledge found among the study participants regarding cardiovascular disease in patients with coronary artery disease whereas attitude was slightly better than knowledge. On the whole, low level of knowledge and attitude investigated among the patients of CAD regarding CVD risks and prevention. However, lack of mobility, smoking obesity, high cholesterol and imbalanced diet found to be prime risks of CVD and quitting smoking, physical activity/exercise, walking, cycling and balanced diet found to be most appropriate prevention strategies among study participants.

## RECOMMENDATIONS

- ◆ Disseminate health awareness among population of Pakistan via electronic media (TV, FM), social media and print media so that our nation may improve their quality of life.
- ◆ Use cost-effective (TV) is best medium to spread health information among the nation of Pakistan.

- ◆ Improve literacy rate of Pakistani nation as well as disseminate health awareness among educate people too.
- ◆ Health minister should take affirmative actions via using multiple NGOs, health subsidiaries and all paramedical staff should be involved because it is a continuous and consistent effort and mutual consent of surplus manpower not sole one.

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