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# KNOWLEDGE AND AWARENESS OF CARDIOVASCULAR DISEASE AND ITS RISK FACTORS IN YOUNG ADULTS

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## ABSTRACT

**Background:** Cardiovascular disease (CVD) is the leading cause of death and disability worldwide, particularly in low- and middle-income countries. Young adults are more susceptible to CVD risk factors, especially in developing countries. As there is No Established Health Program In India To Promote Health Education And Awareness About CVD and Its Risk Factors, This study will point out the need of research so that some advanced diagnosis system may be developed for proper diagnosis of CVDs in early age and to reduce the growing burden of CVDs in the country.
**Method:** The present observational study was conducted on a sample of 281 normal healthy young individuals aged between 20 To 45 years in Gujarat ,including 119 females and 162 males.A Self administered Questionnaire of 27 questions was spread through google form link online via social media. Statistical analysis (Descriptive) was done using Excel 2019.
**Results:** The study participants showed deficiencies in CVD Knowledge and awareness, which could turn into insufficient preventive behaviour and sub optimal patient outcomes.
**Conclusion:** Poor knowledge and inappropriate attitudes regarding CVD and its risk factors shows urgent need to establish more wide-spread and effective educational interventions.It is recommended to design and implement a healthy diet, physical activity, stress management, and healthy lifestyle programs for the young group along with screening programs to prevent complications and mortality caused by CVD.
**Keywords:** Cardiovascular disease , Young adults , Knowledge , Awareness

## INTRODUCTION

Cardiovascular disease (CVD) is the leading cause of death and disability worldwide, particularly in low and middle-income countries. Cardiovascular diseases (CVDs) are group of disorders that involve the heart or blood vessels or both. They include coronary heart disease (CHD), cerebrovascular disease, peripheral arterial disease, rheumatic heart disease, congenital heart disease, Deep vein thrombosis and pulmonary embolism.(1)

Young adults are susceptible to CVD risk factors, especially in developing countries.The annual number of deaths from CVD in India is projected to rise from 2.26 million (1990) to 4.77 million (2020).Coronary heart disease prevalence rates in India have been estimated over the past several decades and have ranged from 1.6% to 7.4% in rural populations and from 1% to 13.2% in urban populations.(2)

Coronary heart disease (CHD) is an increasing worldwide health burden. CVD risk factors are

divided into non-modifiable and modifiable categories. The former includes age, sex, family history, and race, while the latter consists of hypertension, dyslipidemia, smoking, diabetes, obesity, a sedentary lifestyle, an unhealthy diet, and stress.(3)

It is expected that by the year 2030, more than 23 million deaths will be caused by CVDs with stroke and coronary heart disease (CHD) being the leading contributors.(3,4) Deaths from CVDs have declined progressively over the past three decades in high-income countries because of implementation of population-wide preventive strategies, effective primary and secondary preventive healthcare, and availability of improved treatment for acute events.(4) Therefore, measurements of the knowledge and attitude of CVD risk factors are necessary to develop and implement targeted public health interventions(5).

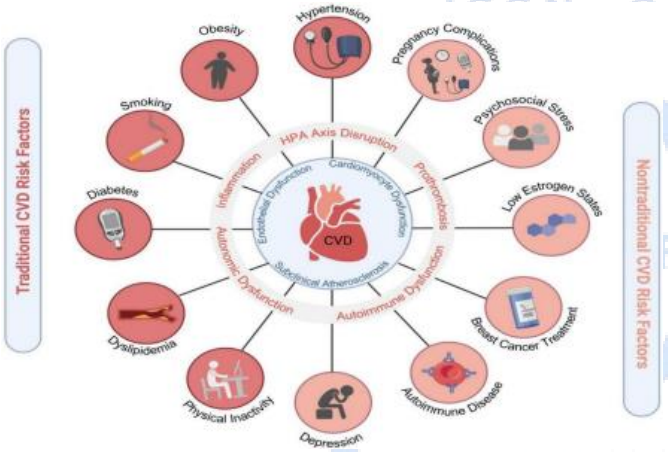



**Figure 1: Risk factors of Cardiovascular disease**

The problem of increasing risk factors for CVD in India is because of lack of surveillance system and lack of proper diagnosis.(6) A heart condition that is not identified may cause a young person to suddenly die during physical activity, such as competitive sports.(7) India has more than 50% of its population below the age of 25 and more than 65% below the age of 35.( 8 )Dr Okaly tells that "heart attacks are seen at least one decade earlier among Indians compared to western populations." India has witnessed an upsurge of heart attacks among young adults and people in their 30s and 40s.

As of today, 1 in 5 heart attack patients are younger than 40 years of age. Dr Okaly confirms that "In the past, children used to bring their parents to the doctors for heart related issues. Now it is not uncommon to see parents bringing their children in their 30s and 40s to the doctors for heart related issues".

Currently, there is no Established School Health Program In India To Promote Health Education And Awareness About CVD and Its Risk Factors.(9) The WHO estimate that over 75% of premature CVD is preventable.(10) The objective of the present study is to measure the present Level of awareness of the components of cardiovascular Health And to identify the factors associated with knowledge deficit's.(11) Being a part of Allied Health Professionals, physical therapists should also ethically practice safety measures and risk management strategies to ensure patient safety

## METHODOLOGY

**Study Setting:** Hospitals,clinics, Offices,colleges, Admin departments ,Shops, Societies , Various rural and urban areas etc. of Gujarat.

**Study Design:** Observational study

**Study Population:** Healthy young adults

**Sampling Technique:** Purposive sampling

**Sample Size:** 281

**Study Duration:** 6 Months (December 2024 to May 2025)

**INCLUSION CRITERIA:**

- Age group: 20 to 45 years
- Both males and females
- Those who had access to a device (e.g. smartphone , computer ,Laptop ,Tablets) with internet connectivity.
- People who were able to understand English language
- People who willing to participate in study.

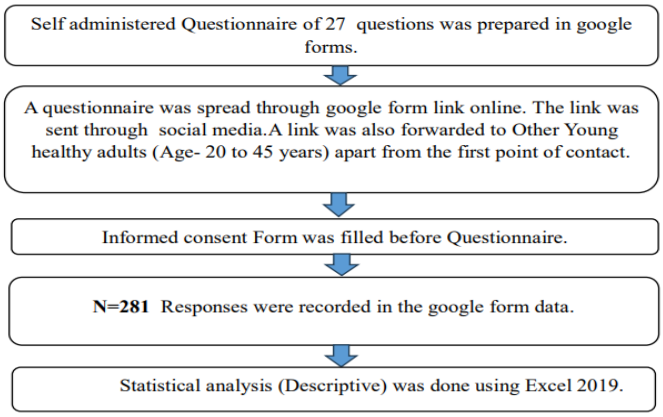
**EXCLUSION CRITERIA:**

- Person who were not able to understand English language.
- Those who had lack of access to device.
- People who didn't willing to participate in study

## OUTCOME MEASURE

**TITLE :** Questionnaire to determine the knowledge of cardiovascular disease and its risk factors among the public in Kuwait (1)

## METHOD




**Flow Chart 1: Method of the study**

## RESULT

In the present Study ,Total 281 Normal individuals were filled the form. Out of which 119 (42.3%) Females and 162 (57.7%) Males were participated in the study.

## DEMOGRAPHIC DATA

Out of 281 individuals, 239(85.1%) participants were between 20 to 30 years. 29(10.3%) participants were between 30 to 40 years.13(4.6%) participants were between 40 to 45 years.155(55.2%) participants passed their university graduation.Other 85(30.2%) participants were post graduates.All other remaining participants were passed their diploma and high school studies. If we are looking at education level of participants, out of 281 participants,138(49.1%) were students.70(24.9%) participants were doing professional job.52 (18.5%) were self employed. 12 (4.3%)women were housewives.Only 9 (3.2%) participants were unemployed.out of total, 188(71.8%) participants had good socioeconomic condition whereas 36 (13.7%) participants had fair socioeconomic condition. Only 31(11.8%) participants had excellent socioeconomic condition.All other participants had poor socioeconomic condition.

Out of 281 participants,209(74.4%) participants were fall under normal BMI Category.where only 1 (0.4%) was under Obese category. Other 48(17.1%) participants were under overweight category. While 23 (8.2%) participants were underweight according to WHO BMI Criteria.

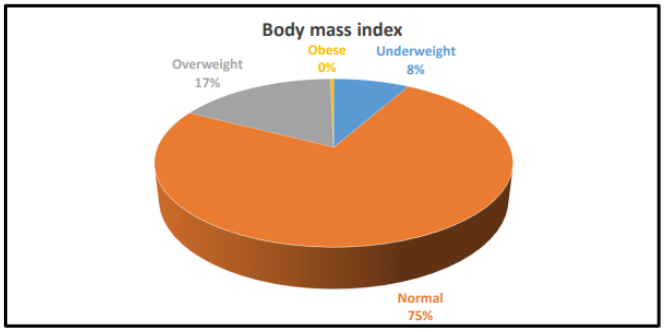



**Chart 1: Number of Participants falls into different BMI Category**

If we are talking about bad habits then 243(86.5%) participants did smoking in past. While 12(4.3%) participants were ex-smoker. 26(9.3%) participants are current smoker. When we focus on fitness level of participants, They were asked about their 30 minute aerobic exercise in form of walking, running, cycling, jogging in a week. Only 64(22.8%) participants were doing exercise 5 time or more in a week. Only 155(55.2%) participants often eat healthy food.11(3.9%) participants describe their life very stressful while 105 (37.4%) participants describe their life totally free from stress and all other suffered from mild stress in their life.43(15.3%) individual had family history of any cardiovascular disease.

## AWARNESS OF CARDIOVASCULAR DISEASE

In the second section of questionnaire, questions about awareness of cardiovascular disease were formed. First, they were asked about their medical status whether they are suffered from any kind of chronic condition or not.Number of Participants suffered from different Comorbidities is shown below(chart 2).

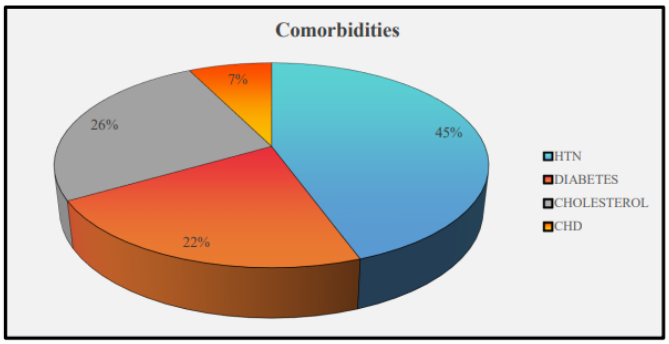



**Chart 2: Number of Participants suffered from different Comorbidities**

Secondly they were asked about their recent blood pressure,Blood cholesterol and blood glucose level.206 participants were checked their Blood pressure recently and 4 noted it high than normal values.Out of 165 participants who got checked their blood cholesterol level recently, 6 noted it high than normal level.Only 3 participants noted high blood glucose level out of 167.

## KNOWLEDGE ABOUT CARDIOVASCULAR DISASE

Third section of Questionnaire includes Questions about Knowledge of cardiovascular disease.Number of participants agreed on the different types of cardiovascular disease is shown in chart 3.Which includes Coronary artery disease, cerebrovascular disease, peripheral arterial disease, Rheumatic heart disease,Congenital heart disease, DVT and PE(deep vein thrombosis and pulmonary embolism).

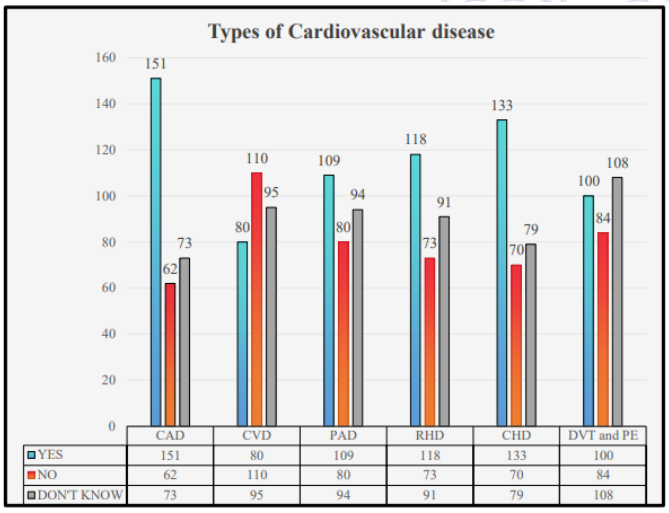



**Chart 3: Knowledge of Cardio vascular disease types**

Participants were asked about the symptoms of Heart attack and stroke. Number of participants identified different symptoms are shown in chart 4 and 5.Symptoms like, pain in neck, jaw and back, Weakness, light headache and faintness,chest pain and discomfort were included as a symptoms of heart attack. While symptoms like Numbness in Different body parts, Confusion, Difficulty in Speaking, Blurred vision, Balance and walking problems and headache without any known cause were included as as stroke symptoms.

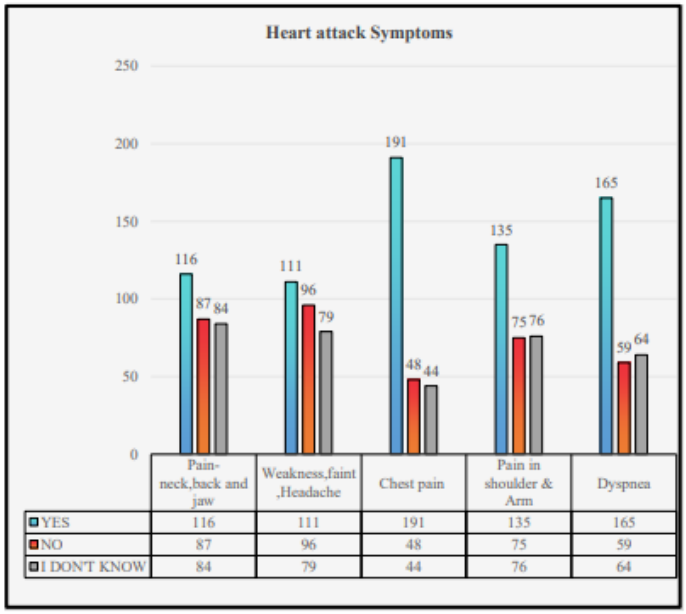



**Chart 4: Knowledge of Heart attack symptoms**

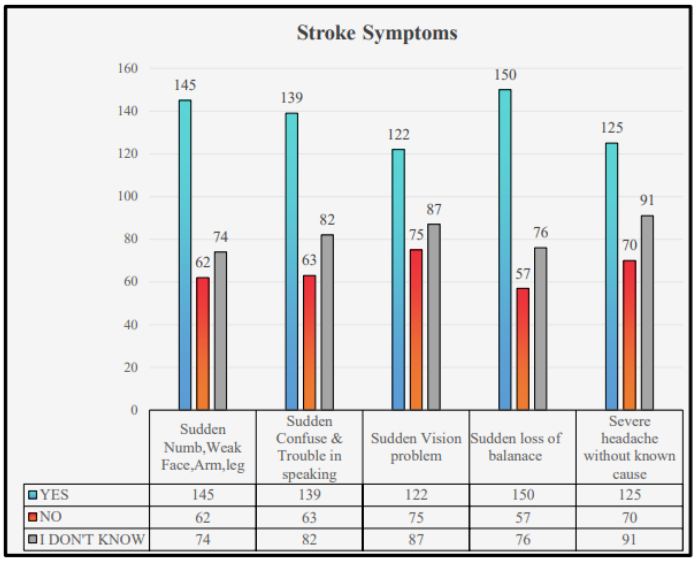



**Chart 5: Knowledge of Stroke symptoms**

Participants were then asked about the possible causes of cardiovascular disease.Participants agreed On smoking were only 178.While for unhealthy diet 184, for Physical inactivity 169, for obesity 157, For stress 180, for positive family history 146, For high LDL 158 and for diabetes 143.All other participants didn't know about the causes of cardiovascular disease.

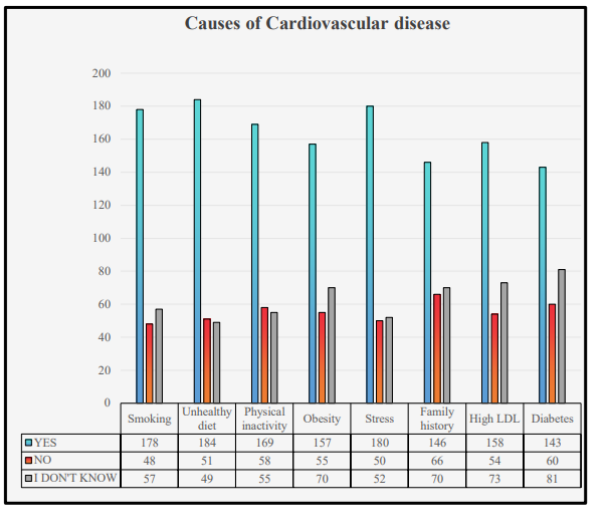



**Chart 6: Knowledge of Cardiovascular disease Causes**

## POSSIBLE ROLES OF HEALTH CARE PROFESSIONALS OTHER THAN MEDICAL DOCTORS IN PREVENTION AND MANAGEMENT OF CARDIOVASCULAR DISEASE

In the last section of questionnaire , Knowledge of participants was checked by asking pharmacist and nurse's role in Prevention startergies and management of cardiovascular disease.Number of Response for Pharmacist and Nurse in each startergies are shown in Chart 7 below.

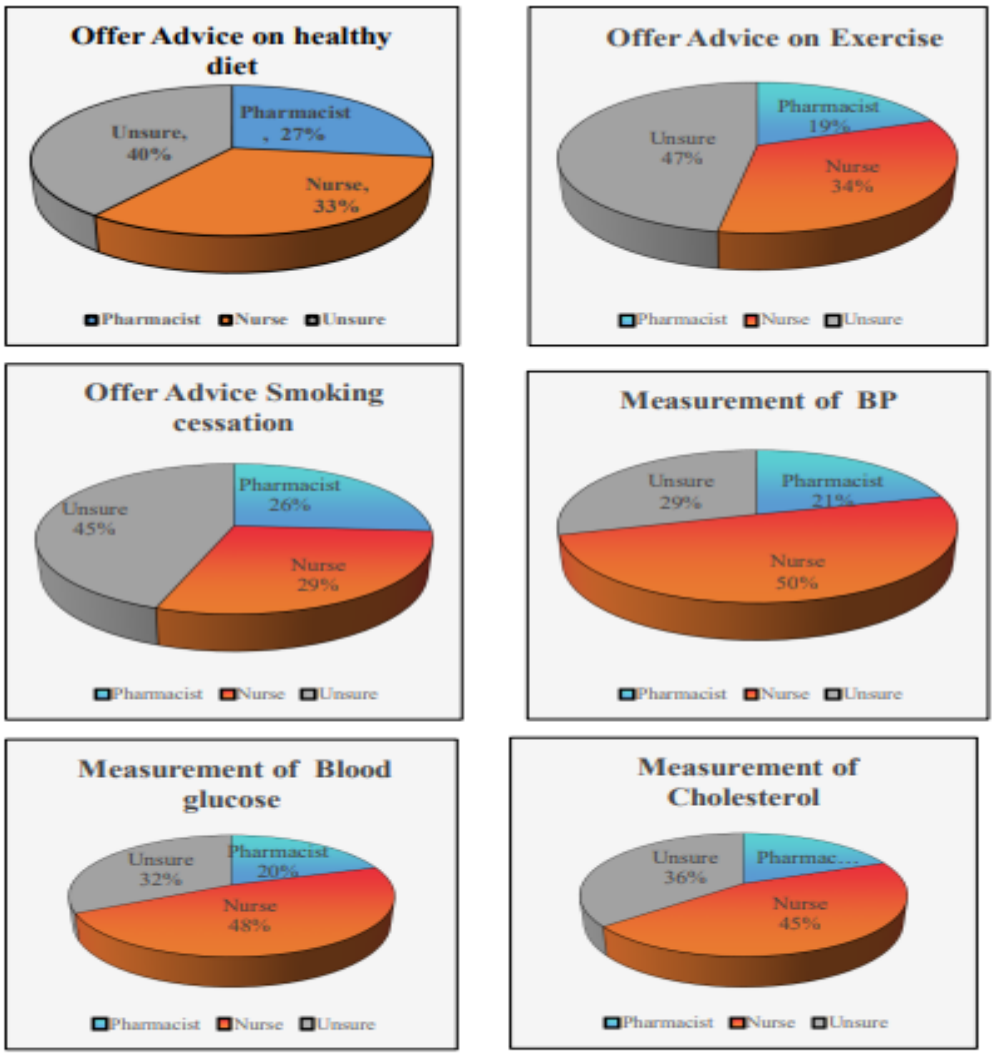



**Chart 7: Knowledge of participants for pharmacist and nurse's role in Prevention startergies and management of cardiovascular disease**

## DISCUSSION

This is the first known study to be conducted in Gujarat, to comprehensively demonstrate the current level of public knowledge about types of CVD,warning symptoms of heart attack or stroke and CVD risk factors.This will help in the assessment of the adequacy of the present community educational programs, and could be utilized in designing future targeted public health promotion campaigns to enhance CVD knowledge.

According to our present study, Participants are aware about their Comorbidities. The commonest comorbidity identified by respondents was Hypertension (4.2%) followed by Diabetes & Cholesterol (2%) and Coronary heart disease (0.7%).But they are not taking medicines daily for the same.This shows their lack of awareness in this area.

Whereas 73.3% checked their recent Blood Pressure, while only half of participants checked their Recent Blood cholesterol level and 60% checked their blood glucose level recently.Less than half of participants (22.8%) were doing exercise 5 time or more in a week.Half of the participants (55.2%) often eat healthy food and only 37.4% participants describe their life totally free from stress.

Our findings are consistent with the study conducted by Emily M. Bucholz Sarah D. de Ferranti, which revealed that ,Despite the high prevalence of cardiovascular risk factors in U.S. young adults, still awareness remains less than ideal. (12). A very worrisome finding in the current study is the respondents' low knowledge in types of cardiovascular disease and its symptoms.Only half of the participants have knowledge about the coronary artery disease(53.7%) ,which is the type of cardiovascular disease.

While only less than half of participants knows that peripheral arterial disease(38.7),Rheumatic heart disease (41.9%),Congenital heart disease(47.3%), Deep vein thrombosis ,Pulmonary embolism (35.5%)are kind of cardiovascular disease. Only less than half of participants were aware about the symptoms of heart attack.Chest pain (68%)and dyspnea(59%) were the most common known symptoms.which is close to that found in Beijing(13) , but higher than that in Pakistan(14) and Nepal(15) .

Failure to know heart attack symptoms may increase the delay in seeking early medical care that can lead to a worse therapeutic outcomes. These findings shows the urgent need to educate population to recognize the multiple symptoms of heart attack, since better knowledge would lead to earlier presentation to medical care, which might result in improvements in patients outcomes. The study participants' knowledge of stroke symptoms was low. The commonest stroke symptoms recognized by respondents were 'sudden loss of balance' (53%), followed by 'numbness or weakness of the face, arm, or leg' (51.6%), 'Sudden confusion and trouble in speaking' (49.4%),'severe headache without known cause' (44%).These figures were higher compared to that reported in Australia(16) , Canada(17) and the Gulf (18) countries but lower than 19 that in the USA(19).

The present findings again emphasize the need for effective stroke education efforts. The commonest risk factors For CVD identified by participants were Unhealthy diet (66%) followed by stress (64%),smoking (63%),physical inactivity (60%), High LDL(56%), obesity(55%), family history (51%) and diabetes (50%). The current results demonstrate that participants have a better knowledge regarding risk factors when compared to previous study conducted by Ali A.

Ammouri, Ayman Tailakh in oman and they concluded that community in Oman have Low knowledge levels of CHD risk factors(20) . The present study revealed that most of respondents only identified the role of community pharmacists to help patients manage their medications, with a minimal role in providing advice on healthy lifestyle, or the measurement of blood pressure, blood cholesterol and glucose levels. These findings are similar to those reported by previous studies from North Ireland and Jordan (21) .

One other literature by Thomas E. Vanheckea , Wendy M. Miller et al, concluded that adolescents in Michigan lack knowledge regarding the risk of cardiovascular disease and do not perceive themselves at risk for cardiovascular disease (22) . Eman elsheikh, Abdullah Alkhudair et al, also assessed the overall knowledge of myocardial infarction risk factors and complications Among the Adult Population in the Eastern Region of Saudi Arabia , which revealed an inadequate mean score. While many participants had good educational 20 backgrounds and answered some of the risk factor questions correctly, some still failed to identify significant risk factors such as hypertension, diabetes, and dyslipidemia.(16).

## CONCLUSION

The study participants showed deficiencies in CVD knowledge and awareness, which cause insufficient preventative behaviour and sub-optimal patient outcomes. So In university courses, units on healthy

lifestyles and high-risk behaviors should also be offered to students in the form of noncore units

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