



ASSESSMENT OF KNOWLEDGE REGARDING RISK FACTORS OF CARDIOVASCULAR DISEASE AMONG UNDERGRADUATE MEDICAL STUDENTS

Community Medicine

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ABSTRACT

Introduction: Cardiovascular disease is a significant health concern, with a huge prevalence in many populations. The most common risk factors like smoking, alcohol consumption, eating fatty foods, and high blood sugar are known to many people. Despite the emphasis on awareness of risk factors of cardiovascular disease still, many of the population don't have proper insight. Healthcare providers play a key role in promoting heart health and preventing risk factors. The study has been done to estimate the current knowledge of cardiovascular disease among undergraduate medical students. **Objective:** To assess the knowledge regarding risk factors of cardiovascular disease among UG medical students. **Methods:** A cross-sectional study was conducted among undergraduate medical students, at SMIMS Kanyakumari, Tamil Nadu. Data was collected among 100 students from the first to the final year using a semi-structured questionnaire. Knowledge regarding cardiovascular risk factors was assessed using the Heart Disease Fact Questionnaire (HDFQ). **Results:** Out of 100 study participants, 42% were males and 58 % were females. The mean age of participants was 21 ± 2.3 yrs. Among the study participants, knowledge regarding the risk factors was good in 79 students, 12 had moderate and 9 had poor knowledge. The mean overall knowledge score among participants was 79.9 ± 17.6 , with a mean score of 77.3 ± 20.06 in males and 81.79 ± 15.61 in females respectively. **Conclusion:** Even though most participants are aware about CVD Risk factors, some are poor in knowledge about the epidemiology, and prevention. Sound knowledge of CVD is very essential for the students as they are the healthcare providers of the future. Ongoing efforts to improve education, demonstrate adequate knowledge of traditional risk factors, encourage practical application, and address emerging risk factors are essential in preparing them to be effective healthcare professionals.

KEYWORDS

Cardiovascular diseases, Risk factors, Knowledge, HDFQ

INTRODUCTION:

Cardiovascular disease (CVD) has now become the leading cause of morbidity and mortality all over the world.(1)Coronary Artery Disease (CAD) 's global prevalence is approximately 315 million cases as of 2022.(2) In India, the prevalence of cardiovascular disease cases in 2024 is considered to be significantly high, with reports indicating a rising trend. (3)The World Health Organization has estimated that 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. Out of premature deaths due to noncommunicable diseases, 38% were caused by CVDs.(4) From 1990 to 2020 the annual number of deaths of CVD in India is projected to rise from 2.26 million to 4.77 million.(5) Despite the prevalence of risk factors of the disease, CVD has emerged in poorer states and rural areas of India.(6) Behavioural risk factors like an atherogenic diet and a sedentary lifestyle cause insulin resistance which leads to metabolic syndrome, diabetes mellitus, obesity, and eventually cardiovascular diseases. (7)This acceleration in risk factors is alarming and is attributed to urbanization, lack of knowledge, and effective preventive strategies. Adding to these coexisting illnesses like hypertension, diabetes, and dyslipidemia further accelerate CVD progression.(8)(9)

The atherosclerotic vascular changes may initiate at a younger age, and the influence of risk factors & coexisting diseases leads to the progression of significant disease. (10) Both modifiable & non-modifiable risk factors like age, ethnicity, family history, high BP, being overweight, physical inactivity, unhealthy diet, smoking, alcohol, and raised blood glucose & blood lipids contribute to the development of cardiovascular diseases. (11)(12)(13)Alteration of risk factors can help minimize clinical events and deaths in people with recognized CVD as well as in those who are at high risk because of one or more risk factors. (14)Undergraduate medical students form a very important subset of young adults in any society since they are the forming elements of the future healthcare infrastructure. The stress associated with intense training in medical school and lack of physical exercise puts the students at higher risk of cardiovascular diseases. (15)(16) Knowledge regarding the cardiovascular risk factors among medical students of the southern states of India is insufficiently addressed in the literature. This study has been done to identify the knowledge of assessment of risk factors of CVD among medical students. Improving the knowledge of cardiovascular risk factors among medical students helps them to adopt healthy behaviours

themselves, educate their peers, participate in community outreach, and contribute to research.

METHODOLOGY

A Cross-sectional study was conducted among undergraduate medical students of Sree Mookambika Institute of Medical Sciences, Kanyakumari, Tamil Nadu from March to May 2024. Data was collected from students of the academic year from the first year to the final year. From the previous study, the proportion of good knowledge was 31.82 % (17) using with 10% absolute error and 95% CI, the required sample size was 83. A total of 100 students were recruited using the simple random sampling method. A semi-structured questionnaire was used for data collection which includes sociodemographic details of students & cardiovascular risk factor Knowledge assessment. The Heart Disease Fact Questionnaire (HDFQ) was used, which consists of 25 items and assesses how much knowledge an individual has about the risks of developing heart disease.(18) Each question given as a true or false option has three options, for each correct response 1 is awarded & responses are multiplied by 4. Total score ranges from 0 – 100 of which for assessment total score of > 70 is taken as good, 51 – 70 as moderate, and < 50 as poor. The higher the final score, the higher the knowledge level.(17) The collected data were entered in Microsoft Excel and analyzed using SPSS version 20. The quantitative variables expressed in terms of mean, standard deviation, and categorical variables were in percentage. To look for association Chi-square test was used.

RESULTS

The study was conducted among 100 undergraduate medical students of which 58 were female and 42 males. The mean age of participants was 21 ± 2.3 years. Major risk factors for heart disease as identified by students are smoking (90%), high blood pressure (90%), high cholesterol (89%), obesity (89%), diabetes (88%), lack of physical activity (84%), family history (72 %) and age (84%). (Table.1)

Knowledge Regarding The Role Of Risk Factors For Cardiovascular Disease

Most of the participants know that smoking is a risk factor for CVD but 73% of students were aware that smoking history when changed can lead to a significant decline in CVD. The majority of them know that blood pressure is a risk factor even though 81 % know keeping BP

under control can reduce the risk of CVD. Nearly 87 % have responded that a person doesn't always know when they have heart disease. Of the participants who responded to high cholesterol as a risk factor, of which 78% knew that fatty foods play a role in CVD. Also, 81% know the role of HDL as a good cholesterol and 84% of them know LDL as a bad cholesterol.

Another major risk factor is obesity which can lead to the risk of getting heart disease, 84% students know about the importance of exercise. About 83% of them are aware that exercises like walking and gardening will lower the risk of developing heart disease. Around 78% of them responded that exercising in a gym or an exercise class will reduce the risk of developing heart disease. Diabetes is a known major risk factor for CVD 77% of them know high blood sugar puts strain on the heart. Also, 82% are aware that uncontrolled blood sugar will result in the elevation of cholesterol levels which leads to an increase in the risk of CVD. Among these students, eighty of them responded that keeping cholesterol levels under control will help to reduce the risk. The chance of getting high cholesterol among diabetes was identified by 72% students & 55% students responded correctly to the relation between diabetes & HDL cholesterol levels. In our study the participants know that in a diabetic person, the risk of getting CVD can be reduced by Blood sugar control (80%), BP control (76%), and weight under control (79%).(Table.1) Around 66% of them know that men with diabetes have a higher risk of developing heart disease than women who have diabetes.

Table 1. Assessment Of Knowledge About The Risks Of Heart Disease Using HDFQ Among The Study Participants (N=100)

QUESTIONS	Responses	
	True (n)	False (n)
A person always know when they have heart disease	13	87
If you have a family history of heart disease, you are at risk for developing heart disease	72	28
The older a person is, the greater their risk of having heart disease	84	16
Smoking is a risk factor for heart disease	90	10
A person who stops smoking will lower their risk of developing heart disease	73	27
High blood pressure is a risk factor for heart disease	90	10
Keeping blood pressure under control will reduce a person's risk for developing heart disease	81	19
High cholesterol is a risk factor for developing heart disease	89	11
Eating fatty foods doesn't affect blood cholesterol level	22	78
If your HDL is high you are at risk for heart disease	19	81
If your LDL is high you are at risk for heart disease	84	16
Being overweight increases a person's risk for heart disease	89	11
Regular physical activity will lower a person's chance of getting heart disease	84	16
Only exercising in a gym or in a exercise class will reduce risk of developing heart disease	22	78
Walking and gardening will lower risk of developing heart disease	83	17
Diabetes is a risk factor for developing heart disease	88	12
High blood sugar puts a strain on the heart	77	23
If your blood sugar is high over several months, it can cause cholesterol level to go high increasing risk factor for developing heart disease	82	18
A person who has diabetes can reduce risk of developing heart disease if they keep their blood sugar in control	80	20
People with diabetes rarely have high cholesterol	28	72
If a person has diabetes, keeping their cholesterol under control will reduce risk of developing heart disease	80	20
People with diabetes tend to have low HDL level	55	45
People with diabetes can reduce risk of developing heart disease if they keep BP on control	76	24
People with diabetes can reduce risk of developing heart disease if they keep weight on control	79	21
Men with diabetes have higher risk of developing heart disease than with woman who has diabetes	34	66

Knowledge of cardiovascular risk factors among study participants

The mean total score of knowledge among participants was 79.9±17.6. The mean total score among females 81.79±15.61 was & in males was 77.3±20.06 (Fig1.). Knowledge regarding cardiovascular risk factors was good in 79 students. Among the students 12 had moderate and 9 had poor knowledge regarding the risk factors. There was no statistical association between gender with knowledge of cardiovascular risk factors among participants. (Table.2)

Table 2. Gender Difference In Knowledge Of CVD Risk Factors Among Participants

Gender	Total Knowledge score		
	Good (> 70)	Moderate (51–70)	Poor (<50)
Female	46	9	3
Male	33	3	6
Total	79	12	9

z2: 3.67, p-value: 0.15

CONCLUSION

In our study, 79% of the participants had good knowledge regarding the CVD risk factors. Still, some are lack of the epidemiology & prevention of CVDs. The lack of sufficient knowledge among medical students regarding smoking cessation, blood pressure control, and its role in reducing cardiovascular risk is a significant challenge. As future healthcare providers, medical students are expected to have an in-depth understanding of these risk factors to prevent, diagnose, and manage CVD effectively. Early intervention, regular health checkups, and seeking medical advice when needed are key to maintaining cardiovascular health and preventing the onset of disease.

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