



Original Research Article

KNOWLEDGE, PERCEPTION AND RISK OF CARDIOVASCULAR DISEASE AMONG PARAMEDICAL STUDENTS – A CROSS-SECTIONAL STUDY

Article History:

Name of Author:

M.K.Arif¹, Dr.M.Uma Maheswari², Ms. Padmapushani M³

Affiliation: ¹Lecturer, Department of Microbiology, Faculty of Allied Health Sciences, Dr. M.G.R. Educational and Research Institute, Chennai, India

²Assistant Professor, Cardiac Care Technology, School of allied health sciences, VMRF-DU, Paiyanoor, Chennai, India. School of allied health sciences, VMRF-DU, Chennai. Paiyanoor

³Assistant Professor, Cardiac Care Technology, School of allied health sciences, VMRF-DU, Paiyanoor, Chennai, India

Corresponding Author:

ARIF M K

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Abstract: Background: Cardiovascular diseases (CVDs) are the leading cause of mortality worldwide. Sedentary lifestyle, unhealthy diet, obesity, smoking, stress, diabetes, and hypertension are major contributors to the rising burden of CVD, even among young adults. **Aim & Objectives:** This study aimed to assess the knowledge, perception, and risk awareness of cardiovascular diseases among paramedical students. **Methodology:** A cross-sectional study was conducted among 1050 paramedical students at ACS Medical College and Hospital, Chennai. Data were collected using a structured questionnaire consisting of 30 questions covering awareness of CVD, risk factors, lifestyle practices, and perception. Data were analysed statistically to assess associations between knowledge levels and demographic variables. **Results:** Among the participants, 67.9% were females and 32.1% were males. Good awareness of cardiovascular risk factors was observed in 52.2% of students, while 47.8% showed poor awareness. Good knowledge regarding CVD was present in 48.4% of students, whereas 51.6% had moderate to poor knowledge. Students from cardiac-related departments demonstrated better awareness compared to other paramedical disciplines. **Conclusion:** Although basic awareness of cardiovascular diseases exists among paramedical students, significant gaps in detailed knowledge and risk perception were identified. Incorporating focused cardiovascular health education into paramedical curricula is essential for improving future healthcare delivery and disease prevention.

Keywords: Cardiovascular disease, Life style practices, Knowledge, Risk, Perception, Health care

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of mortality worldwide and pose a major public health challenge. Rapid urbanization and lifestyle changes have resulted in increased prevalence of risk factors such as physical inactivity, unhealthy dietary habits, obesity, smoking, alcohol consumption, stress, diabetes mellitus, and hypertension (1). These risk factors are now increasingly observed among young adults, contributing to early onset of cardiovascular

diseases.

Prevention of cardiovascular disease depends largely on awareness, early identification of risk factors, and adoption of healthy lifestyle practices. Paramedical students, as future healthcare professionals, play a vital role in patient care, health education, and disease prevention(2). Their level of knowledge and perception regarding cardiovascular diseases directly influences their ability to educate patients and promote preventive healthcare. Hence, assessing cardiovascular disease awareness among paramedical

students is essential for improving future healthcare outcomes.

The Importance of Cardiovascular Health Awareness:

Awareness about cardiovascular health is critical for effective prevention and management. Studies show that individuals who are aware of the risk factors associated with CVDs are more likely to engage in healthy behaviors such as maintaining a balanced diet, participating in regular physical activity, and avoiding tobacco use.

Conversely, a lack of knowledge leads to delayed diagnoses, poor disease management, and increased mortality rates(2). Early identification of modifiable risk factors plays a central role in the prevention of cardiovascular diseases. Health education campaigns and preventive programs are effective only when the target populations have a basic understanding of the disease process and the actions needed to mitigate risks. Therefore, educating the younger population, especially those training to become healthcare providers, is fundamental in reducing the long-term burden of CVDs.

Diseases Risk Factors Associated with Cardiovascular:

Several factors contribute to the development of cardiovascular diseases. These can be categorized into modifiable and non-modifiable risk factors:

Modifiable Risk Factors:

These include behaviors and conditions that individuals can control, such as unhealthy diet, physical inactivity, smoking, excessive alcohol consumption, obesity, hypertension, hyperlipidemia (high cholesterol), and diabetes(3).

Non-Modifiable Risk Factors:

These include age, gender, genetic predisposition, and family history of cardiovascular Diseases. Understanding these risk factors is crucial because nearly 80% of premature deaths from heart disease and stroke are preventable through lifestyle changes and early interventions.

Aim

The aim is to understand the knowledge, perception and risks about cardiovascular diseases among paramedical students. The objective of the study is to assess the knowledge of paramedical students including risk factors for cardiovascular disease and to examine the attitudes of paramedical student toward cardiovascular diseases. To identify the risks and challenges faced by paramedical students in promoting cardiovascular diseases.

MATERIAL AND METHODS

Students from various paramedical disciplines were included in the study after obtaining informed consent. A structured and pre-validated questionnaire consisting of 30 questions was used to collect data related to demographic details, knowledge of cardiovascular diseases, awareness of risk factors, lifestyle habits, and perception towards cardiovascular health.

The responses were systematically recorded, compiled, and analysed using appropriate statistical methods. The level of knowledge and awareness was categorized as good, moderate, or poor. Associations between knowledge levels and demographic variables such as department and year of study were also analysed.

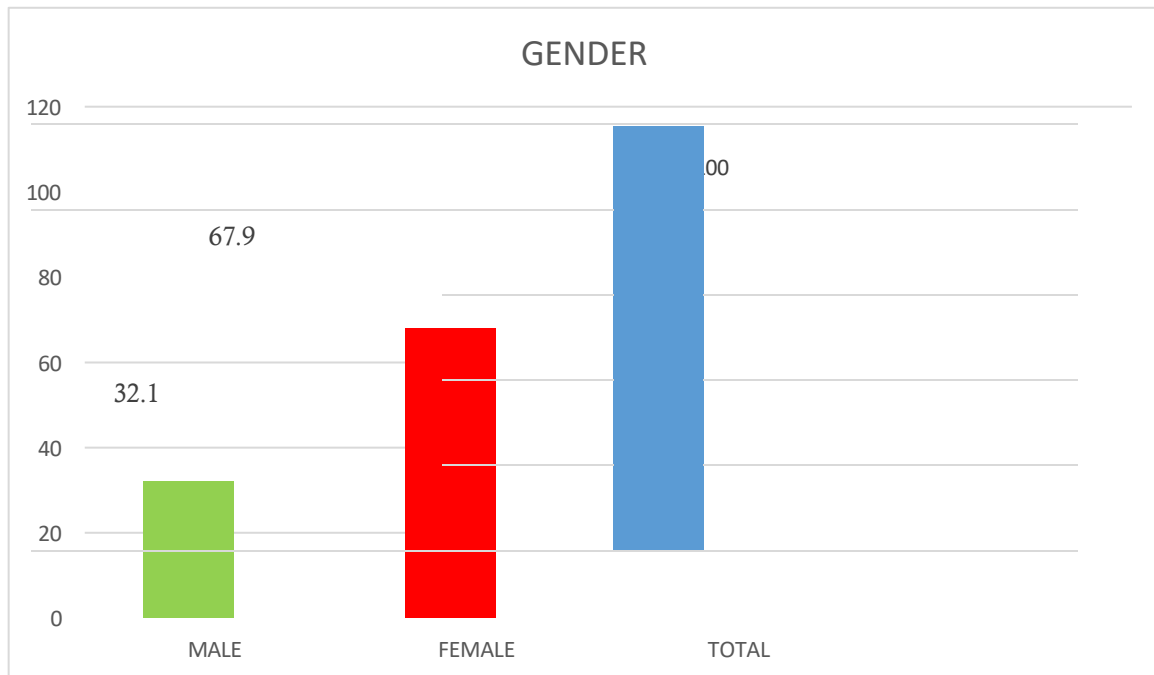
RESULTS

Among the 1050 participants, 67.9% were females and 32.1% were males. Good awareness of cardiovascular disease risk factors was observed in 52.2% of students, while 47.8% demonstrated poor awareness. Regarding knowledge of cardiovascular diseases, 48.4% of students showed good knowledge, whereas 51.6% had moderate to poor knowledge.

Students enrolled in cardiac-related courses exhibited significantly better knowledge and awareness compared to students from other paramedical departments. A significant association was observed between knowledge levels and factors such as department of study and academic year, indicating improved awareness with advancing education.

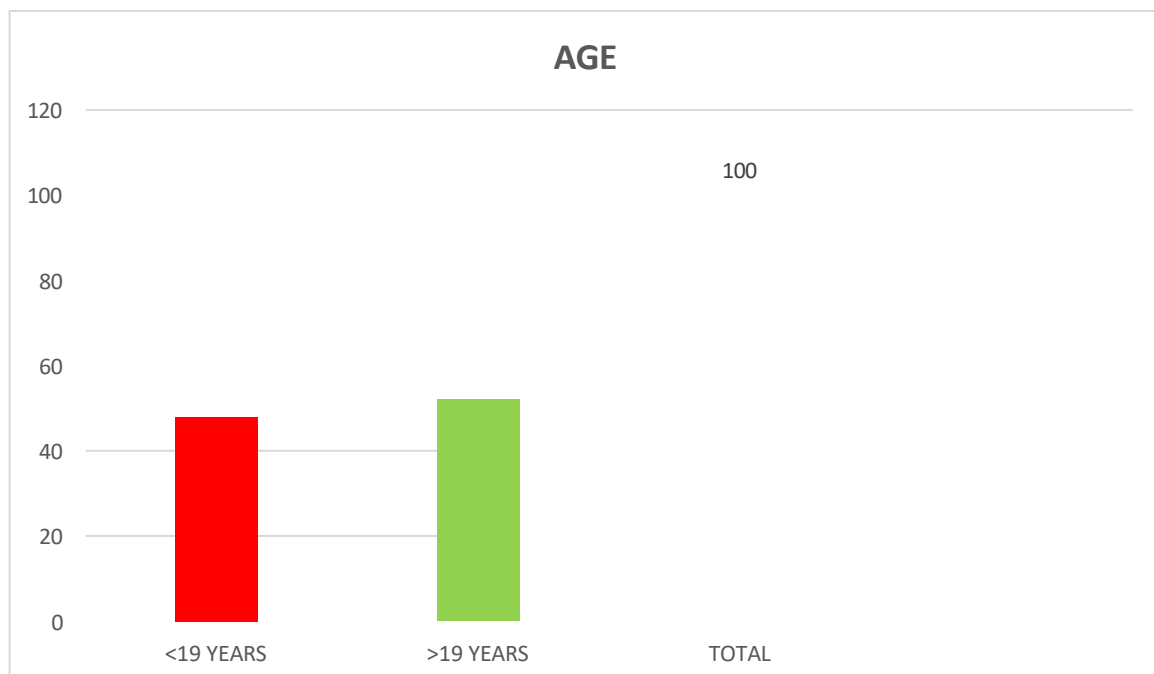
GRAPH 1: SHOWING THE TOTAL NUMBER OF RESPONSES BASED ON GENDER.

GENDER	PERCENTAGE (%)	FREQUENCY
MALE	32.1	337
FEMALE	67.9	713
TOTAL	100	1050

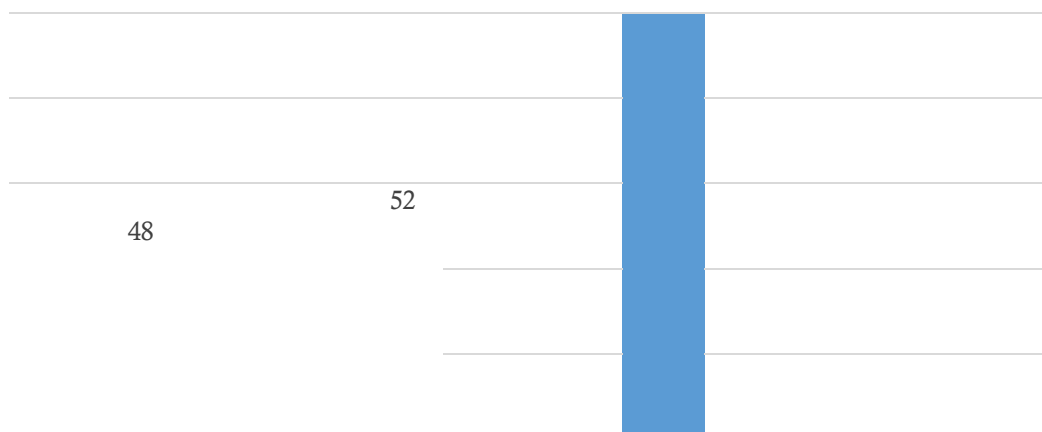


This Graph shows that greater number of responses were done by females.

GRAPH 2: SHOWING THE TOTAL NUMBER OF RESPONSES BASED ON THEIR AGE.



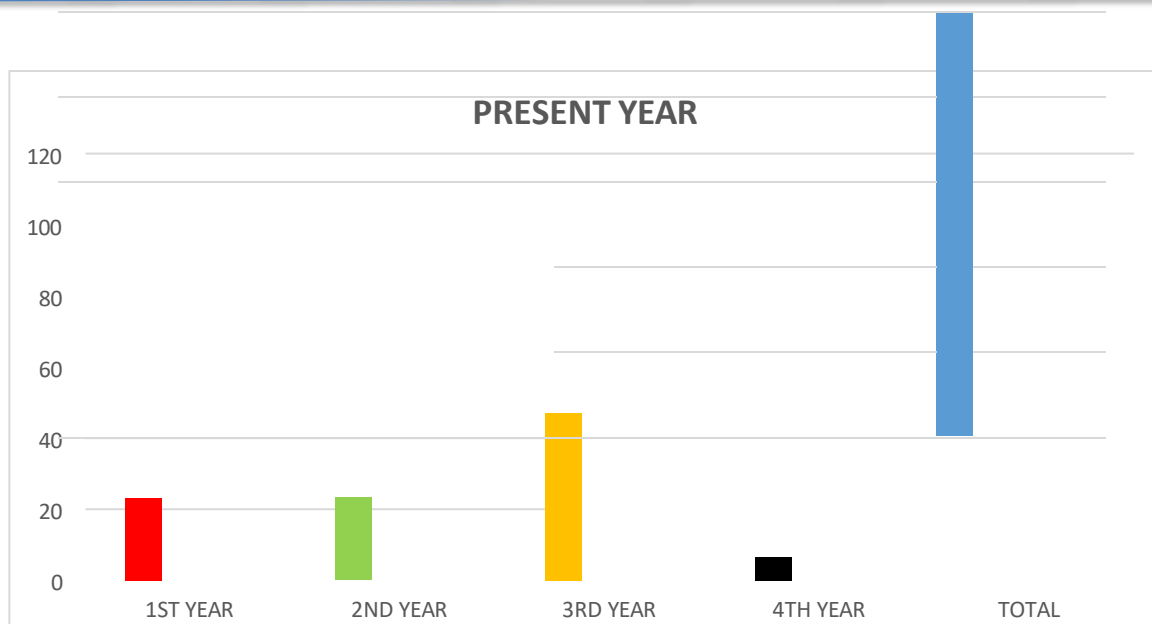
AGE	PERCENTAGE(%)	FREQUENCY
<19 YEARS	48	504
>19 YEARS	52	546
TOTAL	100	1050



The chart shows that greater number of responses were done by individuals above 19 year

GRAPH 3: SHOWING THE RESPONSE OF INDIVIDUALS IN WHICH YEAR THEY ARE STUDYING

PRESENT YEAR	PERCENTAGE(%)	FREQUENCY
1 ST YEAR	23.1	243
2 ND YEAR	23.3	245
3 RD YEAR	47.0	493
4 TH YEAR	6.6	69
TOTAL	100	1050



The chart showing the greater number of responses got from third year students

GRAPH 4: SHOWING THE RESPONSE OF INDIVIDUAL IN WHICH DEPARTMENT OF AHS THEY ARE STUDYING

S.NO	DEPARTMENT	PERCENTAGE	FREQUENCY
1	CARDIAC CARE TECHNOLOGY	32.6	342
2	OPTOMETRY	9.4	99
3	PHYSICIAN ASSISTANT	16.4	172
4	RADIOLOGY AND IMAGING SCIENCE TECHNOLOGY	3.0	31
5	RENAL DIALYSIS TECHNOLOGY	3.7	39
6	OPERATION THEATER AND ANESTETIC TECHNOLOGY	23.0	242
7	CARDIAC PERFUSION TECHNOLOGY	8.8	92
8	MEDICAL LABORATORY TECHNOLOGY	3.1	33
9	TOTAL	100	1050



The chart showing the greater number of responses got from B.Sc. cardiac care technology students.

DISCUSSION

Numerous research have been done on paramedical students regarding the knowledge and risks about cardiovascular disease(4), but in this study, we acquired the Knowledge of 1050 paramedical student's about cardiovascular disease .Among 1050 paramedical students, there were 337 males and 713 females .As per the study's findings, among the respondents 48.4% (508) have good knowledge, and 51.6% (542) have Moderate to Poor knowledge about cardiovascular diseases .In total 1050 samples 342 were Bsc CARDIAC CARE TECHNOLOGY students and 708 were other departments (BSc OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY, PHYSICIAN ASSISTANT, CARDIAC PERFUSION TECHNOLOGY, MEDICAL LAB TECHNOLGY, RADIOLOGY, and OPTOMETRY).In BSc CARDIAC CARE TECHNOLOGY 69.9% (205) have good knowledge, 40.1% (137) have Moderate knowledge about cardiovascular disease. Whereas 62.3% (213) have good Risks awareness, 37.7% (129) have poor Risks awareness about cardiovascular disease(5).This study demonstrates that while paramedical students have a basic awareness of cardiovascular disease and its risk factors, there is a clear need for more focused education about the knowledge and risks of cardiovascular diseases

The findings of the present study indicate that paramedical students possess basic to moderate awareness of cardiovascular diseases; however, important gaps remain in detailed knowledge and perception of cardiovascular risk factors(5). These results are consistent with previous studies conducted among healthcare students, which reported insufficient understanding of lifestyle-related risk factors and preventive strategies.

Improved awareness among students from cardiac-related disciplines suggests that focused curriculum exposure positively influences knowledge and perception. Incorporating comprehensive cardiovascular health education into paramedical training programs can help improve preventive practices, encourage healthy lifestyle choices, and reduce future cardiovascular disease burden.

CONCLUSION

The study concludes that although paramedical students demonstrate moderate awareness of cardiovascular diseases, there is a clear need to strengthen their knowledge and perception regarding cardiovascular risk factors. Integrating structured cardiovascular health education, lifestyle modification counselling, and regular awareness programs into the paramedical curriculum can enhance preventive healthcare practices and

contribute to improved cardiovascular health outcomes.

Hereby I have attached the questions by different sections

SECTION A

NAME:

AGE:

GENDER: MALE/FEMALE

PRESENT DEGREE: UG/ PG

PRESENT YEAR: 1ST YEAR, 2ND YEAR, 3RD YEAR, 4TH YEAR

STATE:

DISTRICT:

SECTION B

SECTION B: RISK AND AWARENESS

1. Have you learned about CARDIOVASCULAR DISEASE (CVD) in your coursework?

No Yes May be

2. Do you believe smoking increases the risk of CVD? Yes

No May be

3. Is high cholesterol a major contributor to CVD? Yes

No May be

4. Do you consider obesity a preventable risk factors of CVD? Yes

No May be

5. Do you think diabetes can increase the risk of developing CVD? Yes

No May be

6. Is a sedentary lifestyle associated with a higher risk of developing CVD? True

False

7. Do you believe stress plays a role in the development of CVD? Yes

No May be

8. Do you think CVD can be prevented through lifestyle? Yes

No May be

9. Do you think smoking has no significant impact on the development of CVD?

Yes No May be

10. Diabetes is a known risk factor for heart disease True

False

11. Drinking a moderate amount of alcohol is considered as safe for our heart. What can happen if you drink more?

Too much of alcohol can raise blood pressure Too much of alcohol can raise triglyceride levels Too much alcohol lowers LDL (bad) cholesterol A and b

12. Your risk for heart disease rises if your body mass index (BMI) is more than 24.9 why?

It can increase blood pressure

It can increase the risk for diabetes

It can increase triglycerides and lower HDL cholesterol levels All of the above

13. An average of 100,000 Americans die from heart disease every year. Yes

No

14. Your diet don't affect your risk for heart disease True

False

15. No test can diagnose coronary artery disease.

True

False

SECTION C: KNOWLEDGE AND PERCEPTION

16. Which of the following condition is most commonly results in CVD ? Atherosclerosis

Diabetes Mellitus Myocardial Infarction Renal Failure

17. Do you think hypertension is a risk factor for CAD ? Yes

No May be

18. What does the normal BP means? 120/80mmhg

110/80mmhg 140/90mmhg 90/60mmhg

19. Your BP is 120/80. Which indicates systole and diastole? 120 diastole, 80 systole

120 systole, 80 diastole

20. If your HDL cholesterol is high, you are at risk for heart disease. True

False

21. People with diabetes rarely have high cholesterol True

False

22. Men with diabetes rarely have risk of heart disease than women with diabetes

True False

23. A person who have diabetes can reduce their risk of developing heart disease if they keep their weight under control

True False

24. Only exercising at gym or in an exercise class will lower a person's chance of developing heart disease

True False

25. If you have a family history of heart disease, you are at risk of heart disease Yes

No May be

26. Which of these is a classic symptom of a heart attack? crushing pain in the chest accompanied by sweating

Pain that spread from the chest to the shoulders, neck, jaw, arm Indigestion or heartburn, nausea and vomiting

Trouble breathing All of the above

27. Three risk factors for heart disease can't be controlled. which of these are they?

Diet, drug use, smoking

Medicine use, vaccines, alcoholism Age, sex, heredity

None of these

28. What is considered stage 1 high blood pressure? 90/70 mmHg

100/80 mmHg 130/80 mmHg 140/90 mmHg C and d

29. What can happen if blood flow in an artery is blocked or greatly restricted? Heart palpitation

Stroke Heart attack B and c

30. Emotions don't affect your risk for heart disease. True

False

DECLARATION:

Declarations:

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Conflict of Interest

The authors declare that there is no conflict of interest.

Authors' Contribution

All authors listed in this study have made a substantial direct and intellectual contribution to the work and approved it for publication

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None.

Ethics Statement

Ethical approval was procured by the institutional ethics committee of ACS Medical College and Hospital. No personal identifiers, and patient confidentiality were maintained throughout the study.

Data Availability

All dataset generated during the study are included in the manuscript.

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