Prevalence of risk factors of ischemic heart disease among students of J N Medical College in Belgaum, Karnataka, India

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ABSTRACT

Ischemic heart disease (IHD) is the important cause of death in economically developed countries and is assuming epidemic forms in developing countries. Research related to risk factors for IHD, especially among medical students is essential, considering their role as future physicians and role models for the general population. Objectives: To know the prevalence of risk factors of Ischemic Heart Disease among medical students. To know the level of awareness of these risk factors amongst the students. Methods: A cross-sectional study was conducted among the undergraduate and postgraduate students of J N medical college in Belgaum, Karnataka. After clearing necessary ethical review, written informed consent was obtained from all the participants. Pre-designed, pre-tested, structured & self-administered questionnaire was used to collect information on identification data and risk factors in relation to Ischemic Heart Disease, and awareness. Body Mass Index (BMI), Waist-Hip Ratio (WHR), and Blood Pressure (BP) were ascertained. Results: Out of 691 students who participated in the study, 118 (17.1%) were smokers and alcohol consumption was present in 166 (24%) students. 200 (28.9%) had sedentary lifestyle and only 105 (15.2%) involved in physical activity regularly. 31 (4.5%) had family history of IHD. The minimum recommendation of taking at least five servings per day of fruits and vegetables was fulfilled only by 179 (25.9%) of students. 77 (11.1%) were overweight & 15 (2.2%) were obese. 94 (13.6%) were pre-hypertensive and 32 (4.63%) had unfavorable waist-hip ratio. 527 (76.3%) were aware of the risk factors. Conclusion & Recommendation: Risk factors of IHD are prevalent among the medical students at their very young age and may progress further with time. Strategies and interventions must be developed targeting these risk factors to promote healthy behaviors among the future doctors.

Keywords: Ischemic Heart Disease; Risk Factors; Medical College; Students

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Introduction

Ischemic Heart Disease (IHD) is the most important cause of death in economically developed countries and its burden is rapidly increasing in developing countries. It is expected to be the single most important cause of death in India by 2015.[1] IHD contributes to 12.2% of total deaths globally. About 62.6 million DALYs are lost every year due to IHD and 4.9% (21.6 million) DALYs lost in South East Asian Region itself. It is anticipated to be one of the four major causes of death in 2030.[2]

Lifestyle related behavioral risk factors are mainly implicated for this increased burden, and research related to these risk factors among medical students is very necessary, considering their role as future doctors. Thus, this study was carried out with the following objectives

Objectives

1. To know the prevalence of risk factors of Ischemic Heart Disease among medical students.
2. To know the level of awareness of these risk factors amongst the students.

Materials And Methods

Study design & period: Cross-sectional study for 10 months (February to November, 2011) Study location: Jawaharlal Nehru Medical College, Belgaum, Karnataka.

Participants: All medical undergraduate and postgraduate students of the institute.

Sample size: Universal sample of 1265 students.

Ethics: After clearing necessary ethical review, written informed consent was obtained from all the participants. Identity was concealed by providing each participant with a unique 8-digit alphanumeric code. Confidentiality was assured and maintained.

Variables: Demographic data included age, gender, marital status, religion, and socio-economic status. Variables on risk factors included information on smoking habit, alcohol consumption, exposure to second hand smoke, family history of IHD, physical activity, type of diet, and frequency of consumption of fruits and vegetables. Anthropometric measurements included height and weight, for estimation of Body Mass Index (BMI), and waist and hip circumference, for calculating Waist-Hip Ratio (WHR). Blood pressure was recorded for all the students.

Data Collection: Pre-designed, pre-tested & self-administered questionnaire was used to collect information on identification data and risk factors in relation to Ischemic Heart Disease, and awareness. Height and weight were measured and rounded off to the nearest 1 cm and 0.5 Kg respectively. Waist and hip circumferences were measured to the nearest 0.5 cm. Blood pressure was recorded to the nearest 2 mmHg.

Data Analysis: Data was entered and analyzed using SPSS Version-20 and Microsoft Excel, 2010 and expressed as percentages. Chi-square test was applied to evaluate the differences between the various groups.

Results

Study population

A total of 691 students consented to participate in the study. The students represented all the phases of undergraduate and postgraduate studies.

Age groups

The age of the students ranged from 17-33 years. The undergraduates were between 17-25 years and postgraduates were between 24-33 years.

Gender

Almost equal representation from both the genders was achieved. Males comprised a slightly higher number (53.84%) than females (46.16%).

Socio-Economic Class

All the students who participated in this study belonged to social class I according to modified B. G. Prasad scale.

Religion

Most of the students (83.2%) were following Hindu religion. Muslims, Christians and other religions (Sikh, Buddhist, Jain etc.) comprised a small number i.e. 6.8%, 5.6%, 4.4% respectively.

Type of family

More than three-fourth students (75.7%) belonged to nuclear families. 23.2% were from joint families and a negligible number from the other types of families (1% extended and 0.1% broken type).

Marital Status

87.4% of the students were never married. 12.6% students accounted for the married group. None was found to be divorced or separated or widow or widower.

Smoking and Alcohol consumption:

Smoking habit was present in 118 (17.1%) students and alcohol intake was present in 166 (24%) students. The proportions increased with the year of study.

Lifestyle and Physical activity:

200 (28.9%) had sedentary lifestyle i.e. activities involving sitting for most of the day, and only 105 (15.2%) performed physical activity of >30 minutes/day for at least 5 days a week.

Family history:

Only 31 (4.5%) students had a positive family history of IHD.

Diet patterns:

Majority of the students [494(71.5%)] were having mixed type of diet. The minimum recommendation of taking at least five servings per day of fruits and vegetables was fulfilled only by 179 (25.9%) of students. Daily consumption of fast foods/carbonated drinks was reported by 65(9.4%) of the students.

Overweight and Obesity:

77 (11.1%) were found to be overweight (BMI 25-29.99) & 15 (2.2%) were obese (BMI >30).

Awareness of risk factors:

527 (76.3%) were aware of the risk factors. Level of awareness increased as the year of study advanced. Awareness was lowest among the first year students and all the interns and postgraduate students were aware of the risk factors.

Discussion

In present study, smoking was present in 17.1% of the students which is much higher as compared to the study done in Delhi by Rustagi et al., which is 7%.[3]

Consumption of alcohol was reported to be 28.8% by

Rustagi et al., which is slightly higher than the present study i.e. 24%.[3] In present study, regular consumption of fruits and vegetables was reported by 25.9% students, which is much higher as compared to the study by Rustagi et al., which is 12%.[3]

Table-1: Gender Distribution of the study participants

Gender	No.	%
Male	372	53.80
Female	319	46.20
Total	691	100.00

Table-2: Prevalence of individual risk factors

Sl. No.	Risk Factors (n=691)	No.	%
1.	Inadequate physical activity	586	84.80
2.	Inadequate fruit & vegetable intake	512	74.10
3.	Sedentary lifestyle	200	28.90
4.	Alcohol intake	166	24.00
5.	Smoking	118	17.10
6.	Pre-hypertension	94	13.60
7.	High BMI ($\geq$25 Kg/m2)	92	13.31
8.	Unfavorable Waist-Hip Ratio	32	4.63
9.	Family history of IHD	31	4.50

Table-3: Distribution according to number of risk factors and total prevalence

No. of risk factors	No.	%	Overall
None	20	2.89%	2.89%
Any one	122	17.66%	97.11% (671)
Any two	163	23.59%	
Any three	171	24.75%	
Any four	142	20.55%	
Any five	44	6.37%	
Any six	21	3.04%	
Any seven	8	1.15%	
Any eight	0	0.00%	
All nine	0	0.00%	
Total	*691*	*100.00%*	*100.00%*

Table-4: Awareness about risk factors of IHD

Aware	No.	%
Yes	527	76.30%
No	164	23.70%
Total	691	100.00%

A study has shown that leisure-time exercise, including as much as 35–40 minutes per day of brisk walking, was protective for CHD risk and sedentary lifestyles were positively associated with risk of CHD.[4]

Another study has shown that diets rich in vegetables and use of mustard oil could contribute to the lower risk of IHD among Indians.[5]

Conclusion :
Risk factors of IHD are prevalent among the medical students at their very young age and may progress further with time. These risk factors are modifiable, hence, strategies and interventions must be developed targeting these risk factors to promote healthy behaviors among the future doctors.

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