FREQUENCY OF RISK FACTORS AND AWARENESS REGARDING ISCHEMIC HEART DISEASES AMONG MEDICAL STUDENTS OF A PRIVATE MEDICAL COLLEGE, PESHAWAR, PAKISTAN

Syed Imran Gilani[1], Saira Afridi[1]✉

1 Department of Community & Preventive Dentistry, Sardar Begum Dental College & Hospital, Gandhara University, Peshawar, Pakistan

Email✉: dentistsaira@gmail.com

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ABSTRACT

OBJECTIVES: To find out the frequency of risk factors and awareness levels regarding Ischemic heart disease (IHD) among medical students of a private medical college of Peshawar Pakistan.

METHODS: It was a cross-sectional study design. All the students from first and second year MBBS were invited using universal sampling technique, of which 143 (48 males & 59 females) participated. Data was collected using an interview based questionnaire, which included questions regarding frequency of risk factors and awareness level of students regarding ischemic heart disease. Frequency tables were drawn using an SPSS 15.

RESULTS: Mean age of the study population was 19.8±1.0 years. Vast majority of the students (90.2%) were well-aware of the risk factors associated with IHD. Majority of students were found to be vulnerable to risk factors associated with IHD such as lack of exercise (n=62; 44%), family history of IHD (n=39; 27.3%), presence of stress (n=89; 62.2%) and use of junk food per week (n=68; 47.6%). Smoking habit was observed in only 4.2% (n=6) of students. No association was found between awareness levels of students with gender, smoking habits, exercise, stress, use of oil or ghee and consumption of junk food.

CONCLUSION: Despite the fact that over-whelming majority of the students were well aware of the risk factors for IHD; they were prone to common risk factors such as lack of exercise, use of junk food, family history of IHD and presence of stress.

KEY WORDS: Myocardial Ischemia (MeSH), Awareness (MeSH), Risk factors (MeSH), Medical Students (MeSH), Stress (Non-MeSH).

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INTRODUCTION

Ischemic heart disease (IHD) is one of the most vexing and crucial medical problems that face the civilized world today. It does not respect class, race or locality. According to WHO, it is the number-one cause of death globally.[1] Cause of IHD is blockade of blood flow to the cardiac muscles, resulted by accumulation of fatty deposits on the inner wall of the blood vessels.[2]

Statistics reveal that in 1937, in USA the death rate due to IHD was 4.8 percent of all deaths, while it was 31 percent in 1967. The enormous increase in this problem over span of 30 years, justifies the term epidemic small wonder, then affluent societies. Incidence of the disease is different in different countries.[3]

In Pakistan, IHD comprises 23 percent of all cardiac cases admitted in hospital.[4] In a study, Ilyas Ansari reported that 28 percent of patients admitted in hospital for IHD are under the age of 45 years.[4] IHD may manifest as angina pectoris, acute myocardial insufficiency or myocardial infarction. According to estimates nearly one hundred thousand individuals suffered an acute myocardial infarction in Pakistan in the calendar year 2010.

IHD is a major health issue in Pakistan, placing a significant burden in terms of morbidity and mortality on the population and the terms of cost on the individual and the public health system. Major risk factors for IHD are divided into non-modifiable and modifiable. Non-modifiable are age, sex, and family history of IHD in a parent or a sibling whereas modifiable include dyslipidemia, smoking, hypertension, obesity, diabetes mellitus, physical inactivity and stress.[5]

Studies indicate the medical students experience highest degree of pressure from studies leading to severe depression. Inam SNB reported anxiety and depression in 60% of medical students,[6] while another study in Karachi these were reported in 70% medical students.[7] Several lines of evidence suggest that clinical depression may be a risk factor for IHD.[8,9]

Keeping in view the burden of IHD, this study is being conducted to find out the frequency of risk factors and awareness levels regarding IHD, among medical students so that better planning and treatment strategies be adopted right from the beginning and disease be prevented in the way to help the community as well as economy of country.

METHODS

This cross-sectional study was conducted at Rehman medical college, Peshawar, Pakistan. Study duration was 3 months. Relevant permission from Medical research department as well as from the administration of the college was taken prior to the study. All the

TABLE I: AWARENESS LEVEL GRID

Score	Awareness Level
≤5 score (≤34%)	Less aware
6 to 10 score (35% - 66%)	Moderately aware
≥11 score (≥67%)	Well aware

students from 1st and 2nd year MBBS were invited using universal sampling technique, except those who were absent or refused to participate in the study. Of all, 143 participated with a 71% response rate. There were 84 (58.7%) males and 59 (41.3%) female undergraduate medical students.

An interview based questionnaire was used, divided into two sections. Section-A dealt with the awareness levels of the students regarding risk factors for IHD, while Section-B had questions to determine the frequency of risk factors for IHD. The questionnaire contained both open-ended and close-ended questions. A pilot study on 30 participants was performed to validate the questionnaire. Awareness levels of students were graded by a grid given in Table I.

An SPSS version 15 was used for data analysis. Basic demographic data like age, gender etc. were analyzed using descriptive statistics. Open-ended questions were categorized and analyzed using frequency tables. Frequencies were also determined in terms of percentages and presented in the form of bar charts/pie charts. Chi square test was used to compare categorical data to determine any association.

RESULTS

A total number of 143 students participated in the study with 83 students from 1st year MBBS and 60 from second year MBBS. Mean age of the study population was 19.8±1.0 years. Out of total, 58.7% (n=84) students were male while 41.3% (n=59) were females. Vast majority (90.2%) of the students were well aware of the risk factors associated with IHD (Table II).

Majority of students were found to be vulnerable to risk factors associated with IHD such as lack of exercise (44%), family history of IHD (27.3%), presence of stress (62.3%) and use of junk food per week (39.1%) [Table III]. Junk food (per week) was taken regularly by 10.7 % of males and 5.1% of females while often use of junk food was observed in 36.9% of male and 42.4% of female students (Table IV). Perceived moderate to severe stress was observed in 22.6% of male students and 22% of female students (Table V).

No statistically significant difference was found in awareness levels with year of MBBS, gender, smoking habits, exercise, stress or use of oil or ghee (Table VI).

TABLE II: AWARENESS LEVEL OF MEDICAL STUDENTS REGARDING RISK FACTORS OF ISCHEMIC CARDIAC DISEASE

Awareness Level	Frequency	Percent
Less aware	2	1.4
Moderately aware	12	8.4
Well aware	129	90.2
Total	143	100.0

TABLE III: FREQUENCY OF COMMON RISK FACTORS FOR ISCHEMIC HEART DISEASE

Variable		Frequency (n=143)	Percentage
Do you exercise?	Yes	81	56
	No	62	44
Do you smoke?	Yes	6	4.2
	No	137	94.8
Family history of IHD	Yes	39	27.3
	No	104	72.7
Medium of cooking	Oil	123	86
	Ghee	20	14
Use of Steroids	Yes	9	6.3
	No	134	93.7

DISCUSSION

The results of this study indicate that that majority of the students at RMC were well aware of the risk factors associated with IHD. In comparison to a study conducted by Ayesha Almas et al, conducted in University students in Karachi (2008) found that 50% of the students had proper knowledge regarding IHD.[10] Since the current study was performed on medical students, thus the awareness level was better.

Regular exercise provides considerable benefits in reducing morbidity and mortality from several chronic diseases in adults, especially from CHD and its risk factors.[11] Current study revealed that 44% of the students did not exercise on regular basis, hence being at risk of developing IHD.[12] Al Refaee and Al-Hazza in (2001) Riyadh, KSA had also reported that over 53% of Saudi students were totally physically inactive.[13]

A high proportion of medical students in the present study were consuming fast foods which contained a high amount of calories and saturated fats. Almost 90% of the students reported that they consume junk food often or occasionally in a week. More than 10% of the male students reported to consume junk food regularly as compared to the female students (5%). Similar results were also reported by Sabra AA, et al. who reported high consumption of junk food in KSA University students.[14] Nisar N, et al. reported consumption of junk food in 97% and lack of exercise in 53% of medical students.[15] In our study lack of exercise (44%) was observed in 44% of students. Use of junk food and lack of exercise can lead to obesity-another risk factor for IHD, which is not uncommon in medical students.[16]

The present study also showed presence of various intensity of stress among the medical students. The results show that more than 60% of the students reported to have some degree of stress. Female students reported to have more stress as compared to male students. This is in agreement with another study carried out in Saudi

TABLE IV: USE OF JUNK FOOD PER WEEK IN MALE & FEMALE STUDENTS

Variable	Never		Occasionally		Often		Regularly		p-Value (Chi square Test)
	Frequency	%age	Frequency	%age	Frequency	%age	Frequency	%age	
Male (n=84)	4	4.8	40	47.6	31	36.9	9	10.7	>0.05
Female (n=59)	1	1.7	30	50.8	25	42.4	3	5.1	>0.05
Total (n=143)	5	3.5	70	48.9	56	39.2	12	8.4	

TABLE V: USE OF JUNK FOOD IN MALE & FEMALE STUDENTS

Variable	No stress		Mild Stress		Moderate stress		Severe stress		p-value (Chi square Test)
	Frequency	%age	Frequency	%age	Frequency	%age	Frequency	%age	
Male (n=84)	34	40.5	31	36.9	15	17.8	4	4.8	>0.05
Female (n=59)	20	33.9	26	44.1	13	22	0	0	>0.05
Total (n=143)	54	37.8	57	39.8	28	19.6	4	2.8	

Arabia, which reported the presence of stress in medical students to be around 57%.[17] A similar study conducted by Babar T Shaikh, et al. in medical students of Karachi reported the presence of stress to be 90%.[16] The same study reported the presence of stress to be more in males, which is in contrast to the results of our findings.[18]

Family history of IHD is also an important risk factor. Our study revealed that more than 27% of the students, reported to have a family history of ischemic heart disease. In comparison a hospital based study conducted in Karachi revealed that 42% of the subjects had family history of ischemic heart disease.[19]

Smoking is another common risk factor for IHD. The current study showed that only 4.2% of students were having smoking habits. This figure supports the findings of Nisar N, et al.;showing 7% of medical students as tobacco users. [15]

Another study carried out on medical students in Zia-Ud-Din medical college reported the prevalence of smoking around 14.5%, which is far more than the current study.[19] Another study conducted in Peshawar on medical students reported smoking rate of 31.8%, which again is much more than the smoking rate in the current study.[20]

LIMITATIONS OF STUDY

Findings of this study conducted on students of a single medical college cannot be generalized to all medical students of Pakistan. A larger study on medical students from public and private medical colleges of all provinces of Pakistan is needed to study life style, dietary habits and other potential risk factors of IHD.

CONCLUSION

This study concluded that vast majority of the students were aware of the risk factors for IHD. Despite that nearly half of the students reported not to exercise on regular basis. Many students reported use of junk food on weekly basis. Use of junk was comparatively more common in female students. Majority students reported mild to moderate stress levels, which is also a risk factor for CAD.

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TABLE VI: COMPARISON OF AWARENESS LEVELS OF STUDENTS WITH VARIOUS PARAMETERS

Variables		Awareness Levels			p-value
		Less Aware	Moderately Aware	Well Aware	
Year of MBBS course	1st year	2	8	73	0.38
	2nd year	0	4	56	
Gender	Male	1	9	74	0.47
	Female	1	3	55	
Smoking status	Yes	0	1	5	0.72
	No	2	11	124	
Exercise	Yes	0	6	75	0.22
	No	2	6	54	
Stress Level	No stress	1	4	49	0.80
	Mild stress	1	7	49	
	Moderate stress	0	1	27	
	Severe stress	0	0	4	
Cooking	Oil	1	10	112	0.31
	Ghee	1	2	17	

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

SIG: Concept & study design, drafting the manuscript, final approval of the version to be published

SA: Acquisition, analysis & interpretation of data, critical review, final approval of the version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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