



A STUDY ON PREVALENCE OF CARDIOVASCULAR RISK FACTORS OF MEDICAL STUDENT IN A DISTRICT OF WEST BENGAL

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ABSTRACT **Background:** Cardiovascular diseases are “lifestyle diseases” cause death worldwide. Most are acquired starting from adolescence. So this study was designed following objective to determine

the prevalence of risk factors of cardiovascular diseases among medical undergraduates of a district of West Bengal.

Methods: Cross-sectional observational study conducted 96 medical students. Analysis of results was done by percentage and proportion.

Results: A total of 96 students were interviewed and examined. Mean age 19.3 years. 37.7% male, 8.3% were alcohol users. 53.1% did no exercise. 12.5% were current smokers. Abnormal waist hip ratio in 46.5% female. 35.8% males were pre hypertensive while 4% boys were hypertensive. 4.5% were early diabetic. 4.5% had high blood cholesterol.

Conclusions: A high prevalence of risk factors for cardiovascular diseases was found that emphasizes the need of interventions to reduce these risk factors among these future doctors.

KEYWORDS : cardiovascular diseases, Risk factors, Lifestyle, Anthropometry

INTRODUCTION

Cardiovascular diseases are “lifestyle diseases” cause death worldwide. According to WHO Cardiovascular diseases are Non Communicable disease (NCDs), NCDs are responsible for almost 70% of all deaths worldwide.¹ The rise of Cardiovascular diseases has been driven by primarily four major risk factors: tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets.² Majority of these diseases are preventable illnesses. So interventions targeting the main risk factors (e.g. smoking, alcohol intake, physical inactivity etc.) could have a significant impact on reducing the burden. Which are mostly acquired starting from adolescence³ hence screening medical college students is definitely justified who will also be our future medical expert.⁴ With this in mind the present study was conducted with

METHODS

Study design and setting:

This was a cross-sectional institution based observational, descriptive type of study conducted in a district Medical college of West Bengal.

Study participants

Medical undergraduate students.

Sample size: 96.

Sampling technique: purposive

Study tools

Pre-designed, Pre-tested, semi-structured interview schedule, stadiometer, bathroom type weighing machine, laboratory blood reports

Study technique

After obtaining permission from higher authority the study objectives were explained, importance and the procedure of the study was explained too. After obtaining consent they were interviewed then anthropometry and BP, weight, height was recorded, waist and hip circumference were measured BP was classified according to JNC-8. BMI was calculated. For analysis of BMI, South Asia Pacific guidelines were followed.⁵ Students having more than 3 risk factor were motivated to undergo blood tests and those who consented their laboratory tests were done.

Operational definition⁶

Current tobacco user: Someone who at the time of survey used tobacco either daily or occasionally.

Current alcohol user: Those who consumed 1 or more (30 ml) of any type of alcohol in the year preceding the survey.

Fruits and vegetables: 100 gm were considered as one serving. WHO recommends consumption of at least 400 grams of vegetables and fruits per day as adequate.

Adequate physical activity: Recall for one week. Physical activity of moderate intensity at least 30 minutes per day in any sphere of their daily routine activity (working hours, travelling, leisure time) for 5 days in a week i.e., ≥ 150 minutes/week was considered as adequate.

STATISTICAL ANALYSIS

Data were entered into an MS Excel sheet.

Ethical issues and necessary approval

The study obeyed the ethical standards for an observational study and approved by the Institutional Ethics Committee, informed written consent was obtained from each of the study participant.

RESULTS

96 students were interviewed and examined. Table 1 denotes the socio-demographic profiles. The mean age of the participants was 19.3 years (Range (18 to 22 years), 53% was male (55.2%), 85.4% were Hindus. 80.4% were staying in the hostel. Majority of the participants were from upper socioeconomic class as per modified BG Prasad socio economic scale January 2020.⁷ 70.4% were from nuclear family. Positive family history of hypertension (54.2%), cardiovascular diseases (10.4%), diabetes mellitus (40.6%), obesity (20.8%), and dyslipidemia (07.3%) were present. Table 2 depicts the lifestyle related findings 53.1% did no exercise. 12.5% were current smokers, 8.3% were alcohol users. 85.4% were non vegetarians. 95.8% skipped meals. Although 68.85 had vegetables only 17.7% had adequate fruits. 66.7% had history of intake of adverse food habit. Table 3 shows 46.5% female and 37.7% male had mild to moderate risk of high BMI, 51.2% female and only 1.8% male had abnormal waist circumference. None of the boys but 46.5% girls had abnormal waist hip ratio. 34.8% female and 35.8% males were pre hypertensive while 4% boys but no girls were frank hypertensive according to JNC-8 criteria

Table 1: Sociodemographic variables and family history of cardiovascular risk factors (n=96).

Variables		No	%
Mean age in years	19.3		
Residence	Urban	63	65.7
	Rural	33	34.3
Type of student	Boarder	81	84.4
	Day Scholar	15	15.6
Religion	Hindu	82	85.4
	Muslim	12	12.5
	Christianity	2	2.1
Gender	Male	53	55.2
	Female	43	44.8

Family type	Nuclear	28	70.8
	Joint	68	29.2
Socio-economic status	Class I	72	75.0
	Class II	17	17.7
	Class III	07	07.3
Positive family history#	Hypertension	52	54.2
	Cardio vascular diseases	10	10.4
	Diabetes mellitus	39	40.6
	Obesity	20	20.8
	Dyslipidemia	07	07.3

Table 2: Distribution according to life style related risk factors.

Variables		No	%
Physical exercise	No exercise	51	53.1
	<150 mins/week	29	30.2
	≥150 mins/week	16	16.7
Current alcohol user	No	88	91.7
	Yes	08	08.3
Current smoker	Yes	12	12.5
	No	84	87.5
Primary diet	Vegetarian	14	14.6
	Non vegetarian	82	85.4
Skipped meals	Yes	92	95.8
	No	04	04.2
Snacks in between meals	1-5 times/day	13	13.5
	Occasionally	73	76.0
	No	10	10.4
Intake of vegetables	≥2 servings/day	66	68.8
	No or <2 servings/day	30	31.2
Intake of fruits	No or <2 servings/day	17	17.7
Adverse food intake	≤3 times/week	64	66.7
	>3 times/week	32	33.3

Table 3: Distribution of study population according to anthropometric measurements, blood pressure with gender.

Variables		Male (n=53) N (%)	Female (n=43) N (%)	Total Percentage	(%)
Body mass index (kg/m ²)	Underweight (<18.5)	04 (07.1)	04 (09.3)	8	8.3
	Acceptable (18.5-23)	26 (49.0)	15 (34.8)	41	42.7
	Mild-moderate risk (23.1-27.5)	20 (37.7)	20 (46.5)	40	41.7
	Higher high risk (≥27.6)	03 (05.7)	04 (09.3)	7	7.3
Waist circumference	Normal	51 (96.2)	21 (48.8)	72	75.0
	Abnormal	02 (01.8)	22 (51.2)	24	25.0
Waist:hip ratio	Normal	53 (100.0)	23 (53.5)	76	79.2
	Abnormal	00 (00.0)	20 (46.5)	20	20.8
Blood pressure	Normal	30 (56.6)	28 (65.2)	58	60.4
	Pre hypertension	19 (35.8)	15 (34.8)	34	35.4
	Increased	04 (07.5)	00 (00.0)	4	4.2

Table 4: Medical students and their biochemical parameters (n=22).

Variables		No	%
Fasting blood sugar	Normal (70-100 mg/dl)	21	95.5
	Early diabetes (101-125 mg/dl)	01	04.5
Blood cholesterol	Desirable (<200 mg/dl)	18	81.9
	Borderline (200-239 mg/dl)	03	13.6
	High risk (≥240 mg/dl)	01	04.5
Blood triglyceride	Desirable (<150 mg/dl)	19	96.4
	Borderline (150-199 mg/dl)	01	04.5
	High risk (≥200 mg/dl)	02	09.1

Table 4 shows the laboratory reports. 4.5% were early diabetic. 13.6% were borderline and 4.5% had high risk for blood cholesterol. 9.1% had high risk of blood triglyceride.

DISCUSSION

The study shows high prevalence of risk factors for cardiovascular

diseases 34.8% female and 35.8% males were pre hypertensive, 4% boys were hypertensive, while a similar study of south Kolkata only 13.6% boys and 6.3% girls had elevated BP.⁷ Although it that study inadequate intake of fruit was 96.4% and inadequate intake of vegetable was 90.9%

which is quite high in comparison to our study where the values are respectively 31.2% and 17.7%.

A similar study conducted in Nepal nearly 40% of respondent had family history of either hypertension, diabetes, dyslipidemia, or thyroid disorder. In our present study it is 40.6%, 46.5% female and 37.7% male had mild to moderate risk of high BMI while in the study from Nepal

only 11% male and 14.5% female were either pre-obese (over weight) or obese.⁸

In the study conducted in Tamil Nadu 30% of the medical students had the habit of regular physical activity while in present study it is only 16.7%.⁹

These variations can be due to different study settings and study tools.

Recommendations

So we see that risk factors were quite common, following recommendations Students were suggested to have a balanced diet and increase fruits & vegetable intake, reduce intake of salty foods and junk foods. Hostel canteen authorities were requested to prepare vegetable items regularly. Students were encouraged to practice yoga or any other form of exercise esp. female students. Habit of using stairs was encouraged. Students having abnormal value were advised attend medicine OPD.

CONCLUSION

A high prevalence of risk factors for cardiovascular diseases was found in the present study which emphasizes the need of interventions to reduce these risk factors. The modifiable risk factors should be curbed in future doctors by lifestyle modifications like no smoking habits, no alcohol use etc. peer groups were encouraged to help their friends with risk factors. Periodic screening of the students at regular intervals is required.

Limitations of the study

In the present study, all patients were interviewed so there may be subjective variation or conscious falsification regarding sensitive questions like addiction which cannot be verified. Recall bias might be present

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