

## Practice of Physical Activity Among Future Doctors: A Cross Sectional Analysis

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### ABSTRACT

**Background:** Non communicable diseases (NCD) will account for 73% of deaths and 60% of the global disease burden by 2020. Physical activity plays a major role in the prevention of these non-communicable diseases. The stress involved in meeting responsibilities of becoming a physician may adversely affect the exercise habits of students. So, the current study aimed to study the practice of physical activity among undergraduate medical students.

**Methods:** A cross sectional study was conducted among 240 undergraduate medical students. Quota sampling method was used to identify 60 students from each of the four even semesters. A pre-tested, semi-structured questionnaire was used to collect the data. Statistical Package for Social Sciences (SPSS) version 16 was used for data entry and analysis and results are expressed as percentages and proportions.

**Results:** In our study, 55% were 20 to 22 years old. Over half of the students were utilizing the sports facilities provided by the university in the campus. Majority of students 165 (69%) had normal body mass index (BMI), (51) 21% were overweight, while 7 (3%) were obese. Of the 62% who were currently exercising, the practice of physical activity was more among boys as compared to girls (62% v/s 38%). Lack of time 46 (60.5%), laziness (61.8%), and exhaustion from academic activities (42%) were identified as important hindering factors among medical students who did not exercise.

**Conclusion:** A longitudinal study to follow-up student behavior throughout their academic life is needed to identify the factors promoting the practice of physical activity among students.

**Keywords:** Body mass index; lack of time; medical students; physical activity; stamina.

### INTRODUCTION

During the 20<sup>th</sup> century, the leading causes of death shifted from infectious to chronic diseases: Cardiovascular disease, cancer, and diabetes are now among the most prevalent, costly, and preventable of all health problems.<sup>[1]</sup> These diseases have been strongly associated with unhealthy lifestyle habits, including

inappropriate nutrition, lack of exercise, smoking, alcohol consumption, caffeine overuse, and improper sleeping habits.<sup>[2]</sup> Healthy active living benefits both individuals and society in many ways, for example, by increasing productivity, improving morale, decreasing absenteeism, and reducing health-care costs. Other benefits include improved psychological well-being, physical capacity; self-esteem and the ability to cope with stress.<sup>[1]</sup> The health benefits of participation in regular exercise are well known. It is also well established that regular moderate- or vigorous-intensity exercise will lower the risks and symptoms associated with the co-morbidities of obesity.<sup>[3]</sup>

Although behaviors of students are considered a temporary part of college life, however, unhealthy habits picked up at this level generally persist in adult life. University and college arenas, therefore, represent an important opportunity for health and nutritional education. College life is also a period during which individuals are for the most part exposed to stress and lack of time, posing a barrier to adoption of healthy practices.<sup>[2]</sup> Physical activity among adolescents is consistently related to higher levels of self esteem and self-concept and lower levels of anxiety and stress.<sup>[1]</sup>

Amongst this college population, it is assumed that the medical students have a greater knowledge about healthy lifestyle and dietary habits when compared to other students. One of the most important factors for predicting the physical condition of medical students is their own attitudes toward health promotion, illness prevention, and exercise.<sup>[4]</sup> However, there is no evidence to indicate that this knowledge translates into practice in terms of maintaining good health. Healthy habits among medical students are even more important as they are future physicians and the students who personally ignore adopting healthy lifestyle are more likely to fail to establish health promotion opportunities for their patients. Also, medical students have been shown to exhibit early risk factors for chronic diseases.<sup>[2]</sup> With this background in mind, the current study was designed to assess the attitude and practices of medical students regarding physical activity and to determine the motivating and hindering factors for the practice of physical activity.

## METHODS

Kasturba Medical College (KMC), Manipal, which ranks among the top five medical colleges in the country today, was established six decades ago. The physical facilities for research work and student amenities have been steadily developed over the years. Manipal university provides the finest in infrastructure and facilities to its students when it comes to learning and research. In addition, other facilities on the campus include gym, swimming pools, and football and cricket grounds, and a new indoor sports complex. The university aids to promote physical activity among the students by offering extracurricular activities like annual inter-batch and inter-college sports events and the presence of these facilities within the campus encourages students to opt for physical activities during their free time.

A cross sectional study was conducted among the undergraduate medical students of Kasturba Medical College, Manipal. Institutional ethical committee clearance was obtained prior to the initiation of the study. The study sample included 240 medical students (60 from each year; 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup>). Quota sampling method was used where in attendance registers were used to identify the students. A total of 15 boys and 15 girls were selected randomly from each batch, A and B. Thus, 30 students were selected from each batch and 60 from each semester- 2<sup>nd</sup>, 4<sup>th</sup>, 6<sup>th</sup>, and 8<sup>th</sup>. A pre-tested, semi-structured questionnaire was used to collect data. Questionnaires were administered to the selected students at the lecture hall after the classes and were collected back after 15 minutes. In addition to demographic details, attitude and practice of physical activity, motivating and hindering factors for engaging in exercise, self reported height and weight were also included in the questionnaire. Body mass index (BMI) was calculated using the formula weight in kilograms/height in square meters. Students not consenting to participate in the study were excluded. Statistical Package for Social Sciences (SPSS) version 16 was used for data entry and analysis and results are expressed as percentages and proportions.

## RESULTS

In our study population, 83 (35%) students were

aged between 17-19 years, 133 (55%) were between 20 to 22 years, and 24 (10%) were in the 23-25 years age range. There were equal numbers of boys and girls (120 each). Nearly 80% of the students resided in the campus hostels. Over half (55%) of the students were utilizing the sports facilities provided by the university in the campus. Majority of students 165 (69%) had normal BMI, (51) 21% were overweight, while 7 (3%) were obese. A good proportion 148 (61.9%) reported current practice of physical activity as shown in Table 1. Table 2 shows the results of cross tabulation between age, gender and practice of physical activity versus BMI categories. Here, only

gender was identified to be a significant variable. In the normal BMI category, most of them 95 (57.6%) were girls; while in the overweight category, most of them were boys 37 (72.5%), although the practice of physical activity was more among boys as compared to girls (62% v/s 38%). The reasons predominantly quoted by students for exercising were to increase stamina (66%), improve fitness (59%), and lose weight (55%). Lack of time 46 (60.5%), laziness (61.8%), and exhaustion from academic activities (42%) were identified as important hindering factors among medical students who did not exercise.

## DISCUSSION

In most parts of the world, non-communicable diseases have become a major epidemic. This is due, in part, to a rapid change in lifestyles leading to reduced physical activity, changing diets, and increased tobacco use. This trend is present in all societies, rich and poor, developed and developing.<sup>[5]</sup>

Physical inactivity is the fourth leading risk factor for global mortality. Increasing levels of physical inactivity are seen worldwide, in high-income countries as well as in low- and middle-income countries. Urban and environmental policies can have huge potential to increase the physical activity levels in the population.<sup>[6]</sup> It is well known that the practice of physical exercise can have important benefits in terms of preventive and therapeutic effects on health. A number of studies conducted to evaluate the physical activity, diet, and fitness status of university students<sup>[7,8]</sup> have revealed that the physical condition and nutritional habits of students is very much associated with their own

**Table 1:** General characteristics of the medical students *n*=240

Variables	Males N (%)	Females N (%)	Total N (%)
Age group (years)			
17-19	40 (33.3)	43 (35.8)	83 (34.6)
20-22	67 (55.8)	66 (55.0)	133 (55.4)
23-25	13 (10.8)	11 (9.2)	24 (10.0)
Place of upbringing			
India	96 (80.0)	92 (76.7)	188 (78.3)
Abroad	24 (20.0)	28 (23.3)	52 (21.7)
Body mass index (kg/m <sup>2</sup> )			
<18.5	10 (8.3)	7 (5.8)	17 (7.1)
18.5-24.9	70 (58.3)	95 (79.2)	165 (68.8)
25-29.9	37 (30.8)	14 (11.7)	51 (21.3)
≥30	3 (2.5)	4 (3.3)	7 (2.9)
Current practice of physical activity			
Yes	87 (72.5)	62 (51.3)	149 (61.9)
No	33 (27.5)	58 (48.7)	91 (38.1)

**Table 2:** Body mass index (BMI) categorization according to demographic variables and practice of physical activity *n*=240

Variables	Categorization of BMI (kg/m <sup>2</sup> )				Total N (%)	Chi-square value	P value
	<18.5	18.5-24.9	25.0-29.9	≥30			
	N (%)	N (%)	N (%)	N (%)			
Age group (years)						5.698 (LR)	0.458
17-19	07 (41.2)	59 (35.8)	15 (29.4)	02 (28.6)	83 (34.6)		
20-22	09 (52.9)	92 (55.8)	27 (52.9)	05 (71.4)	133 (55.4)		
23-25	01 (5.9)	14 (8.5)	09 (17.6)	0	24 (10.0)		
Gender						15.234 (LR)	<b>0.002</b>
Male	10 (58.8)	70 (42.4)	37 (72.5)	03 (42.9)	120 (50.0)		
Female	07 (41.2)	95 (57.6)	14 (27.5)	04 (57.1)	120 (50.0)		
Current practice of physical activity						2.169 (LR)	0.538
Yes	10 (58.8)	100 (61.0)	35 (68.6)	03 (42.9)	148 (61.9)		
No	07 (41.2)	65 (39.0)	16 (31.4)	04 (57.1)	92 (38.1)		

attitudes toward health promotion and illness prevention.<sup>[7,8]</sup> Positive attitudes in these regards are vital for our future health professionals.

A positive finding revealed by our study was that nearly 70% of the medical students had a normal BMI. Similar results have been reported from Thailand,<sup>[9]</sup> while in Columbia, 80% of the students had normal BMI.<sup>[5]</sup> But students with BMI $\geq$ 25 kg/m<sup>2</sup> constituted 24% in our sample, similar to Columbian students (22%)<sup>5</sup> and a study from Maharashtra (20%)<sup>10</sup> as against a lower proportion (16%) in Thailand and Pakistan.<sup>[2,9]</sup>

Although 62% of the medical students, we surveyed, reported some form of current physical activity, the males (72.5%) outnumbered the females (51.3%), in contrast to Dubai and Saudi Arabia.<sup>[1,11]</sup>

Physical activity was being practiced by 100 (60.6%) of normal BMI students, while the proportion of practice of physical activity increased as the BMI increased, i.e., 38 (65.5%) were exercising in the BMI group of  $\geq$ 25 kg/m<sup>2</sup>. Congruence of such findings was also reported by Banerjee *et al.*<sup>[10]</sup> Although, it cannot be concluded whether the higher BMI motivated the students to indulge in more physical activity.

Lack of time and laziness or lack of motivation was reported by over 50% of the students to be the most important hindering factors for practice of regular physical activity which were also identified by other studies.<sup>[2,11,12]</sup> Reasons for exercising quoted by students in the present study were to improve fitness, promote and maintain health, and as a measure to control weight were all found to be identical to the suggestions given to promote physical activity among Egyptian and Saudi medical students as reported by El-Gilany *et al.*<sup>[12]</sup>

To conclude, a longitudinal study to follow-up student behavior throughout their academic life and across different strata of students and across various disciplines will add value and weightage to the factors promoting the practice of physical activity among students.

## LIMITATIONS

The fact that the study was conducted at the beginning of the term could have influenced the opinions of the students, as compared to practice of physical activity nearing the end of the term, closer to exams. Height and weight as stated by

students was taken due to logistic constraints in obtaining the measurements. As the study was carried out in a University setting, the findings are limited to University students and the results cannot be generalized to other settings.

## RECOMMENDATIONS

There is a need to encourage physical activity in medical schools and also to emphasize the importance of inculcating physical activity in the lifestyle of medical students, so that as physicians of tomorrow, they are able to advice their patients regarding healthy lifestyle practices.

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