Original Article

Physical Activity and Fitness Levels Among the Students of Ad-din Sakina Women's Medical College in Jashore, Bangladesh

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Abstract

Background: *Physical inactivity is a global public health concern, strongly associated with chronic diseases and poor mental health. Medical students are particularly vulnerable due to academic pressure and limited time for physical activity. Despite this, localized data on their physical activity and fitness patterns in Bangladesh remains limited.* ***Materials and Methods:*** *This study aimed to assess the physical activity and perceived fitness levels among medical students at Ad-din Sakina Women's Medical College, Jashore, Bangladesh, and to identify influencing factors such as academic stress and extracurricular involvement. A cross-sectional study was conducted using a self-reported questionnaire combining the International Physical Activity Questionnaire - Short Form (IPAQ-SF) and the International Fitness Scale (IFIS). Data were collected from students across all academic years using convenience sampling. Descriptive statistics were used to analyze demographic, academic, and physical activity data.* ***Results:*** *A total of 293 students participated in the study. Most were aged 21–22 years and lived in urban areas. A majority reported moderate to high academic stress, and only a small number participated in extracurricular activities. Physical activity levels were generally low, with 77.5% reporting no vigorous and 79.2% no moderate activity. Walking activity was also limited, and a considerable number reported high or very high sitting times. Perceived fitness levels were largely average, with only 24.9% rating their fitness as good or very good.* ***Conclusion:*** *The study reveals concerning trends of low physical activity and moderate perceived fitness among medical students, exacerbated by academic stress and sedentary behavior. Interventions to promote physical activity and reduce stress among medical students are urgently needed to support their physical and mental well-being and academic success.*

Keywords: Physical activity, Medical students, Academic stress, Perceived fitness.

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Introduction

The global concern about physical inactivity continues to rise because research shows that sedentary behavior leads to multiple chronic health conditions. Research demonstrates that inactivity leads to cardiovascular diseases while also increasing the risk of type-2 diabetes, hypertension, obesity and some types of cancer.[1] People who do not exercise while maintaining unhealthful eating patterns accelerate their chance of developing these diseases. Physical inactivity stands as a leading factor for global mortality according to the World Health Organization (WHO).[2] A sedentary lifestyle creates health problems that go beyond physical well-being because it also impacts mental health. Medical research demonstrates that insufficient physical movement leads to higher stress levels and increased anxiety alongside depression while also causing cognitive decline.[3] Physical activity functions as an essential foundation for physical health maintenance and provides dual support for mental health and cognitive function and mood enhancement. Research demonstrates that regular exercise leads to better academic performance through its positive effects on concentration and memory alongside stress management abilities which results in superior learning results.[4] Students who study medicine or other demanding programs face persistent obstacles when trying to maintain consistent physical exercise schedules.[3] Medical students face extensive academic demands through long study hours

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and clinical requirements along with stringent academic standards which reduce their available time for physical activity. Students who do not exercise regularly face increased stress which damages their physical and mental health while affecting their academic success and personal growth.[3-4]

The definition of physical activity includes body movements that use energy across a spectrum from basic activities such as walking and gardening up to intense exercises like running and weight training.[5] The range of physical activities differs substantially based on how intense they are and how long they last and which body systems they activate. Physical fitness levels describe an individual's capability to execute physical activities with efficiency by measuring their muscular strength together with cardiorespiratory endurance and flexibility and total stamina.[6] Medical students frequently experience academic stress which results in burnout together with fatigue and diminished mental health.[3–7] Students who allocate their time to prolonged study sessions and clinical placements and exam preparation face higher risks of declining fitness levels. Lack of physical exercise together with low fitness levels create additional stress which ultimately impacts their academic achievement negatively.[8] Physical activity and physical fitness are crucial for students, as they significantly impact both physical and mental well-being. Regular exercise enhances cognitive function, concentration, and memory, all of which are essential for academic success. Physical fitness also helps reduce the risk of chronic diseases and improves overall mood, reducing stress and anxiety.[9] For medical students, maintaining good fitness levels is especially important due to the demanding nature of their studies, long hours, and high academic pressures.[3] Regular physical activity can help them manage stress, prevent burnout, and stay mentally and physically healthy, ultimately supporting their academic performance and personal development in a challenging environment.[3,7,9]

This cross-sectional research examines physical activity and fitness levels among medical students. The study evaluates physical activity patterns through measurement of its frequency and intensity together with student-perceived fitness to determine activity patterns and areas needing improvement. The physical activity and fitness levels of medical students in Bangladesh remain understudied through localized research specifically within the setting of Ad-din Sakina Women's Medical College. Most existing studies on student health in Bangladesh focus on general populations of students rather than specific academic groups. The present study fills an essential literature gap by studying medical student physical activity patterns and fitness levels in Bangladesh to guide future health and academic performance enhancement initiatives.

Materials and Methods

This cross-sectional study assessed the physical activity and fitness levels among medical students at Ad-din Sakina Women's Medical College in Jashore, Bangladesh, using a self-administered questionnaire that combined the International Physical Activity Questionnaire - Short Form (IPAQ-SF) and the International Fitness Scale (IFIS).[10,11] The study aimed to explore patterns of physical activity and fitness, and the various factors influencing these, including academic stress, extracurricular involvement, and health conditions. The target population consisted of medical students from all academic years, ranging from the 1st to the 5th year. A convenience sampling method was used, and informed consent was obtained from all participants. The questionnaire was divided into two main sections: demographic information (age, gender, academic year, residence type, monthly family income, family living situation, part-time employment status, academic stress, extracurricular involvement, and health status) and physical activity and fitness assessment (using IPAQ-SF and IFIS).[10,11] The inclusion criteria for the study were medical

students enrolled at Ad-din Sakina Women's Medical College, Jashore, who were willing to participate and provide informed consent. Exclusion criteria included students who refused to give informed consent. The study measured various demographic variables, such as age, gender, academic year, residence type, family income, living situation, part-time employment status, academic stress, extracurricular activities, and co-morbidities. Physical activity was assessed through frequency and duration of vigorous and moderate activities, walking, and sitting time using the IPAQ-SF. Fitness levels were measured through self-reported perceptions of general physical fitness, cardiorespiratory fitness, muscular strength, speed/agility, and flexibility using the IFIS. The IPAQ-SF assessed the frequency and duration of vigorous, moderate physical activities, walking, and sitting time, while the IFIS measured participants' self-reported perceptions of their general physical fitness, cardiorespiratory fitness, muscular strength, speed/agility, and flexibility. The questionnaire was distributed online using Google Form Questionnaire, with an estimated completion time of 15-20 minutes. The data collection procedure continued from 6th February to 19th February of 2025, taking a total of 14 days. Descriptive statistics were used to summarize demographic data and physical activity levels, and physical activity/fitness levels using the statistical software SPSS (Version 20). Ethical approval was obtained from the ethical review committee of Ad-din Sakina Women's Medical College, and confidentiality was maintained.

Results

The demographic information of the participants is provided in Figure 1, 2 and 3. The majority of participants were in the 21-22 years age group, with 141 participants, followed by 93 participants in the 23-24 years group (Figure 1). The youngest group (19-20 years) included 48 participants, while only 11 participants were in the 25-26 years age category.

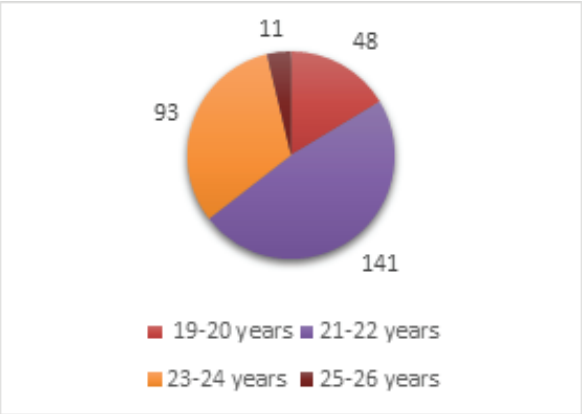

Figure 1: Age categories of the participants

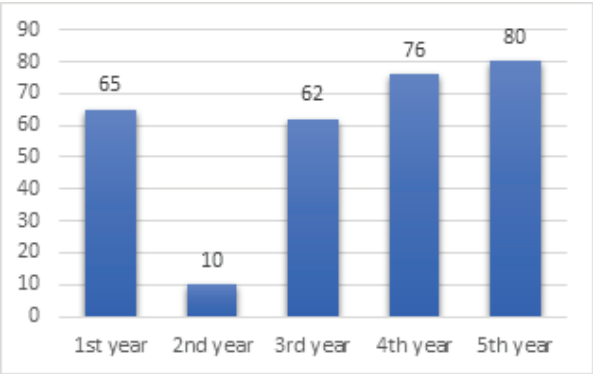

Figure 2: Academic year of participants

The highest number of participants were in the 5th year (80), followed by 4th year (76) and 3rd year (62). Only 10 participants were in their 2nd year, and 65 participants were in their 1st year of study (Figure 2). The majority of participants lived in urban areas (244), while 49 participants resided in rural areas (Figure 3).

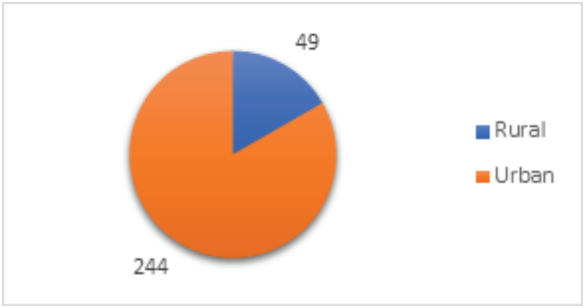

Figure 3: Residence type of participants

Table 1 displays the personal information of the participants. The largest group of participants (108) reported a monthly family income between taka 20,000 to 40,000 . A significant number of participants (90) reported an income between taka 40,001 to 60,000, while 45 participants had a family income between taka 60,001 to 100,000. The least represented income groups were those with incomes above 100,000 (10 participants) and those earning less than 20,000 (16 participants). Additionally, 24 participants preferred not to disclose their family income.

Table 1: Personal Information of the Participants

Variables	Categories	Count (*n*)
Monthly Family Income	20,000 to 40,000	108
	40,001 to 60,000	90
	60,001 to 100,000	45
	Above 100000	10
	Less than 20,000	16
	Did not share	24
Currently Living with Family	No	163
	Yes	130
Part-Time Employment	No	286
	Yes	7
Co- morbidities or Chronic Diseases	No	237
	Yes	56

A larger proportion of participants (163) reported that they were not living with their family, while 130 participants were living with their family. The vast majority of participants (286) did not engage in any part-time employment or earning activity, with only 7 participants reported that they were involved in such activities. The majority of participants (237) reported no co-morbidities or chronic diseases, while 56 participants had some form of chronic disease or co-morbidity. Among the participants with comorbidity, asthma was the most reported one. Academic information of the participants is presented in table 2.

Table 2: Academic Information of the participants

Variables	Categories	Count (n)
Perceived Academic Stress Level	High	108
	Low	2
	Moderate	131
	Very high	51
	Very low	1
Engagement in Extracurricular Activities	No	269
	Yes	24
Satisfaction Regarding Medical Education	Dissatisfied	11
	Neutral	69
	Satisfied	178
	Very dissatisfied	2
	Very Satisfied	33

The study revealed that most participants reported a moderate level of academic stress (131), followed by high academic stress (108) and very high stress (51). A very small number of participants reported low (2) or very low (1) academic stress. The majority of participants (269) did not engage in extracurricular activities, with only 24 participants involved in such activities.

Most participants were satisfied with their medical education (178), while 69 were neutral, and 11 were dissatisfied. A smaller number of participants were either very dissatisfied (2) or very satisfied (33). Information related to weekly physical activity of the participants is presented in Table 3.

The physical activity levels of participants varied across vigorous, moderate, and walking activities. A majority of participants (227) reported no vigorous physical activity, while 38 participants engaged in 1-150 minutes of vigorous activity. A smaller number of participants (19) reported 151-300 minutes, and just 5 participants engaged in 301-600 minutes. Only 4 participants engaged in more than 600 minutes of vigorous physical

activity each week. Similarly, in moderate physical activity, 232 participants reported no engagement, while 32 engaged in 1-150 minutes, and 13 reported 151-300 minutes. Twelve participants engaged in 301-600 minutes, with only 2 participants reporting more than 600 minutes per week. For walking physical activity, 145 participants did not engage in any walking activity, whereas 77 participants walked for 1-150 minutes. Forty-five individuals walked for 151-300 minutes, 19 walked 301-600 minutes, and 7 participants walked more than 600 minutes weekly.

Table 3: Physical Activity of the participants per week

Physical Activity per Week	Vigorous Physical Activity	Moderate Physical Activity	Walking
0 minute	227	232	145
1-150 min	38	32	77
151-300 min	19	13	45
301-600 min	5	12	19
More than 600 min	4	2	7

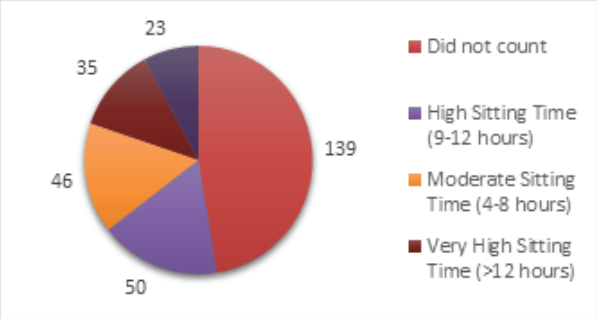

Figure 4: displays the daily sitting time of the participants.

The majority of participants (139) did not record their sitting time, but among those who did, 50 participants reported high sitting time (9-12 hours per day), and 46 participants reported moderate sitting time (4-8 hours per day). Thirty-five participants reported very high sitting time (>12 hours per day), while 23 participants reported low sitting time (<4 hours per day).

Table 4 presents the perceived physical fitness level of the participants. When assessing general physical fitness, a small proportion of participants (5) rated their fitness as very good, while 71 participants considered themselves to have good physical fitness. The majority (176) rated their fitness as average, and 30 participants reported poor fitness, with 11 participants indicating their fitness was very poor.

For cardiorespiratory fitness, only 8 participants rated their fitness as very good, while 52 rated it as good, and 171 reported average cardiorespiratory fitness. Fifty-two participants indicated poor cardiorespiratory fitness, and 10 participants rated it as very poor.

Muscular strength was rated by 9 participants as very good, 65 participants as good, and 185 participants as average. A smaller number (26) rated their muscular strength as poor, while 8 participants rated it as very poor.

In terms of speed and agility, 13 participants reported very good speed/agility, 79 participants rated their speed/agility as good, and 179 rated it as average. A total of 17 participants considered their speed/agility poor, while 5 participants rated it as very poor.

For flexibility, 13 participants rated their flexibility as very good, 67 as good, and 175 as average. Thirty-two participants reported poor flexibility, and 6 participants rated their flexibility as very poor.

Table 5 presents the IPAQ and IFIS scores of the participants who were used to define the physical activity levels and perceived overall physical fitness respectively. The IPAQ score provides an understanding of the participants' physical activity levels, categorizing them into various activity groups. A small proportion of participants, only 21, reported engaging in high levels of physical activity, indicating a relatively low number of individuals with high activity. In contrast, 59

Table 4: Level of perceived personal fitness across five domains

Level of Fitness	Categories of Physical fitness				
	General Physical Fitness	Cardiorespiratory Fitness	Muscular Strength	Speed/Agility	Flexibility
Very Good	5	8	9	13	13
Good	71	52	65	79	67
Average	176	171	185	179	175
Poor	30	52	26	17	32
Very Poor	11	10	8	5	6

participants were classified as engaging in low physical activity, representing a moderate level of engagement. A larger group, consisting of 81 participants, reported moderate physical activity levels, reflecting a more balanced level of activity. However, the largest group, 132 participants, reported no additional physical activity, highlighting a significant portion of individuals with little to no engagement in physical activity.

Table 5: the IPAQ and IFIS scores of the participants who were used to define the physical activity levels and perceived overall physical fitness respectively

Variables	Categories	Count
Physical Activity Levels (IPAQ Score)	High Physical Activity	21
	Low Physical Activity	59
	Moderate Physical Activity	81
	No additional Physical Activity	132
Perceived Overall Physical Fitness (IFIS Score)	Low perceived fitness	1
	Below-average perceived fitness	9
	Average perceived fitness	145
	Good perceived fitness	123
	Very high perceived fitness	15

The IFIS score provides valuable insights into how participants perceive their fitness levels, reflecting their self-reported health and fitness. A very small number of participants, only one, rated their fitness as low, indicating minimal self-perception of poor fitness. Nine participants considered their fitness to be below average, representing a small portion of the group with less favorable self-assessments. The majority of participants, 145 in total, rated their perceived fitness as average, suggests that most individuals view their fitness as neither particularly poor nor outstanding. A significant portion, 123 participants, reported a good level of perceived fitness, reflecting a positive self-assessment within this group. Lastly, 15 participants rated their fitness as very high, showcasing a small but notable group who view their fitness levels as exceptional.

Discussion

This cross-sectional study provides valuable insights into the physical activity levels, perceived fitness, and related factors among medical students. The results reflect a concerning trend of low engagement in vigorous physical activity, with 227 participants reporting no vigorous activity. Similarly, the data on moderate physical activity shows that 232 participants are inactive in this domain. These findings align with previous studies that have highlighted the low levels of physical activity in university students, particularly those in demanding academic programs.[12] A significant proportion of participants (132) reported no additional physical activity, which raises concerns

about the sedentary lifestyle prevalent among medical students. This lack of physical engagement is consistent with studies in other medical schools where students tend to prioritize academics over physical well-being.[13] Furthermore, the results indicate that while walking activity is relatively higher, it is still insufficient to meet the recommended physical activity guidelines, which is a common pattern observed in various educational settings.[14]

The findings regarding daily sitting time further reinforce the sedentary lifestyle of the participants, with 139 individuals not recording their sitting time and 50 participants reporting high sitting time (9-12 hours per day). This is concerning, as excessive sitting has been linked to various health problems, including cardiovascular diseases and musculoskeletal disorders.[15] These trends are consistent with global studies, which show that prolonged sitting is a growing health concern among students, especially those in academic settings that require long hours of study.[16]

Regarding physical fitness, the majority of participants rated their fitness as average, with 176 participants reporting average general physical fitness, cardiorespiratory fitness, and muscular strength. A relatively small proportion of participants perceived their fitness as very good (5 for general fitness and 8 for cardiorespiratory fitness). These findings are comparable to studies that report moderate levels of self-perceived fitness among medical students.[17] However, it is notable that a substantial number of students reported poor or very poor physical fitness, indicating potential concerns about their overall health and well-being. While academic pressure is known to negatively affect physical activity levels, the lack of time for exercise and high stress levels contribute to these unfavorable fitness perceptions.[18]

In contrast to the low levels of physical activity, a significant portion of participants reported satisfaction with their medical education (178 out of 286), suggesting that while academic pressures may contribute to physical inactivity, students still derive a sense of accomplishment from their studies. This contrasts with some findings where academic dissatisfaction has been linked to higher levels of stress and lower levels of physical activity.[17–19] Interestingly, very few participants reported very low perceived fitness, suggesting that despite the lack of physical activity, students maintain a reasonably positive view of their fitness, which might reflect a normalization of stress-related lifestyle patterns.

Finally, the results of the IFIS score indicate that the majority of participants perceive their fitness as average, with 145 reporting average perceived fitness and 123 perceiving themselves as having good fitness. These results emphasize the gap between actual and perceived fitness levels, a phenomenon that is often seen in populations where physical activity is not prioritized.[20] The discrepancy between actual fitness levels and self-perception highlights the need for targeted interventions that not only promote physical activity but also encourage students to realistically assess and improve their fitness.

Conflict of Interest: The authors declare no conflict of interest.

Conclusion

This study highlights significant concerns about the low levels of physical activity, high sitting time, and average or poor fitness perceptions among medical students. The results underscore the need for university programs to prioritize student well-being by promoting physical activity, addressing sedentary behaviors, and fostering healthier academic environments. Future research should explore interventions that integrate physical activity into the academic curriculum to improve both physical and mental health outcomes for medical students.

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