

# Gender Influences on Lifestyle Behaviors – A Cross-Sectional Study in the Public Sector Medical College of Abbottabad

Gender Influences on Lifestyle Behaviors

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## ABSTRACT

**Objective:** Medical students are not only the last but also the most important chance for instruction in the field of healthy lifestyles and eating habits. The goal of the study is to assess and compare the lifestyle of medical students.

**Study Design:** Descriptive Cross-Sectional Study

**Place and Duration of Study:** This study was conducted at the Ayub Medical College, Abbottabad from March 2022 to April 2022.

**Materials and Methods:** Socio-demographic profile, body mass index (BMI), eating habits, sleeping hours, activity hours, exercise, and substance addiction was recorded in the pretest questionnaire.

**Results:** In this study, 270 participants were recruited, among which 58% (157) were males and 42% (114) were females. The majority of males fell in the category of overweight (38%) and obese (18%) while in the underweight category majority were female. Low income, increased sedentary hours, waking up late in the morning, and hostel residency are the significant risk factors for males' overweight and obesity. Females significantly consume more fruits, legumes, milk, and fast food. 22% of individuals have clinically significant activity hours. The majority of males (10%) (15/156) have substance addiction while only 4% (5/114) of females use substance addiction.

**Conclusion:** Prevalence of pre-obesity and obesity is high among males. Regular consumption of healthy diets is low and there is a high rate of consumption of unhealthy foods among both genders. Activity hours are decreased in both genders while there is decreased prevalence of substance addiction as compared to medical students of other regions

**Key Words:** Body mass index (BMI), Gender, Dietary Habits, Activity hours

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## INTRODUCTION

The term Gender means a characteristic that a man or woman acquires through psychosocial or cultural influences while sex denotes the biological features that are determined by different physiology specific to man and woman. Gender behaviors are determined by the socio-cultural environment of a particular society so that a defined behavior may be considered in a different way i.e. masculine or feminine, depending on the cultural norms. A typical example is driving a car, which is considered a masculine feature in certain Muslim societies while it is considered neutral in the western culture<sup>1</sup>.

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Several epidemiological studies and clinical experiences indicate that different lifestyle behaviors are strongly related to different aspects of health. Especially, unhealthy diet and lack of physical exertion are the principal determinants in the etiology of non-communicable (NCD) diseases such as cardiovascular diseases, type 2 diabetes, and cancer<sup>2</sup>. These lifestyle risk factors are mostly acquired early in life and are influenced largely by the factors such as familiar, economic, educational, and social environments as well as by sex. Indeed, the risk of development of NCDs is strongly dependent on gender and sex-related determinants. Moreover, each individual has his own choices for certain foods determined by genetic background, hormonal features and levels, metabolic rates and personal metabolic pathways, and so on<sup>3</sup>.

The literature review reveals limited data discussing the gender-related differences in lifestyle behaviors of medical students in our country. The present study aims to obtain preliminary information regarding dietary detail, eating habits, and physical exertion among the medical students in the northwestern part of KP Pakistan which could form the basis for developing interventions and nutrition education programs that may help in improving the nutritional status of this important segment of the population.

## MATERIALS AND METHODS

This was a cross-sectional study conducted on male and female medical students (MBBS and BDS programs) studying at Ayub Medical College Abbottabad. The data was collected on a self-designed close-ended questionnaire. The time duration of the study was from March 2022 to April 2022. All the students, from first to final year were included and those who refused to participate voluntarily were excluded from the study. After obtaining informed consent and assurance of maintaining confidentiality, the printed questionnaire was handed over to each student to fill in the information regarding socio-demographic variables, anthropometric measurements, and data about dietary habits, physical exertion, and addiction. The data were analyzed in SPSS version 21.

### Definitions

- Underweight was defined as  $< 18.5 \text{ kg/m}^2$ , normal weight as 18.5 to 22.9, overweight as 23 to 24.9, and obese as  $\geq 25^4$ .
- Moderate exercise was defined as at least 150–300 minutes per week of moderate-intensity aerobic physical activity and strenuous exercise at least 75–150 minutes per week
- Sports activities like badminton and basketball were included in moderate-intensity exercise while running, playing cricket or football were included in strenuous exercise
- Sedentary hours mean no physical activity at all (excluding sleeping hours)
- Sleep hours: normal range 7.00 to 9.00 hours per 24 hours<sup>5</sup>.

## RESULTS

In the present study, about 300 students participated and only 270 met the inclusive criteria of this study (n=270).

**Table No.1: Showing Demographic Variables**

variables	Males (n=156)	Females (n=114)	Significance	
Age	22±1.6	21±1.5	0.76	
Height in meters	1.7±0.1	1.6±0.1	0.04	
Weight in kilogram	66±11	53±9	0.10	
Accommodation	Campus Hostel	83% (129)	61% (70)	0.000
	Out campus	4% (7)	2% (2)	
	Day scholar	13% (20)	37% (42)	
Monthly income	<75000(poor)	58% (90)	32% (44)	0.013
	1-2Lack(mid)	23% (36)	35% (40)	
	>2 Lack(rich)	3% (5)	7% (8)	
	Not mentioned	16% (25)	19% (22)	

**Table No.2: Showing Differences in Dietary Habits of Medical Students**

Variables		Male (n=156)	Females (n=114)	Sig
Break-fast	Regularly	65% (102)	67% (76)	0.107
	intermittently	26% (41)	31% (35)	
	Never	08% (13)	2% (03)	
Lunch	Regularly	86% (134)	80% (91)	0.42
	intermittently	13% (20)	18% (21)	
	Never	1% (02)	1.7% (2)	
Dinner	Regularly	92% (144)	81% (92)	0.00
	intermittently	5% (08)	19% (22)	
	Never	2.5% (04)	00% (00)	
Snack 1	Regularly	41% (64)	61% (70)	0.10
	intermittently	4% (06)	6% (07)	
	Never	55% (86)	32% (37)	
Snack 2	Regularly	39% (61)	47% (54)	0.27
	intermittently	13% (21)	15% (17)	
	Never	47% (74)	38% (43)	
Snack 3	Regularly	33% (51)	22% (25)	0.08
	intermittently	15% (24)	13% (15)	
	Never	52% (81)	65% (74)	
Vegetables	Regularly	12% (19)	6% (07)	0.21
	intermittently	80% (125)	8% (96)	
	Never	8% (12)	10% (11)	
Fruits	Regularly	5.7% (09)	19% (22)	0.00
	intermittently	85% (133)	76% (87)	
	Never	9% (14)	4% (05)	
Nuts	Regularly	5% (08)	7% (08)	0.50
	intermittently	92% (114)	76% (87)	
	Never	22% (34)	17% (19)	
Milk	Regularly	15% (24)	29% (33)	0.01
	intermittently	68% (107)	53% (61)	
	Never	16% (25)	18% (20)	
Carbo nated drink	Regularly	10% (15)	6% (07)	0.42
	intermittently	77% (120)	76% (87)	
	Never	13% (21)	17% (20)	
Bakrie's & sweets	Regularly	10% (15)	13% (15)	0.28
	intermittently	67% (105)	58% (66)	
	Never	23% (36)	29% (33)	
Fast food	Regularly	7% (11)	17% (19)	0.00
	intermittently	77% (120)	82% (94)	
	Never	16% (25)	01% (01)	
Fried food	Regularly	16% (25)	29% (33)	0.06
	intermittently	75% (117)	77% (88)	
	Never	9% (14)	2.6% (03)	
legume	Regularly	13% (20)	3.5% (04)	0.00
	intermittently	72% (112)	92% (105)	
	Never	15% (24)	04% (05)	

Participants were grouped into two categories based on their gender, details of socio-demographic variables are shown in the table 1 and the BMI of both genders is shown in the bar chart.

The detail of the different dietary habits of students is shown in table 2.

**Activities and Sleep Habits:** Moderate to strenuous exercise was done by 55% of participants while 45% of

participants were not doing any exercise. On a gender basis, 62% of males while only 44.77% of females were doing exercise with a significance of 0.000

The majority of the males did strenuous exercise (74%) followed by moderate exercise (25.7%). In females; half of them (50.9%) did strenuous exercise and another half (49.01%) did moderate exercise. The favorite exercise was cricket for males and running for females. Males were found to be more sedentary (62%) as compared to females (36%) with significance of 0.093. Males were found to sleep more (73.7% of males slept 7 to 9hrs) as compared to females (67.5% of females slept 7 to 9hrs). The early rising habit was found more in females (53% woke up early morning at 6:30 am) whereas only 35% of males woke up early morning; with a significance of 0.016.

**Drinking and smoking:** Substance addiction was admitted by 7.4% among which 10% (15) were male and 4.3% (5) were female. About the type of addiction in males 7males smoked, 5 used snuffs, 2 took alcohol and 1 used other substances for addiction while in females 3 of them smoked, and 2 used alcohol as a substance addiction.

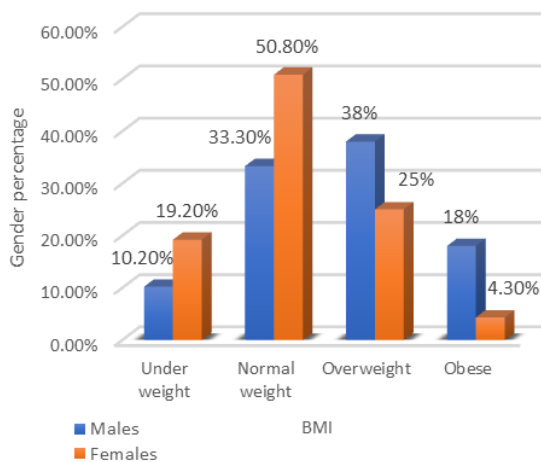


Figure No.1: BMI of Male & Female Students

## DISCUSSION

The study presents qualitative and intrinsic features of BMI, dietary habits, financial status, and substances abused among medical students. Simultaneously, a comparative study determines gender differences in diet, attitude toward healthier activities, and addiction.

According to the present study, the prevalence of overweight and obesity among medical students is higher than previously reported by Ahmed U et al<sup>6</sup> and Rafique S et al<sup>7</sup>, but the results are in premises with the study done in Lahore by Khan et al<sup>8</sup>. Males are significantly more overweight and obese than females, which is also in accordance with the study conducted in Pakistan by Jamshed S et al, Sajwani RA et al, Khan ZN et al<sup>8,9,10</sup>, and studies done in different geographic areas (Greece). M. C. Chourdakis et al<sup>11</sup>. In our study,

several significant factors determine the cause of overweight in males. When these factors were compared with previous studies, most of them were found to be linked with obesity among medical students. Males' poor financial status<sup>12</sup>, increased sedentary hours<sup>13,14</sup>, waking up late and skipping breakfast<sup>15</sup>, hostel campus residency<sup>10,15</sup>, and decreased activity hours were all factors. A study conducted in Karachi in 2008 by Nisar N et al.<sup>12</sup> states that students with low income have a tendency to become overweight, but the difference in this study was not significant. According to a recent study conducted in both the private and public sectors, Asghar A et al<sup>13</sup> states that the median sedentary hours in medical students is 7.4 hrs. (range 6 to 12 hrs.) This significantly contributes to a sedentary lifestyle among medical students. A majority of males (62%) were waking up late in the morning and were skipping breakfast, which is considered an unhealthy dietary practice associated with obesity<sup>14</sup>. According to Jamshed S. et al<sup>10</sup> and Kabir A et al<sup>15</sup>, the majority of males live in hostels, and hostel-dwelling students are more obese than those who live with their parents. The results of underweight individuals are almost consistent with Ahmed U et al<sup>6</sup> and Rafique S. et al<sup>7</sup>. Females are found to be more underweight than males because females are more conscious about their body appearance. N. Nisar et al<sup>12</sup>.

The three-time meal pattern was regular in both genders; females were slightly more regular, but the difference is not significant. Breakfast is the most frequently overlooked meal<sup>9,11</sup>. Unhealthy dietary practices were observed in medical students<sup>13</sup>. A decreased daily intake of healthy foods like vegetables, fruits, legumes, and milk was observed<sup>9,11</sup>. The figure for students having decreased healthy food is quite higher than that reported by a study done in Greece<sup>11</sup>. This might be due to the poor financial status of our students and the expensive healthier food, as among those who have never had milk, 26 are poor ( $p = 0.04$ ), and among those who didn't eat fruits, 12 were poor ( $p = 0.02$ ), and among those who had never eaten nuts, 32 are poor ( $p = 0.004$ ). It was also observed that more than two-thirds of students consumed unhealthy foods like snacks, fried foods, fast foods, carbonated drinks, and baked goods<sup>12</sup>. Many studies had found that individuals who used to eat fast food consumed much fewer healthier foods, such as wheat, legumes, grains, milk, etc. Alfawaz HA et al<sup>17</sup>. Al-Rethaiaa AS et al<sup>18</sup>. When the dietary habits of both genders were compared, a significant difference was noted in the use of fruits, legumes, and milk. Females consumed a significantly higher amount of fruit, legumes, and milk as compared to males. The reason for this could be the status of accommodation, as the majority of males resided in hostels, where they faced a lack of readily available fresh food and financial constraints. The

majority of females, on the other hand, were day scholars and consumed healthier foods as compared to males probably because they had easier access to getting healthy food in their home setting. The female gender also prefers more fast food as compared to the male gender. The reason for this can be taste Sajwani, RA et al<sup>29</sup>. A study from Faisalabad and an Asian study also reported high consumption of fast food in females, according to Tariq Set al. and Saha S, et al<sup>16,19</sup>. It was observed that 55% of individuals exercised regularly, almost equal to the 48% reported by Asghar A et al.<sup>13</sup>, but when corrected by calculating activity hours, only 18% had considerable activity time > 0.5 to 1 hour and only 4% have activity time > 1 hour. This is quite lower than that reported by Khan ZN et al<sup>8</sup>. Nisar N. et al<sup>12</sup>. Males (62%) did exercise more regularly than females (45%), but only 27% of males had considerable activity as compared to females (15%) ( $p=0.03$ ). The reasons could be a lack of availability of female walking tracks, sports related indoor and outdoor facilities, and cultural norms curtailing the female gender's ability to go outside. When addiction habits were viewed, it was found that 7.4% (20) used substance addiction as compared to Sajwani RA et al.<sup>9</sup>, which states 12.9%. The majority of them (75%) were males. Being the primary breadwinner in Asian society, males are subjected to additional pressure in terms of family expectations<sup>20</sup>.

## CONCLUSION

The study suggested that medical students were practicing unhealthy dietary habits. Regarding gender differences, males were more overweight and obese, and they had poor dietary habits. They woke up late in the morning and had prolonged sedentary hours. Healthy food consumption was not up to the mark for both genders. Males consumed fewer fruits, legumes, and milk than females. There was increased use of fried food, fast food, and bakery items in females. Activity hours were also reduced in both genders while there was a decreased prevalence of substance addiction as compared to medical students of other regions. Keeping this result in mind we concluded that medical students require comprehensive diet and physical fitness planning and counseling at college and university levels. This will improve community health and wellness.

### Author's Contribution:

Concept & Design of Study: Abdul Rauf  
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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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