

Impact of Eating Habits on Academic Performance among 4th year Medical Students of a Private College in Faisalabad

Muhammad Ali, Maira Aslam, Faizan Ali, Uzma Sagheer

Abstract

Objective: This study was designed to determine the relationship between eating habits and academic performance among medical students of Aziz Fatimah Medical and Dental College.

Study design & Setting: A comparative cross-sectional study was being conducted

Methodology: After the permission of the Ethical Research Committee of the institution. Students of 4th year MBBS was recruited by simple convenient sampling. A validated questionnaire consisting of 14 questions in reference to eating habits was used. Statistical analysis was done by SPSS version 24 and a one-way ANOVA test was used and p value of = 0.05 was considered statistically significant.

Results: Study was conducted on 100 medical students with mean age of $22.67 \pm .554$. Out of 100 participants 51 (51%) were male and 49 (49%) were female students. It was observed that good eating habit score was associated with high academic achievements. While, a bad eating habit score was associated with low academic achievements.

Conclusion: It was concluded from our study that there was a significant association between good eating habits and academic performance.

Key words: Academic Performance, Eating Habits, Medical Students

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INTRODUCTION:

A healthy diet is indeed a cornerstone of healthy way of living. For the rise in health quality and fall in illnesses related to obesity, one should obtain proper nutrients and have sufficient knowledge and attitudes concerning nutrition. Adopting a healthy lifestyle is associated with the development of healthy dietary patterns. Nutrition plays a crucial role in the context of dietary habits. An adequate and proper diet is fundamental to maintaining good health. The health of individuals is considerably influenced by various factors such as lifestyle, dietary patterns, and inadequate nutrition.¹

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Academic performance is the term used for knowledge accession, obtainment of skills and competencies, gaining good marks, choosing a liberal career, persistency, and aim for good education. Educational attainment influences their future-related achievements, well-being, and health. Studies show that healthy dietetic behavior and practices are fundamental aspects that can predict undergraduate performance in academics.² World Health Organization stated that healthy eating habits should include balanced calories in and out, restricting salt, sugar and consumption of fat with a change from saturated to unsaturated fats, and by removing trans-fatty acids from your diet. Eating habits in any population indicate the general well-being and magnitude of their risks for contracting lifestyle disorders like obesity, Type – II diabetes mellitus, dyslipidemia, hypertension, and coronary heart disease; collectively forming the leading cause of mortality all over the world.³

A healthy diet involves grain cereals, organic products, vegetables, and fruits and can prompt better mental capacity, further development of memory, best grades on tests, and better college presence, prompting a generally better performance of students academically.²

Academic performance is influenced by number of variables like school or college measures (i.e., parent's education level, financial status, and educational attitudes).⁴ Healthy eating habits development is very essential for prevention of diseases as well. Medical college students are at risk to develop unhealthy eating habits when they join medical

college. It also showed that obesity was significantly more prevalent among male participants than among females even though males were more physically active. World Health Organization (WHO) has recognized unhealthy lifestyles as a major cause of illness, mainly non-communicable diseases, and death.⁵ Various studies showed that healthy eating habits an important feature for better undergraduate academic performance.⁶ In addition to unhealthy behaviors, the process of transition to college is usually accompanied by additional stress for students. Stress stemming from college life can affect the academic performance of students, which may subsequently influence their futures post-graduation.⁵ Students with good eating habits perform better in their examination than those who do not. In the same way, nitrified students had better academic performance than malnourished students.²

The dietary habits and nutrient composition, over a long period of time, exert beneficial or adverse effects on cognitive ability.³ Medical lives is fundamental phase for students as this is time when their attitudes are vulnerable to change. University and college platforms is consequently, showed an important chance for gaining a healthy nutritional education.⁷ Medical students hoped for to act and set an example for their colleagues in reference of healthy eating patterns application however medical students have sufficient knowledge about healthy eating habits; but practice of this knowledge is not established. One reason is that medical education is very challenging programs, both academically and emotionally.⁸

The college life pressure and medical studies causes a negative effect on their eating habits. They tend to follow an erratic lifestyle behavior such as unhealthy eating habits, skipping meals, inadequate intake of nutrients, irregular sleep, and physical inactivity.³ Medical students' eating habits are sporadically studied in the literature and few literatures is accessible in our country in respect to eating habits on the academic performance of medical students.³ University students are more exposed to new individual and environmental influences. This transition period is considered as a risky life phase because it's characterized by changing in physical and social status as well as changing in the lifestyle that will affect the eating behavior of students. A study conducted in Czech Republic indicated that the exams period would change student's eating behavior to less healthy diet leading to poor academic performance.⁹ another study showed a relation between dietary habits and academic performance and found a positive association with regular breakfast and frequent consumption of vegetables, pulses, and fruits and a negative relation with fast food.³

Many studies have confirmed that students taking a healthy breakfast and a good and healthy diet perform better in their academic achievements. They concluded a straight association between healthy dietary habits and improved school performance Many studies have confirmed

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METHODOLOGY:

A comparative cross sectional study was being conducted at Aziz Fatimah Medical and Dental College Faisalabad after the permission of Ethical Research Committee of the institution. The study was continued for 1 month from June to July 2023. Students of 4th year MBBS in the AFMDC was recruited in this study. Non probability simple convenient sampling was used and consent of all students was done. Allied Health Sciences, Nursing, and Doctor of Physical Therapy, MBBS 1st, 2nd, 3rd & final year students were excluded from this study. Students were divided into three groups depending upon their academic score in university professional examination (high achievers, mediocre & low achievers). Eating habits information including meal regularity consisting of pulses, vegetables and fruits, number of dine out and fast-food consumption was gathered. A pretested self-administered questionnaire consisting of 14 questions in reference to eating habits was used each answer was given a score of one, two, or three for bad, moderate, or good dietary practice respectively. Students were classified into three groups depending upon their eating habit score student having score of 28 was categorize as well, moderate are those with score between 14- 28, and bad with score less than 14. Whole 4th year class was included in this study. Statistical analysis was done by IBM SPSS version 24. Shapiro- Wilk test was applied to check the normality of data and data was found to be normally distributed both for eating habits and academic performance of the students. Frequency and percentages were used for categorical

variables. To find out an association between the eating habits (good/ moderate/bad) with their academic performance (marks obtained in exams) a one-way ANOVA test was used with $p = 0.05$ was considered significant.

RESULTS:

This study was designed to explore the association between eating habits and academic performance among 4th year medical students of Aziz Fatimah Medical and Dental College. Study was conducted on 100 medical students with mean age of $22.67 \pm .554$. Out of 100 participants 51 (51%) were male and 49 (49%) were female medical students. 20 were hostilities and 80 were day scholar. This also showed that out of 100, 65 belonged to urban and 35 to rural population.

Table 2 showed when we compare eating habits of gender with modes of accommodation a strong association between eating habit scores ($P=0.032$) and accommodation mode was recorded ($P=0.022$).

Comparison between eating habits of hostellers and day scholars showed that day scholars scored well (with an

average score of 30) as compared to hostellers (average score of 26). The reason is mainly due to the day scholars, residing with their parents at home, maintaining a healthy diet and enjoy good nutrition.

It was also observed that good eating habit score was associated with high academic achievements. While, a bad eating habit score was associated with low academic achievements among students. It also showed that students having good eating habits scored 725/1000 and with moderate eating habits scored 650/1000 and lastly with bad eating habits scored 510/1000 in their final professional examinations of the university.

This table showed that marks obtained by female medical students statistically significant with good eating habit scores ($P=0.0025$). In overall students it is also statistically significant with ($P=0.0423$) and in male medical students ($P=0.0321$) as well.

DISCUSSION:

Nutrition is a necessary modifiable factor that is related to cognitive abilities, which in response affects academic performance of the students. Socioeconomic status as well as health-related attitudes of an individual is highly influenced by academic performance.¹⁰ Eating habits are a major concern with regard to the health status of university medical students. Medical students passing from schools to universities practice difficulties holding to healthy eating habits due to deficiency of time and stress of study, instead they skip meals, eat unhealthy foods and prefer fast food. Students usually choose fast food due to its availability, taste, convenience, and low costs.^{11,12} A Malaysian study also found that 73.5% of medical students consumed fast food more than two times per week.¹¹ keeping in view, this comparative cross sectional study was conducted at Aziz Fatimah Medical and Dental College Faisalabad to explore the relationship between eating habits and academic performance among medical students.

This study results showed that female medical students had better diet (having an average eating habit score of 28) compared to male medical colleagues (average eating habit score of 24) which was highly significant ($P=0.025$). Our findings were coinciding with a similar study as female medical students have a greater ability to maintain health than male medical students.¹³

When we compare academic performance of students with their eating habits a significant association was also observed. This is also found in another study it appears clear that a food intake rich in fruits, vegetables, starch, poultry, water, and to some extent, meat is beneficial for good mental and intellectual functioning. On the other hand, the predominance of consumption of fast sugars is linked to poor cognitive performance studied.¹⁴ another study conducted in Bangladesh showed the same results of eating habits with academic performance.⁷

Table 1: Demographic status of the participants

Age in years	Frequency	Percentages
20-21	04	4
22-23	62	62
24-25	32	32
>25	02	2
Total	100	100
Residency		
Urban	65	65
Rural	35	35
Total	100	100

Table 2: Eating habits score comparison with demographics

	Dietary Habit Score (Median \pm IQR)	p-value
Gender		
Males	28 \pm 11	0.032
Females	27 \pm 10	
Accommodation		
Day Scholar	31 \pm 9	0.022
Hostel lite	27 \pm 8	
Overall	29.5 \pm 7	

Table 3: Association of eating habits with marks obtained in final examination in relation to gender

	Good (Mean \pm SD)	Moderate (Mean \pm SD)	Bad (Mean \pm SD)	p-value
Male	705 \pm 28.07	615 \pm 25.06	505 \pm 35.03	0.0321
Female	712 \pm 18.29	635 \pm 27.07	525 \pm 31.07	0.0025
Overall	725 \pm 18.40	650 \pm 25.05	510 \pm 33.24	0.0423

This study showed that good score in eating habit score was related to high levels of academic performance. In contrast, a low eating habit score was related to low levels of academic performance. The results of this study were also found in another study carried out in India.¹⁵ It is also evident in other study conducted among students showed a positive association of good eating habits and academic performance with highly significant p value. They also observed that breakfast consumption had a positive effect on academic performance, while fast food consumption had a negative effect.^{16,17} another study conducted in Germany, their results showed that healthy eating habit had strong positive impact on better academic performance of medical students.¹⁸ in contrast to these results, a study showed weak association between dietary habits and academic performance with non-significant p value.¹⁹

We also spotted that eating habits were also influenced by gender as female students having good eating habits performed excellent than their male colleagues, which is consisted with the results shown by few earlier conducted studies.³ This was also similar to a study conducted in Kuwait where female students have high academic score.^{5,18} Another study showed that female students scored better than male students having good eating habits.¹¹ In contrast to this a study showed that male students performed better than male students.¹⁹ however a study also revealed that both male and female students have same results where academic performance was positively correlated with a good diet with $p = .002$ and also academic performance was negatively correlated with a bad diet $p = .032$ ^{20,21}

A study conducted in Poland showed that the diets of the males exhibited a significantly higher intensity of adverse health traits compared to those of the females' $p = 0.002$, but they did not differ in terms of the intensity of the beneficial health features. The analysis of eating habits showed that the students usually consumed 3–4 meals a day. The males ate meals at fixed times more often than the females ($p = 0.012$).²²

Healthy dietary 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 champion health promotion opportunities for their patients. The findings of the study indicate that the knowledge and practice of these students regarding healthy diet and nutrition does not bode well.²³

A study conducted in Palestine showed that in both boys and girls, high academic achievement was associated with a high intake of fruits and vegetables and low intake of soft drink, beverages (juice with sugar) and energy drink.²⁴

Some of the limitation that was encountered in this study was that the eating habits were assessed by recalling which has strong risk of misreporting consumption. As we analyzed e frequencies of food intakes, the exact amount of food

intake cannot be measured. Additionally, as we obtained data only in relation to types of foods and amount of nutrients was not calculated, quantification of nutrients amount was not possible.

CONCLUSION:

It was concluded from our study that there was a strong association between good eating habits and academic performance. More research is needed to enhance strategies for positive attitude change among medical students in relation to good eating habits.

Authors Contribution:

| Muhammad Ali: Design

| Maira Aslam: Design

| Faizan Ali: Design

| Uzma Sagheer: Conception, design, analysis, interpretation

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