



Original Article

Association between Academic Stress and Eating Patterns among University Students

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ABSTRACT

The enhanced prevalence of symptoms of anxiety, stress and depression among university students is of great concern. Stress and lack of time due to studies puts students' health and wellbeing at risk and the most concerning factor is how their eating patterns are being affected.

Objective: To assess eating patterns and compare its association with stress among university students. **Methods:** A cross-sectional study was conducted in different universities of Lahore from September 2022 to December 2022. Data had been collected from 100 students by using non-probability convenient sampling, with the help of a self-constructed questionnaire.

Results: Almost 70% students reported that they have one meal a day while most 2% students had 2 meals a day and 28% students had 3 meals a day under academic stress (p-value = 0.031). Approximately 61% students were having late night meals more than 2 times a week under educational pressure (p-value = 0.028). Around 68% students were missing their breakfast more than 2 times a week while worrying about the examinations (p-value = 0.03). Nearly 59% students were forgetting to take proper meals due to stress of exams preparation (p-value = 0.037). Almost 43% students were caffeine dependent due to academic stress. **Conclusions:** There is a significant link found between change in eating patterns due to the academic stress and pressure among university students.

INTRODUCTION

Stress is defined as any sort of physical, emotional or psychological strain. Our general well-being is greatly influenced by how one can handle stress. Every student has low points; it's a normal aspect of development, especially for university students. Though it is alarming when these feelings persist for a longer period of time [1]. However, academic stress is the type of stress that is induced by the continuous pressure about studies or anything related to academics that is either socially imposed or self-imposed, which can deplete the psychological reserves of a student [2]. The enhanced chances of symptoms of anxiety, stress

and depression among university students are of great concern [3]. Although every country spends a considerable amount of money on education, it is noted that students face some serious challenges which include; work pressure, the demand for academic brilliance, difficult competence and the struggle to define one's personality [4]. There has been no notable difference found between eating behavior and stress based on ethnicity or gender [5]. However, university students under stress conditions have altered eating habits like either they eat too quickly or they leave food in their plates, they eat food even if they are not

hungry or they keep munching on desserts and most of the times they skip meals [6]. Dietary patterns are defined as the variety, combinations or quantity of various foods and beverages in meals/diet and how frequently they are consumed [7]. While not everyone will experience stress in the same way on their bodies [8]. Some students skip meals because they do not have time to eat and majority of those who report skipping meals due to stress say that it is due to lack of appetite, while other students overeat as a coping mechanism for stress, and the majority of them view this behavior as a habit. Some individuals claim to feel disappointed in themselves, awful about their bodies, lethargic, or indolent after overeating or consuming unhealthy meals [10] Students with higher stress levels also tend to consume more sweet foods than the others [9]. It is also evident that grading pressure among the university students can lead to bad choices of food consumption [11]. Most people eat four to five meals each day normally, including with snacks [12]. However, researchers have found an association between stress and eating patterns [13]. A study was done by Al Jaber *et al.* at the College of Medicine, Al-Imam Muhammed Ibn Saud Islamic University, Saudi Arabia in the year 2019. This study analyzed what effect the academic stressors had on eating habits of the students of medical department in Riyadh, Saudi Arabia. This study was designed to assess the eating habits patterns and its relationship with stress faced by medical students. The sample included 105 male students. Data collection was done in the form of questionnaires. The results of the questionnaires concluded that freshmen had greater levels of stress than others, the abundance of fast-food restaurants results in a greater chance of students making unhealthy food choices and that students with higher levels of stress were more probably the ones to consume unhealthy foods than the ones with lower levels of stress [14]. Another study done by Caso *et al.*, in the year 2020 in Italy aimed to find a significant association between unhealthy eating patterns and stress. The subjects of this study were 574 Italian undergraduate students. Different scales were used to assess the stress levels and the eating patterns. The results of this study concluded that the consumption of unhealthy foods increased among the students with increased academic stress [15]. The purpose of conducting this research was to find out how stress affects university students, in what grade of stress condition they fall into and to know the association between being stressed and their eating patterns.

METHODS

A cross sectional study was conducted in University of Lahore, Lahore School of Economics, University of Management and Technology and Punjab University for a

time period of 4 months from September 2022 to December 2022. Data were collected from 100 students by using non-probability convenient sampling technique. Data were taken with the help of self-formulated questionnaire approved by professionals. Data were analyzed and tabulated by using SPSS. Quantitative variables were analyzed by using standard deviation and mean values while qualitative variables were analyzed using frequencies and percentages.

RESULTS

Table 1 indicates that out of 100 participants, 26% were male and 74% were females. Majority of participants were females. Approximately 78% participants were belonging from urban areas while 22% were from rural areas. Almost 7% participants belong from low, 69% from middle and 24% from high socio-economic status.

Table 1: Demographical distribution

Gender	Male	26%
	Female	74%
Residential location	Urban	78%
	Rural	22%
Socio-economic status	Low	7%
	Middle	69%
	High	24%

Out of 100 participants, 27 moderately stressed participants took one meal a day, 2 high stressed participants took two meals a day, 9 moderately stressed took three meals a day under academic stress. There is a significant association between number of meals a person has in a day under academic stress while worrying about examinations as the significance value was p -value < 0.05 (0.03) as shown in Table 2.

Table 2: Association between the numbers of meals taken in a day by students while worrying about the examinations

Meals taken in a day when under academic stress	Worry about the examinations					Total	p-value
	No Stress	Slightly stressed	Moderately stressed	Highly stressed	Extremely stressed		
1 meal	1	12	27	19	11	70	0.031
2 meals	0	0	0	2	0	2	
3 meals	4	8	9	3	4	28	
Total	5	20	36	24	15	100	

Out of 100 participants, 18 moderately stressed participants forgot to have meals while studying, 15 slightly stressed participants did not forget to have meals while studying or working on an assignment while worrying about examinations. There is a significant association between people forgetting their meals under academic stress while worrying about the examination as the significance value was p -value < 0.05 (0.03) as shown in Table 3.

Table 3: Association between students forgetting their meals under academic stress while worrying about the examination

Forgetting to have meals while studying or working on an assignment	Worry about the examinations					Total	p-value
	No Stress	Slightly stressed	Moderately stressed	Highly stressed	Extremely stressed		
Yes	2	10	18	12	17	59	0.037
No	3	15	8	11	4	41	
Total	5	25	26	23	21	100	

■ Moderately stressed ■ Highly stressed

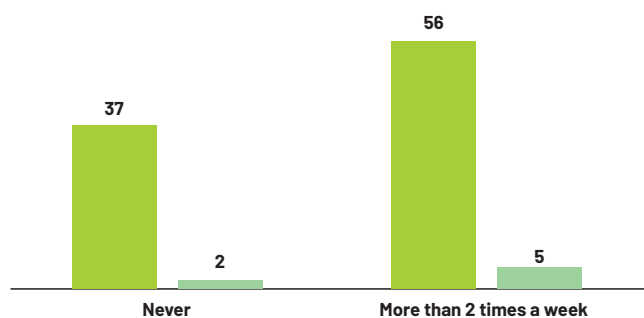


Figure 1: Association between students eating late at night under academic stress while preparation for examinations

Figure 1 shows that out of 100 participants, 37 moderately stressed participants never ate late at night, 56 slightly stressed participants ate more than two times a week late at night during 11th hour preparations while worrying about examinations. There is a significant association between people eating late at night (in 11th hour preparations) under academic stress (exams, assignments) while worrying about the examination as the significance value was p -value < 0.05 (0.028). Out of 100 participants, 26 high stressed participants skipped breakfast two times a week, while 60 high stressed participants skipped breakfast more than two times a week under academic stress. There is a significant association between breakfasts being skipped in a week under academic stress (exams, assignments, projects etc.) while worrying about examinations as the significance value was p -value < 0.05 (0.03) as shown in Table 4.

Table 4: Association between breakfasts skipping by students under academic stress while worrying about examinations

Skipping of breakfast when under academic stress	Worrying about the examinations			Total	p-value
	Slightly stressed	Moderately stressed	Highly stressed		
Less than or 2 times a week	3	3	26	32	0.03
More than 2 times a week	0	8	60	60	
Total	3	11	86	86	

Out of 100 participants, 43 depended on caffeine while studying for extra hours while 57 are not dependent as shown in Figure 2.

Caffeine Dependency

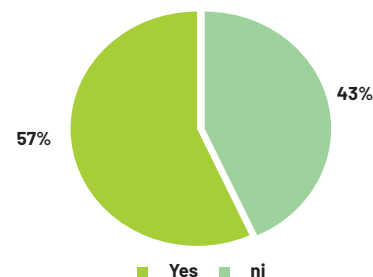


Figure 2: Distribution of caffeine dependency among university students under stress

DISCUSSION

The purpose of this study was to investigate the association between university student's eating habits and their academic stress. The result showed that examinations were the main source of stress. This was relatable to other earlier studies or researches that found students were under stress due to their inability to perform efficiently and effectively in exams. As results of this study stated 32% students had their breakfast less than or 2 times a week while 68% students had breakfast more than 2 times a week out of which 86% students were have high levels of stress due to examinations. However, one of the literature studies conducted on the medical students of Ghana has reported that 71.92% of the students' skip breakfast due to their academic routine [16]. Another study conducted in Indonesia to determine the association between academic stress and eating habits influenced by emotions in adolescents. A cross-sectional approach was used in this work. The data analysis showed that 47.4% of participants reported academic stress of moderate level, whilst 51.1% of participants suffered from emotional eating [17]. In this study, it is found that under academic stress 51% students forget to have meals during studying or preparing for exams. Whereas, a study conducted in Korea showed that 53% of students tend to forget having meals and they were low on dietary intake due to academic strain [18]. The results of current study concluded that 93% students were moderately stressed due to examinations out of which 61% students were taking late night meals more than 2 times a week. A study conducted online by Cornell University stated that almost 53% of the students had snacks late at night and they ate mostly junk food while the others didn't snack late at night at all [19]. The results of this study have shown that almost 43% students were dependent on caffeine under academic pressure while the other 57 were not. On the other hand, according to a cross-sectional study conducted by Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia to check the prevalence of caffeine intake among undergraduates, they concluded that about 63.8% students were addicted to caffeine due to

educational stress [20].

CONCLUSIONS

Academic stress and exams pressure is a very common concern among university students that poorly influence their overall eating habits and health. However, it has been proved that there is a significant change in the eating patterns of university students under the condition of academic stress especially during examinations. Majority of the participants had a decrease in the number of meals, often skipped breakfast, caffeine dependent and ate late at night due to academic pressure.

Authors Contribution

Conceptualization: LM, MA

Methodology: FJM, IA

Formal Analysis: MA

Writing-review and editing: M I, NAS, OW, WT, ZZ

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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