

Research Article

Association of Perceived Stress and Symptoms of Depression with Eating Patterns among Students in a University in Delhi: A Cross-sectional Study

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A B S T R A C T

Introduction: The most common health problem among university students is stress and hence a few symptoms of depression are quite frequently observed among them. Depression can negatively affect one's ability to work, study, eat, sleep and even enjoy life.

Objective: To assess perceived stress, depressive symptoms, and eating patterns among college students and to assess the association of eating patterns with depressive symptoms and perceived stress

Methodology: The current cross-sectional study was conducted for college students who were studying in eight different departments of Jamia Hamdard, Delhi from October 2021 to February 2022. The sample size was 183. PSS was used for the assessment of stress and depressive symptoms were assessed using BDI.

Results: The study findings revealed that more than half of the college students (66%) were found to have a moderate level of perceived stress while 29% had low perceived stress and only 5% of the students had high perceived stress. Most of the college students (56%) had minimal depressive symptoms, 19% had mild depressive symptoms, 12% had moderate depressive symptoms, and 13% had severe depressive symptoms. It was also seen that 95% of college students had unhealthy eating patterns and only 5% had healthy eating patterns. The present study revealed a significant association between eating patterns and perceived stress. There was no statistically significant association between the eating patterns and depressive symptoms.

Conclusion: From the above observation, we concluded that a great number of students were following an unhealthy eating pattern and a healthy eating pattern can reduce the level of perceived stress among college students.

Keywords: Perceived Stress, Depressive Symptoms, Eating Patterns, College Students

Introduction

The most common health problem among university students is stress and thus a few symptoms of depression are quite frequently observed among them. From entry into college to end-semester examinations, college life is indeed full of stressful events for a few students. In addition, university students, regardless of their academic disciplines, are at risk of depression, stress, and other psychiatric symptoms as university and college students experience stress for various reasons, including academic pressure and adjusting to heavy workloads.¹ Many events or thoughts can raise a person's stress level, such as experiences that make them feel frustrated, angry, or anxious,² whereas, depression is more than just sadness brought on by life's challenges and setbacks; it changes the way you feel, think and behave daily. Depression can negatively affect one's ability to work, study, eat, sleep, and even enjoy life. An individual with depression exhibits a variety of symptoms including insomnia, eating disorders, poor concentration, anxiety, and lack of interest in everyday activities.³

An investigation conducted in 2017 found that people with moderate-to-severe depression were significantly less likely to experience psychological symptoms once they received dietary counselling sessions and ate a healthy diet for 12 weeks. Diet improvements focused on fresh, nutrient-rich whole foods. Foods that are processed, refined, sweet, or fried, including junk food, have also been restricted. Over 32% of participants experienced enough improvement in symptoms of depression to meet the criteria for remission. The researchers concluded that being thoughtful of diet can help people control or improve their symptoms.⁴

Higher education has paid a lot of attention to mental health in recent years because the college years represent a time of heightened vulnerability to mental health problems. Stress and anxiety are a part of college life. The transition from disciplined and sheltered school life, peer pressure, and study stress can trigger depression in students.

It is no surprise that based on studies conducted previously, student burdens were positively associated with higher depressive symptoms, moreover, perceived stress can also be mediated directly.⁵ As a result, stress can negatively affect health both directly and indirectly. One way in which stress can impact health is by influencing what people eat. Despite the significant impact of a healthy diet on overall long-term health, many college students adopt bad eating habits, such as behaviours like skipping meals due to stress and depression. During COVID-19, people, especially college students, undergo a lot of stress due to various reasons and this may be linked to their eating patterns as well, that's why the researcher wanted to conduct this study.

One of the tips given by the "University of Carolina" at Chapel Hill stated that eating healthy meals can manage

stress and depression. Choosing healthy food and limiting fried, processed food, and fast foods can prevent college students from developing symptoms of depression and stress.⁶

When stressed, some people ignore hunger while others have an increased appetite. A person's eating habits can affect both the stress response and mental well-being. The present study aims to assess the association of eating patterns with perceived stress and symptoms of depression. It has been suggested that psychological stress changes dietary patterns towards less healthy options. There's a lot of truth behind the term "stress-eating." Stress forces people to change their eating habits and this has led to the association of weight gain with stress.

Materials and Methods

Study Design

This cross-sectional study was conducted among the students of Jamia Hamdard, Delhi. After obtaining formal administrative approval to conduct the final study, data collection was done from October 2021 to February 2022. Informed consent was obtained from all participants. The researcher adopted a quantitative research approach for this study. The purpose of using this approach was to investigate the possible association between the selected variables. To reach the goal of this study, a purposive sampling technique was used for the selection of participants.

Study Setting and Sample

RAO Soft calculator was used to calculate the sample size based on the university student population of about 4,636. The minimum sample size required for this study was 350 students based on a 95% confidence level and a + 5% margin of error, but due to resource constraints, the sample size was reduced to 183.

Eight different departments of Jamia Hamdard were approached for data collection but due to the outbreak of COVID-19, there was the unavailability of students. Hence the data was collected through Google Forms, and all students were approached via e-mail/ WhatsApp.

Ethical Consideration

Anonymity and confidentiality of the students' information were assured to all the subjects. The Institutional Ethics Committee of Jamia Hamdard gave the ethical clearance.

Description of the Tools

Variables of this study were perceived stress, symptoms of depression, and eating patterns. According to the objectives of the study, a tool was structured to measure demographic variables (age, gender, dietary preference, daily activity, screen time, number of meals in a day, height and weight in kilograms).

Perceived Stress Scale

Perceived stress scale (PSS) was used for the assessment of stress. It was designed to measure respondents' feelings of unpredictability, uncontrollability, and overload. A number of direct questions about stress levels were also included on the scale. To calculate PSS scores, the responses to the four positively stated items (items 4, 5, 7, and 8) were reverse (0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0), and then the sum of scores across all items was calculated. It is possible for an individual to score between 0 and 40, where higher scores indicate more perceived stress. Scores between 0 and 13 show low perceived stress, those between 14 and 26 show moderate perceived stress, while those between 27 and 40 show high perceived stress.⁷

Beck Depression Inventory

Beck Depression Inventory (BDI), a self-rating scale, was used to assess the symptoms of depression. It assesses key symptoms like mood, pessimism, sense of failure, etc. A scale of 0 to 3 is used to score the responses. A total of 21 questions are included, with each answer being scored between zero and three. A higher total score indicates more severe symptoms of depression. Scores in the range of 0–13, 14–19, 20–28, and 29–63 indicate minimal depression, mild depression, moderate depression, and severe depression respectively.⁸

Structured Rating Scale

Another structured rating scale was developed to assess the eating patterns of college students. It consisted of 35 items. The items were rated using a five-point Likert scale.

Scoring of the responses was done as follows: never - 1, seldom - 2, sometimes - 3, often - 4, and almost always - 5. The possible range of scores for the rating scale was from 0 to 145. Scores ranging from 32 to 96 showed unhealthy eating patterns and those ranging from 97 to 160 showed healthy eating patterns.

Results

The study sample included 183 college students, out of which, 67.8% were female and 32.2% were male. More than half, i.e. 62.8% were in the age group of 19–22 years, 22.4% belonged to the age group of 23–26 years, 10.4% belonged to the age group of 17–18 years, and 4.4% were above 26 years of age. In relation to dietary preference, most of the college students (65.6%) were non-vegetarian, while 30.6% preferred a vegetarian diet, and only 3.8% were vegan. Among the subjects, 49% walked or exercised more or less every day, 26% did it twice or thrice in a week, 16% did it once a week and 9% never went for a walk or exercise. It was seen that 65% of college students ate 1-2 times a day while only 35% ate 3-5 times a day. The data also exhibited that 4% of study subjects weighed less than 40 kg, 33% weighed 41–50 kg, 30% weighed 50–60 kg, 18% weighed 60–70 kg and 15% weighed more than 70 kg. Among 183 study subjects, 78% were 5–6 feet tall, 18% were 4–5 feet tall, and the height of 4% was 6 feet and above. The data showed that 53.5% of college students had normal BMI, 18% were overweight, 15% were categorised under mild thinness and 11% and 2% were categorised under moderate and severe thinness, respectively. Only 0.5% of the college students were categorised as obese class I as shown in Figure 1.



Figure 1(a). Categorisation of Frequency of the Study Subjects by Age, Dietary Preference, Gender, Frequency of Walk, and Screen Timing

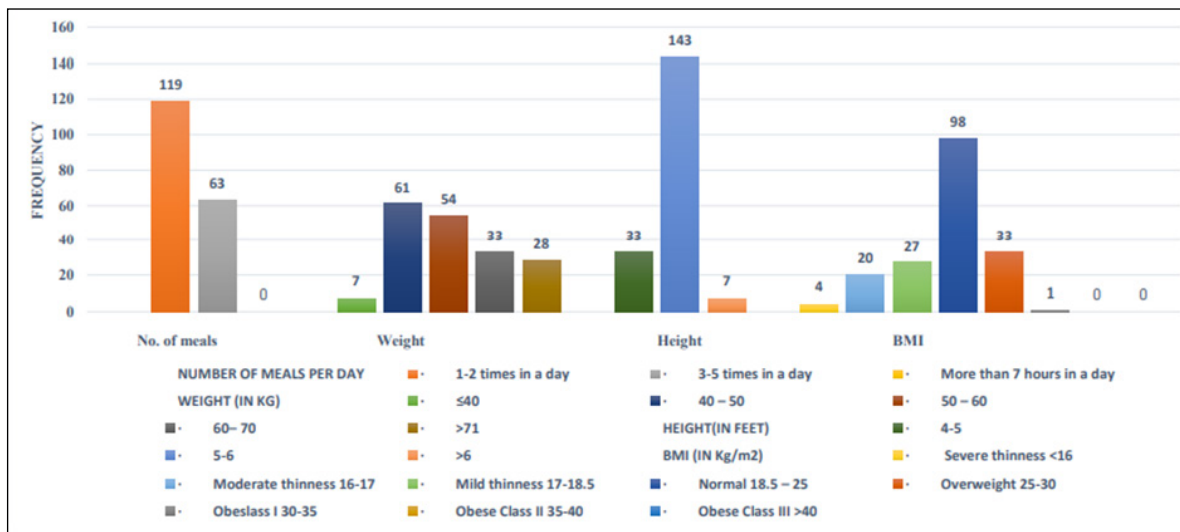


Figure 1(b). Frequency of the Subjects by Number of Meals Taken in a Day, Height, Weight, and BMI

Figure 2 shows that out of 183 study subjects, 66% had moderate perceived stress, 29% had low perceived stress, and 5% had high perceived stress.

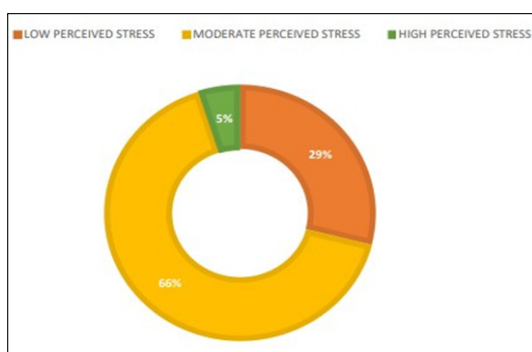


Figure 2. Percentage Distribution of the Study Subjects as per Perceived Stress

The data specified that out of 183 study subjects, most of the college students (56%) were found to have minimal symptoms of depression, 19% had mild symptoms, 12% had moderate symptoms, and 13% had severe symptoms of depression as shown in Figure 3.

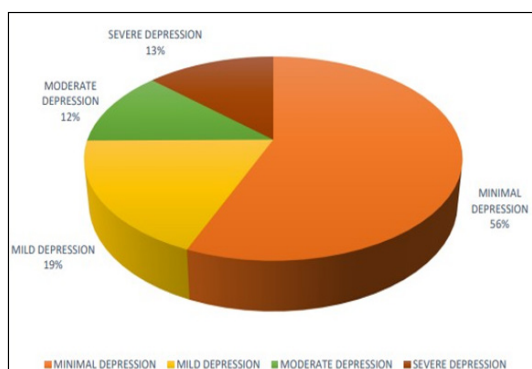


Figure 3. Percentage Distribution of the Subjects as per the Severity of Symptoms of Depression

The data revealed that a huge number of college students had an unhealthy eating pattern. Out of 183 study subjects, 95% had an unhealthy eating pattern, and only 5% of students had a healthy eating pattern as shown in Figure 4.

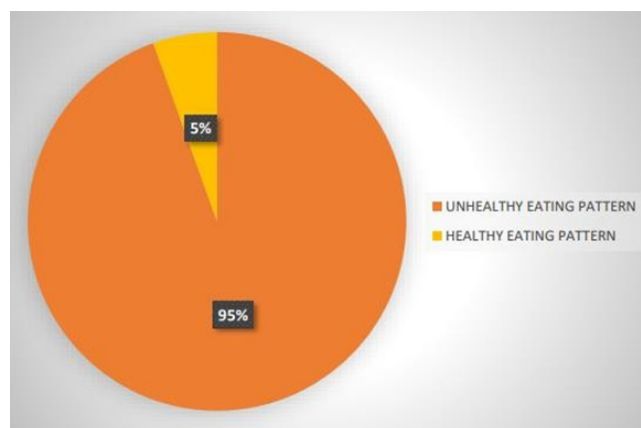


Figure 4. Percentage Distribution of the Study Subjects as per Their Eating Patterns

A statistically significant association between the eating patterns and perceived stress was found at a level of significance, while a statistically non-significant association was found between the eating patterns and symptoms of depression at a 0.05 level of significance as shown in Tables 1 and 2.

Table 1 shows that 0.001 is the calculated p value between eating patterns and perceived stress, which is less than 0.05 level of significance. This indicates that eating patterns and perceived stress are statistically significant.

Table 2 reveals a computed Fisher's exact p value of 0.062 for the association between eating patterns and symptoms of depression, which is greater than the 0.05 level of significance. As a consequence, eating patterns and symptoms of depression were not statistically associated.

Table 1. Association between Eating Patterns and Perceived Stress (N = 183)

Category	High Perceived Stress	Low Perceived Stress	Moderate Perceived Stress	Test	Fisher's Exact p Value
Healthy	0	10	0	Fisher's exact	0.001*
Unhealthy	9	43	121		

Fisher's exact p value < 0.05: significant association

Table 2. Association between Eating Patterns and Symptoms of Depression

Category	Moderate Depression	Mild Depression	Minimal Depression	Severe Depression	Test	Fisher's Exact p Value
Healthy	0	10	10	0	Fisher's exact	0.062
Unhealthy	22	34	93	24		

Discussion

The university/ college period is one of the most stressful stages of life, and symptoms of depression and stress are the health issues observed among college students all over the world. Understanding about making healthy food choices may additionally make college students more inclined towards healthier lifestyles. In this study, we assessed perceived stress symptoms, eating patterns, and symptoms of depression among students, along with the associations of eating patterns with perceived stress and symptoms of depression.

The data were gathered through a standardised and self-structured rating scale. The respondents were asked to choose the most appropriate response for each statement.

The present study revealed that 66% of college students had a moderate level of perceived stress. These findings are similar to those of a study done by AlAteeq et al., which focused on the perceived stress level among students.⁹ The researcher concluded that more than half (55%) of the participants showed moderate levels of stress. Symptoms of depression were seen in college students in the present study. These findings are consistent with prior work done by Rotenstein et al., who concluded the presence of symptoms of depression among students.¹⁰ The present study explored that 95% of college students had an unhealthy eating pattern and the results of the study were supported by the study conducted by Yun et al. who highlighted the high prevalence of unhealthy eating behaviour and practices of frequently snacking and consuming fried food among the students.¹¹

Another study conducted by Gan et al. revealed that university students consumed insufficient nutrients and engaged in unhealthy eating behaviours.¹² The present study found a statistically significant association between eating patterns and perceived stress among college students. Similar findings were reported among students

studying at the University of the United Kingdom.¹³ The result outlined a significant positive relationship between eating unhealthy foods and perceived stress.

Students studying at Chinese universities also reported significant associations between stress and eating habits.¹⁴

In contrast with the current study, Mikolajczyk et al. reported a significant association of eating patterns with depression among college students in European countries.¹⁵ The present study, however, shows no significant association between eating patterns and symptoms of depression, whereas a study found a significant association between symptoms of depression and a composite score of daily maladaptive health behaviours, which includes unhealthy eating patterns. This contrast may be due to the differences in the socio-cultural, socio-economic, and environmental factors of different countries. The findings of the current study render a few nursing implications:

- Students should be encouraged to meet with their college/ university dieticians or professors to learn more about the ways to achieve a healthy lifestyle.
- Education and counselling on nutrition can be provided to emphasise the benefits of eating a healthy diet.
- In order to keep college students healthy, nurse administrators should encourage them to keep a variety of healthy foods at home. To maintain a healthy lifestyle, students are also encouraged to engage in activities like exercise, yoga, etc.
- Studies relating to eating patterns, perceived stress, and symptoms of depression must be conducted on a regular basis in order to monitor the level of stress and eating patterns of the individual.

Limitations

Initially, the sample size was 350 but due to the sudden outbreak of COVID-19 and the non-availability of subjects and resource constraints, the sample size had to be reduced to 183. The results cannot be generalised because of the

small sample size and also because the study was performed only in one university.

Conclusion

The conclusion of the study suggests that a majority of the students surveyed at Jamia Hamdard University exhibited unhealthy eating patterns with 95% of participants reporting non-nutritive dietary habits. The findings indicated a significant correlation between dietary habits and perceived stress levels, suggesting that adopting healthier eating habits could potentially aid in reducing stress among university students. However, no substantial relationship was found between eating patterns and symptoms of depression. The study underscores the need for regular mental well-being checks, stress management, and promotion of healthy eating habits among university students for their better overall health. Nevertheless, given the small sample size and the study only being conducted in a single university, these results cannot be generalised.

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Conflict of Interest: None

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