

The Perceived Impact of Stress Levels on Undesirable Eating Behavior Among College Students

By: Gianna Sabatini, Jasbir Mughar, Pari Shah, Kathy Ngo, and Justine Chung



1 Objective

To examine the relationship between perceived stress levels and undesirable eating behavior among college students at The University of California - San Diego (UCSD) using surveys that assess students' stress perceptions and undesirable eating behavior, aiming to evaluate the possible association.

2 Background

Transition to college or university has been shown to overwhelm students, leading to increased stress, loneliness, and depression.¹ With these changes in everyday life, it has been found that further emotional changes such as increased stress, loneliness, worry, and depression also occur.² Stress, as defined by the World Health Organization, leads to physical, emotional, and psychological strain which has been shown to frequently affect roughly eight out of ten college students.³ Research has linked emotional states, like stress, to different types of undesirable eating behaviors in college students such as emotional eating, cognitive restraint, and uncontrolled eating.⁴ With the multitude of changes and variable stressors associated with being a college student, this population is of particular interest in looking at the connection of stress and undesirable eating behaviors.⁵ The National Institutes of Health recommends self-report measures, defining behaviors, psychological evaluations, and population-specific analysis as best practices for measuring stress.⁶ Some key tools such as the Perceived Stress Scale and Three-Factor Eating Questionnaire were used to evaluate the association between perceived stress levels and eating behaviors among college students.⁷

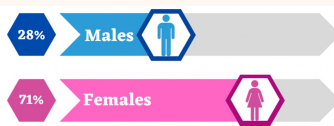
3 Methods

- This observational study was conducted at the University of California, San Diego from April to May 2023.
- 60 responses were collected through an online survey regarding participants' perceptions of college students' stress levels and eating behaviors.
- Exposure variable: perceived stress levels among college students, measured using the perceived stress scale (PSS), a self-report assessment tool of eight questions.⁷
- Outcome variable: undesirable eating behavior, measured using the Three-Factor Eating Questionnaire (TFEQ), an eleven-question self-reported questionnaire.⁸
- The TFEQ assessed three different aspects of undesirable eating behavior: cognitive restraint, uncontrolled eating, and emotional eating.⁸
- Out of the 60 responses, 59 were used in the statistical analyses, excluding one response from a non-UCSD student.
- Data was analyzed using a Linear Regression Analysis to look at if higher perceived stress levels correlated with higher undesirable eating behavior.
- Spearman's Rank-Order Correlation was performed to further examine the relationship between perceived stress levels and undesirable eating behavior.

4 Demographics of Survey Participants

Survey Participants Gender

Figure 1: Female and male response rate according to survey.



Average TFEQ Score by Gender:
Male: 26
Female: 25

Survey Participants Grade Level

Figure 2: Freshman, sophomore, junior, and senior response rate according to the survey.



Average TFEQ Score by Grade level:
Freshman: 25
Sophomore: 24
Junior: 25
Senior: 27
Other: 21

5 Results

- Scores for the PSS ranged from 12 to 24, with higher scores indicating a higher perceived stress level.
- Scores for the TFEQ ranged from 25 to 42, with higher scores indicating a higher level of undesirable eating behavior.

Linear Regression Analysis: Undesirable Eating Behavior vs. Perceived Stress Level

Undesirable Eating behavior vs. Perceived Stress Level

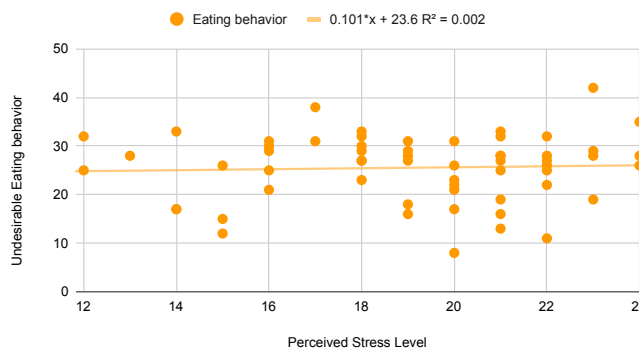


Figure 3: Linear regression analysis shows a weak positive relationship between higher perceived stress levels and higher undesirable eating behavior; the results were statistically insignificant with a p-value of 0.729.

Spearman's Rank-Order Correlation

Spearman's Rank-Order Correlation was conducted to examine the relationship between perceived stress levels and undesirable eating behavior in a sample of 59 students. The results indicated a very weak, positive correlation between stress levels and eating behavior. However, the correlation was not statistically significant (Spearman's $r_s(59) = .007, p = .959$).

Linear Regression Analysis: Female

- Linear regression analysis based on females
- Weak negative relationship between higher stress levels and higher undesirable eating behavior
- Results were statistically insignificant
- P-value of 0.945

Linear Regression Analysis: Male

- Linear regression analysis based on males
- Weak positive relationship between higher stress levels and higher undesirable eating behavior
- Results were statistically insignificant
- P-value of 0.949

6 Conclusion

This research did not support our hypothesis that higher perceived stress levels correlate with higher undesirable eating behavior among college students, which contradicts findings in existing literature. Possible reasons for this, and its limited statistical significance may be attributable to a small sample size and an exclusive focus on one college; thus, future investigations should focus exploring this topic. This study also utilized a convenience sampling method, which may have limited the representativeness of the student population experiencing unhealthy food intake and stress levels. Instances of selection bias may have been introduced which limited the validity of the research. Additionally, a causal relationship could not have been determined due to the study methods of a cross-sectional study.

7 Policy Implications

Several studies have highlighted the association between undesirable eating behavior due to stress levels among college students. Therefore, policymakers should concentrate on current literature indicating a connection between stress levels and eating behavior, emphasizing policies that enhance support for students. For example, schools can adopt policies that ensure students have access to balanced and nutritious meals on campus. Other policy options could include campus wide alerts being sent out by email and text reminding students to take study breaks during midterms and finals weeks.

8 Acknowledgements

We would like to acknowledge Dr. Haley Ciborowski for her support and guidance over the course of our research study.

References
1. Anshu M, Roy R. Eating behavior and stress levels among college students. *J Mental Health Hum Behav* 2022;27:60-4.
2. Choi J. Impact of stress levels on eating behaviors among college students. *Nutrients* 2020;12:1241.
3. Stress. World Health Organization. <https://www.who.int/news-room/questions-and-answers/item/stress>. Accessed February 18, 2023.
4. Miravinda A, Bami R. Eating behavior and stress levels among college students. *pubb. open*. <https://www.pubb.oi.org/article.asp?issn=0971-8990/year=2022/volume=17/issue=1/page=06/page=64/uidat=Anesh>. Published August 13, 2022. Accessed February 18, 2023.
5. College students. The American Institute of Stress. <https://www.aistress.org/college-students>. Published November 29, 2022. Accessed February 18, 2023.
6. Crosswell AD, Lockwood KG. Best practices for stress measurement: How to measure psychological stress in Health Research. *Health psychology open*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7596522/>. Accessed February 18, 2023.
7. Perceived Stress Scale - New Hampshire. <https://www.dhs.nh.gov/wellness/docs/PerceivedStressScale.pdf>. Accessed February 23, 2023.
8. Angeli S, English J, Eriksson T, et al. Three-factor eating questionnaire-21R as a measure of cognitive restraint, uncontrolled eating and emotional eating in a sample of young Finnish females. *Int J Behav Nutr Metab*. 2010;4:11-18. doi:10.1016/j.ijbn.2010.01.002