



Is there a relationship between perceived stress and vegetable consumption in college students?

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Introduction

- Eating a variety of vegetables ensures one is getting the needed vitamins, minerals, phytochemicals, and dietary fiber for the body to function properly.
- Higher intakes of fruit and vegetables are associated with lower risk of all-cause mortality and chronic diseases¹.
- Young adults entering the college setting are in a transitional life stage that is associated with a shift in responsibility, specifically for their own dietary patterns and many may lack interest or struggle to prioritize following a balanced diet².
- Young adults typically do not consume the recommended amounts of vegetables^{3,4}.
- Previous work shows that vegetable consumption and stress levels may be connected^{3,4}.

Vegetable Recommendations and Perceived Stress Definitions

- The 2020 Dietary Guidelines for Americans suggests adding a variety of vegetables into one's diet to obtain the nutrients our bodies need⁵.
- Recommendations for college age students (18-24yo) are 2 ½ - 4 servings of vegetables per day⁶.
- Perceived Stress is defined as the level in which events in one's life are assessed as stressful, unpredictable, and uncontrollable⁷.

Objective

To examine the relationship between perceived stress and vegetable consumption in college students.

Methods

Participants

- Students (ages 18-24) were recruited from an introductory nutrition course.
- Sample size included 4,470 total students (1,466 M, 3,004 F).

Study Design

- Data were collected between 2012-21 through the College Health and Nutrition Assessment Survey (CHANAS), an ongoing cross-sectional study conducted at UNH (UNH IRB #5524).

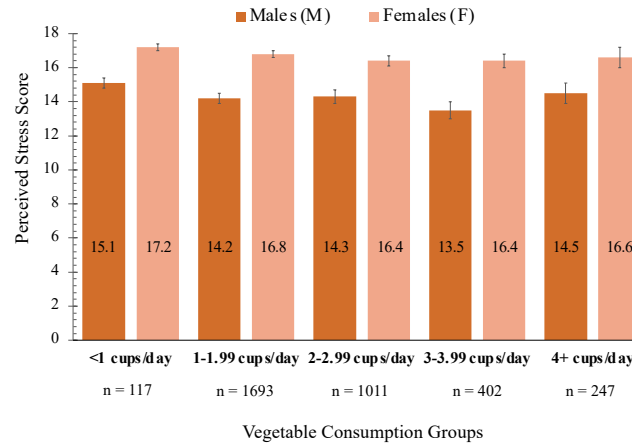
Measurements

- Perceived Stress was measured via a validated, 10-item questionnaire (Cohen's Perceived Stress Scale) as a part of a larger online survey (Qualtrics). Answers were re-coded into a total perceived stress score (PSS).
- Average daily veg intake (cups/day) was reported through an online nutrient analysis software (Diet and Wellness+).

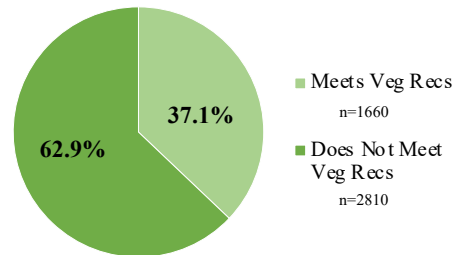
Data Analysis

- After stratifying by sex, the difference in PSS and vegetable intake was examined using ANCOVA; living quarters and kcals/day served as covariates. All analyses were conducted using SPSS version 28.

Perceived Stress and Vegetable Intake



Prevalence of Meeting Vegetable Recommendations



Results

- Females and males had a similar mean vegetable consumption of 1.9 cups/day for males and 1.8 cups/day for females.
- PSS were higher in females than males (16.7±0.1 vs. 14.7±0.2, p<.001).
- Men who ate < 1 cup/day had a mean PSS of 15.1 (95%CI 14.5-15.8) while the other groups had a mean score ranging between 13.4-14.4. Females who ate < 1 cup/day had a mean score of 17.2 (95%CI 16.7-17.7) while other groups had a mean score ranging between 16.4-16.8 (all p>.05).

Perceived Stress Scale Questions

In the last month, how often have you ...

- ...been upset because of something that happened unexpectedly?
- ...felt that you were unable to control the important things in your life?
- ...felt nervous and stressed?
- ...felt confident about your ability to handle your personal problems?
- ...felt that things were going your way?
- ...found that you could not cope with all the things that you had to do?
- ...been able to control irritations in your life?
- ...felt that you were on top of things?
- ...been angered because of things that happened that were outside of your control?
- ...felt difficulties were piling up so high that you could not overcome them?

For each question choose from the following alternatives:

0 = never 1 = almost never 2 = sometimes 3 = fairly often 4 = very often

Conclusions

While most students did not meet recommendations for vegetable intake, perceived stress did not differ according to consumption. Findings may help to inform interventions and education materials to improve diet quality within the college population to meet the dietary recommendations.

Acknowledgements

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References

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Subject Characteristics	N=4470
Gender (female), n (%)	3004 (67.2)
Age (years)	18.9 ± 1.1
Class Standing, n (%)	
First Year	2393 (53.5)
Sophomore	1421 (31.8)
Junior	417 (9.3)
Senior/Other	239 (5.4)
Major, n (%)	
Nutrition Major	255 (5.7)
Allied Health Major	812 (18.2)
Non-Nutrition or Allied Health Major	3403 (76.1)
Race (white), n (%)	4077 (91.2)
Meets Vegetable Recommendations, yes, n (%)	1660 (37.1)
Living Quarters, no direct access to kitchen, n (%)	3174 (71)
Total Calories per Day (kcals)	1956 ± 701