

# College Student's Breakfast Eating Habits, Stress Levels, and Satisfaction with Handling Problems: A Five-Day Diary Study.

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## Introduction

As adolescents enter emerging adulthood, their childhood eating patterns become self-directed. Thus, it is not surprising that young adults typically have poorer eating habits compared to school-age children (Arnett, 2007). The eating behaviors of college students are important because such emerging adult dietary consumption patterns are linked to obesity in adulthood (Nelson et al., 2008). Skipping breakfast is associated with making less healthier food choices throughout the day such as eating higher calories and less nutritious meals. (Goldstone et al., 2009). Freedman (2010) stated that college students are failing to meet recommended guidelines of healthful eating, such as consuming five or more fruits and vegetable per day and maintaining a normal Body Mass Index range. Two additional factors linked to eating habits are gender and stress. During adolescence, females may tend to skip breakfast more often than males due to concerns about being thin (Shaw, 1998). Among college students, males tend to report a lower intention to eat healthy (Deshpande, 2009). Additionally, stress represents a worrisome experience of college students that might interfere with academics and health behaviors (Largo-Wight et al., 2005). Nelson et al. (2008) highlighted that stress was related to weight gain and skipping breakfast among a college sample.

Although eating habits have been linked to subsequent health, considerably less is known about the links between eating behaviors and stress experiences. In this study, we focus on the psychological experience of stress and factors related to whether college students exhibit more adaptive eating behaviors (such as not skipping meals).

## Hypotheses

- H1: Students will report consistent rates of stress over the five days.
- H2: Stress levels will be lower when each meal is consumed over time.
- H3: The link between stress levels and meal consumption will be explained by satisfaction with how students handle their problems over time.

## Method

### Participants

Four hundred and thirty eight college students participated in a five-day diary study. Participants were recruited from psychology courses at San Francisco State University (SFSU). Students who were within the age range of 18-29 comprised 94% of the sample ( $N = 411$ ,  $M = 21.05$ ,  $SD = 2.40$ ) and 60% of these students were within the traditional college age of 18-21 years old. The majority of this sample was female (73%) and the final participants were between the ages of 18 and 26.

### Procedure

A survey was completed online by participants who provided information on eating habits and daily functioning over a span of five days. The survey questions were repeated for all five days, with the exception of days one and five which asked for demographic information and additional comments and feedback about the survey. Demographic questions gathered participant's family marital status, age, gender, and contact information.

### Measure

**Daily stress.** We assessed a self-report of participant's daily stress levels on a scale from (1) *not at all stressful* to (9) *extremely stressful*

**Satisfaction handling problems.** Satisfaction with how students handled their problems for the day was assessed on a scale from (1) *not at all satisfied* to (9) *very satisfied*.

**Meal consumption.** Students were asked if they ate breakfast, lunch, and dinner along with how many snacks they consumed throughout the day. Each meal time variable was recoded into dichotomous categories that ranged from (0) *no, I did not eat breakfast/lunch/dinner today* to (1) *yes, I breakfast/lunch/dinner today*. Separate items assessed whether each meal was eaten.

## Tables

Figure 1. Trend of Stress Scores Over the Five Days of the Study by Gender

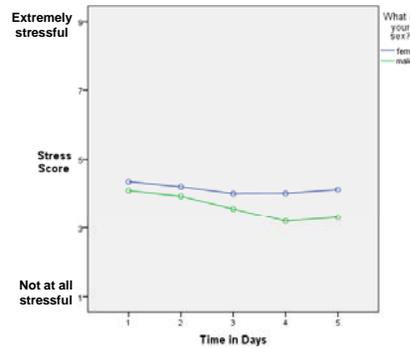


Table 1. Average Stress Scores Overtime by Gender

	<i>M</i>	<i>SD</i>	<i>N</i>
Male	3.62	1.47	81
Female	4.15	1.39	217

Figure 2. Trend of Satisfaction Handling Stress Scores Over the Five Days of the Study by Gender

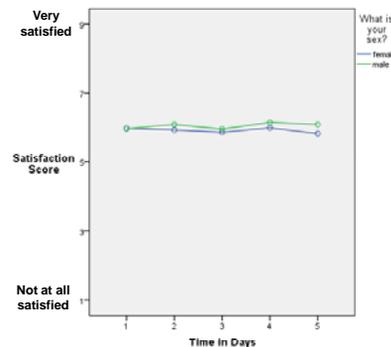


Table 2. Average Satisfaction Scores Overtime by Gender

	<i>M</i>	<i>SD</i>	<i>N</i>
Male	6.06	1.41	81
Female	5.93	1.31	216

## Results

To test hypothesis 1 we estimated a level 1 mixed model in SPSS 18 and observed that the mean intercept for stress was significantly different from zero ( $M = 4.391$ ,  $p = .006$ ) and there was a significant average rate of change suggesting a decline in stress reports over the five days ( $M = -.098$ ,  $p = .006$ ). However, only the variance around the intercept factor was significant ( $intercept\ var = 1.469$ ,  $p = .001$  and  $slope\ var = .045$ ,  $p = .214$ ) suggesting while participants differed in their starting place they tended to decline at similar rates.

To test hypothesis 2 we predicted stress rates from consumption of each meal while covarying gender. For breakfast, eating breakfast was related to less stress over the five days ( $b = .231$ ,  $p = .048$ ) even when the significant link between being female and reporting more stress was controlled ( $b = .436$ ,  $p = .006$ ). For lunch, no significant relationship was observed between meal consumption and stress over the five days ( $b = .194$ ,  $p = .184$ ) after gender was controlled ( $b = .436$ ,  $p = .006$ ). A marginal trend was observed for less stress over the five days ( $b = .299$ ,  $p = .059$ ) and dinner consumption when the significant link between being female and reporting more stress was controlled ( $b = .419$ ,  $p = .008$ ).

## Results (Continued)

To test hypothesis 3 we estimated the links between eating meals and daily stress when satisfaction handling problems and gender were controlled. Specifically, we observed that the link between stress and satisfaction handling problems was strong ( $b = .392$ ,  $p < .001$ ) and that the link between stress and eating breakfast was only partially mediated ( $b = .180$ ,  $p = .106$ ) while the link between stress and eating dinner was more strongly mediated ( $b = .147$ ,  $p = .333$ ).

## Discussion

Our findings demonstrate that stress levels tended to decrease throughout the length of the study. This effect can be attributed to extraneous variables such as day of the week, time during the semester, or even demand characteristics due to the nature of the survey. Nonetheless, stress levels were related to breakfast consumption patterns over time; however, this trend was strongest for breakfast as no significant relationships were found for the consumption patterns of lunch or dinner.

The perception of students' efficacy handling problems was related to lower stress levels and also accounted for the link between missing meals and stress. Thus, the ability to cope with problems appears to account for the role of missed meals during the day, especially missing lunch and dinner.

Because participants exhibited variability among response rates for each measure over the course of the study our mixed model analyses allowed us to maximize our multiple day study to both account for individual differences as well as capitalize on our repeated measures.

Although they are busy the daily experiences of emerging adults will likely benefit from using meal planning, preparation, and consumption as breaks from the stress of the day. Efforts among school health programs, peers, and social support groups might benefit from reinforcing healthy eating behaviors throughout the college-age years.

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