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The Relation Between Disordered Eating and Perceived Stress

Tori E. Byars

THE RELATION BETWEEN DISORDERED EATING AND PERCEIVED STRESS

by

TORI E. BYARS

(Under the Direction of Nicolette P. Rickert)

ABSTRACT

Disordered eating behavior encompasses a spectrum of maladaptive eating patterns, including emotional eating, binging, restricting, and other similar behaviors. Perceived stress is the extent that an individual perceives their demands exceed their ability to cope. Existing research has demonstrated a positive relation between high ratings of perceived stress and disordered eating behaviors (King et al., 2009; Skead et al., 2018). The current study aimed to expand this research by examining the relation between disordered eating and stress in students, workers, and those who partake in both commitments. Utilizing a single survey, participants completed assessments including the Perceived Stress Scale, the Eating Disorder Examination Questionnaire, and the Three-Factor Eating Questionnaire. The current study hypothesized that perceived stress would mediate the relation between group status (i.e., student, worker, or student-worker) and disordered eating behavior. PROCESS macro mediation analyses were conducted, and results indicated there was an indirect connection from group status to disordered eating behavior via stress. No direct connection from group status to disordered eating was found. Future directions for research and practice are discussed.

INDEX WORDS: Perceived stress, Disordered eating, Role conflict, Eating disorders, Occupational stress, Burnout

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CHAPTER 1

INTRODUCTION

Eating behaviors is a broad term for all motivations and patterns of eating. Within this broad term is disordered eating, which describes various motivations and patterns of eating that are maladaptive and possibly harmful to an individual. These behaviors can have many different sources of origin, including stress. Perceived stress is an individual's level of stress as they perceive it based on all personal and environmental factors. Due to the correlational design of research studies on stress and disordered eating behavior, there is little known about the details of the cause-and-effect connection. Despite this gap in the literature, we do know from prior studies that there is a relation between the two. According to King et al. (2009), a high level of job stress is significantly related to higher rates of disordered eating. In addition, Costarelli and Patsai (2012) found that students reported higher levels of disordered eating during the stressful examination period as compared to the less stressful non-examination period. The literature supports the idea that stress is related to disordered eating in both an occupational and academic setting. The current study built upon these findings by making group comparisons amongst those who work, those who go to school, and those who do both. Through this research, we can better understand groups that are more vulnerable to stress and disordered eating behaviors. With a deeper understanding and greater knowledge on the subject comes a better means of prevention and treatment. Without intervention, stress can lead to burnout and lower overall well-being (Mosadeghrad, 2014; Nevanpera et al., 2012). In addition, disordered eating without intervention can lead to poor health outcomes and higher risk of developing an eating disorder (Skead et al., 2018).

Disordered Eating

According to the American Psychiatric Association (2023), eating disorders are behavioral conditions that can potentially affect physical, psychological, and social function. With all variations of eating disorders combined, about 5% of the population is impacted by this condition. Although an eating disorder can affect anyone, the majority are affected women aged 12 to 35 years old.

Prior to having a diagnosable eating disorder or unrelated to development of a diagnosable eating disorder, some individuals may exhibit disordered eating behaviors. Disordered eating includes a variety of eating behaviors, dysfunctional emotions, and cognitive distortions about food, exercise, and body image (King et al., 2009). Disordered eating may involve unhealthy patterns of eating such as purging, binging, and restricting. Motivations for eating may also play a role in eating behavior, such as emotional eating which is used as a means of affect regulation or external eating such as reacting to smell and environmental cues. Disordered eating is simply a broad category for behaviors that can manifest for a variety of reasons and in a multitude of ways. In addition, these behaviors are linked to diagnosed eating disorders (e.g., bulimia nervosa, anorexia nervosa, binge eating disorder) which pose an even greater threat to the health and well-being of an individual (Skead et al., 2018). While not every individual with disordered eating behavior will be diagnosed with an eating disorder, these behaviors are a risk factor to be aware of to improve physical and psychological well-being.

Association Between Disordered Eating and Stress

Disordered eating may be used as a coping mechanism for individuals dealing with psychological distress, including many different variations of stress such as personal, academic, and occupational stress (King et al., 2009; Skead et al., 2018). Stress is a commonly occurring phenomenon that can pose numerous physical and psychological health risks (Mosadeghrad,

2014). According to the American Psychological Association, stress is the physical or psychological reaction to internal or external stressors, and it can influence how people feel and behave by affecting almost every system in the human body (American Psychological Association, 2023). Specifically, stress is associated with adverse physical outcomes such as chronic fatigue, increased blood pressure, increased risk of cardiovascular disease, and disordered eating. In addition, psychologically distressing outcomes are common such as emotional exhaustion, mood disturbance, lack of concentration, and many more (Mosadeghrad, 2014).

Eating habits are subject to change as a coping mechanism for dealing with stress (Ozier et al., 2008). In a study using female university students, 28.3% of women reported eating less than usual when stressed, and 35% reported eating more than usual when stressed (Costarelli & Patasai, 2012). Stress has been associated with overeating among emotional eaters and under-eating among nonemotional eaters (Wallis & Hetherington, 2009). In addition, Skead et al. (2018) found that psychological distress and eating/weight/shape concern were both positively associated with eating for affect regulation.

Through classical conditioning, a stimulus (i.e., food) can become associated with positive responses (i.e., pleasure in eating), leading to habitual consumption patterns that influence an individual's relationship with food (Higgs & Spetter, 2018). During periods of stress, some individuals may habitually turn to comfort foods, like cookies, seeking the associated reward (Higgs & Spetter, 2018). For instance, studies involving rats subjected to stress have demonstrated that diets high in fat and sugar can attenuate the physiological effects of acute stress and anxiety-like behavior, suggesting that a certain diet can serve as a form of comfort eating and influence reward neurocircuitry (Morris et al., 2014).

In a study with 77 women, researchers included physiological measures to expand research on the impact of stress on eating behavior. The participants underwent a protocol consisting of distinct baseline, stress-induction, and recovery phases, during which various parameters including blood pressure, heart rate, and self-reported affect were monitored. Food was discreetly provided during the recovery phase. Although no significant differences were observed in response to stressors between restrained and unrestrained eaters, variations emerged in the interaction between stress level, restraint level, and food intake. Restrained eaters, characterized by intentional dietary restriction with occasional episodes of excessive eating, who experienced high negative affect consumed almost twice as much food as restrained eaters with low negative affect, likely due an episode of excessive eating as a coping mechanism. Whereas unrestrained eaters with high negative affect exhibited a significant decrease in food consumption compared to those with low negative affect. In addition, physiological arousal was a significant predictor of reduced food consumption among unrestrained eaters. While these results may seem counterintuitive, they demonstrate a complex relationship between eating habits, affect, and arousal in the context of restrained eating. These findings contribute to existing literature indicating changes in eating behavior during stress. In particular, this study emphasizes the importance of considering prior eating behavior when analyzing responses to stress and the use of physiological measures to further investigate the link between arousal and eating behavior (Rutledge and Linden, 1997).

Academic Stress

Stress associated with academic performance, such as examination stress, has been related to increases in disordered eating behaviors among female university students (Costarelli & Patsai, 2012). Examination period for university students is considered to be a stressful time;

during these periods of stress, reports of disordered eating symptomatology rise significantly. This rise in attitudes has been shown to be positively correlated with emotional and restrained eating, demonstrating a positive relation between periods of stress and disordered eating habits in university students. (Costarelli & Patsai, 2012). Using college students, Luo et al. (2022) investigated the relation between psychological distress, self-control, and food addiction, a form of disordered eating. They found that food addiction in participants was comorbid with psychological distress (i.e., anxiety, depression, and stress). It is possible that chronic stress can lead to an increased risk of food addiction due to the dysregulation of the reward system in the brain (Wei et al., 2019). These findings support the argument that chronic and/or high stress states may increase the risk of disordered eating behavior.

It is also important to note another common stressful period for students is the transition to college. Delinsky and Wilson (2007) found that Eating Disorder Examination Questionnaire results, specifically for the restraint (i.e., limiting or avoiding eating) and shape (i.e., preoccupation and/or dissatisfaction with body shape) subscales, significantly increased from fall to spring semester for female first year students. Among a sample of college students, Masuda et al. (2010) found not only do stressful events have an impact on disordered eating-related cognitions, but so does how an individual responds to those events. Therefore, coping strategies may play a role in whether or not an individual exhibits disordered eating behaviors.

Occupational Stress

Another form of stress to consider is occupational stress. Occupational stress is when job related stressors such as workload, conflict in the workplace, job insecurity, and more impact the individual (Mosadeghrad, 2014). Organizational and environmental factors causing occupational stress can have a negative impact on physical, psychological, and social well-being

(Mosadeghrad, 2014). Stress can have a negative impact on the worker's job performance and quality of working life. Decreases in productivity, motivation, concentration, and more can be a result of occupational stressors (Mosadeghrad, 2014). In a sample of lawyers and law students, those who reported more often engaging in disordered eating habits at work also reported higher psychological distress (Skead et al., 2018). Additionally, despite having similar BMIs, lawyers were found to be more concerned with their weight and shape than the general population, resulting in more restrained eating behavior amongst this sample. King et al. (2009) found that nurses who reported higher levels of perceived job stress were at a higher risk of disordered eating. Among the 435 nurses in this study, 33 percent reported frequently or always eating when stressed.

One type of disordered eating is binge eating which has specifically been found to be associated with job strain. Those who have high psychological job demands, less job control, and less social support at work are at a higher risk of binge eating (Gralle et al., 2017). Similarly, job strain and disordered eating behaviors such as overeating are associated with the body's regulatory system. When an individual experiences high demand and low control, adrenaline and cortisol levels rise in the body. In an attempt to return to homeostasis, the individual may eat an abundance of high-calorie and high-sugar foods (Gralle et al., 2017). Therefore, stress and job strain may have direct physiological effects that influence an individual to partake in disordered eating behaviors.

Work Engagement and Burnout. Unchecked occupational stress can also lead to increased risk of burnout. Occupational burnout is a result of chronic stress and overbearing job demands (Nevanpera et al., 2012). The World Health Organization (2019) considers burnout to be a syndrome resulting from chronic workplace stress that can lead to energy depletion,

negative feelings toward one's job, and reduced professional efficacy. Those experiencing burnout may be particularly vulnerable to emotional eating and uncontrolled eating as a means of coping (Nevanpera et al., 2012).

Work engagement is a predictor of physical and psychological health in adults and is overall an important aspect of well-being in the workplace (Bakker et al., 2008). In a sample of working women, those who were categorized as having disordered eating behaviors showed significantly lower work engagement (Wilmer et al., 2021). Therefore, by addressing occupational burnout individuals may see improvements in overall well-being, particularly in reduced disordered eating behaviors and increased work engagement.

Role Conflict

When considering stress on workers and students, it is important to discuss how multiple role expectations can cause stress and result in role conflict. Role conflict is defined as a stressful situation that involves conflicting role expectations and an inability to rectify these differences (Hecht, 2001; Pomaki et al., 2007). This conflict occurs when an individual cannot satisfy the demands of one role (e.g., employee) due to an interference with another role (e.g., parent). Role conflict is considered chronic stress that has an impact on job satisfaction and psychological distress (Pomaki et al., 2007). In particular, work-family conflict poses a challenge for an individual due to participating in the role of parent and employee simultaneously. While the strain of balancing work and family commitments is pervasive, it is important to acknowledge that work-school conflict can also exacerbate role conflicts. Multiple roles can deplete time and energy resources causing significant stress on an individual (Shukri et al., 2017). A link between well-being, job satisfaction, and role conflict can be found throughout the literature. Pomaki and colleagues (2007) identified health promoting behaviors (i.e., activities that individuals partake

in to maintain good health, such as healthy eating habits) as a buffer for negative work stressors, such as role conflict. Employees who engaged in more health promoting behaviors reported less psychological distress. In addition, Shukri and colleagues (2017) found an association between indulgence in a less healthy diet and psychological distress resulting from role conflict. Overall, work-family conflict was shown to have a direct impact on eating habits, likely as a means of coping with stress.

Sex and Gender Differences

When looking at differences in disordered eating symptomatology, the literature highlights differences among the sexes and genders. Eating disorders have historically been perceived as primarily affecting women and consequently dubbed the "woman's disorder." In a national survey, the lifetime prevalence estimates of anorexia nervosa, bulimia nervosa, and binge eating disorder were found to be 0.9%, 1.5%, and 3.5% among women, and 0.3%, 0.5%, and 2.0% among men. These statistics reflect the gender disparities present in the three most common eating disorders. While these differences are evident, the reasons behind them remain a subject of debate (Hudson et al., 2007).

In a qualitative metasynthesis conducted by Thapliyal and colleagues (2018), the relationship of sex on diagnosis and treatment experiences was explored. Eating disorder presentations vary between men and women, particularly in terms of consumption patterns and motivations. Women more frequently report undereating, loss of control during eating episodes, and are often motivated by body dissatisfaction. Conversely, men tend to report episodes of overeating. These differences in motivation could be attributed to societal norms, where females are pressured to attain thinness while males are encouraged to achieve muscular or larger bodies.

Variations in the intensity and diagnosis of eating disorders have been observed. Men generally exhibit less severe eating disorder pathology and are less likely to seek treatment specifically for eating disorders. They are also less likely to receive a diagnosis when seeking other psychological services (Thapliyal et al., 2018). The underlying reasons for these differences in eating disorder pathology and treatment-seeking behavior are not definitively understood, but it is evident that men and women manifest symptoms differently and are diagnosed disparately. As a result, researchers often prioritize women in eating disorder studies, given the prevailing focus on female presentations.

Summary

As shown in previous research, as perceived stress increases, so does disordered eating. It is important to assess and learn more about the nature of this relation to improve prevention and treatment methods for those affected. The literature addresses aspects of psychological distress, and stress reactivity compared with many elements of disordered eating and motivations for eating behaviors. The research has expanded to samples of adolescents, working adults, college students, and even those diagnosed with an eating disorder. Despite literature addressing disordered eating behaviors and the relation with perceived stress, not many studies have made cross-group comparisons, especially between individuals with different occupational or academic roles and stressors. This comparison is important because it shows us how different groups of people with differing responsibilities or role conflicts are impacted by stress and disordered eating habits.

Current Study

The current study aimed to fill this gap by examining differences in perceived stress and disordered eating symptoms amongst those adults who work, those who go to school, and those

who do both. Making these comparisons can improve the ability to identify the extent that one group of individuals is more vulnerable to disordered eating behaviors. In addition, many studies on eating behavior have excluded men from their samples. Although disordered eating behaviors are more prevalent among women (Hudson et al., 2007; Thapliyal et al., 2018), the current study includes all sexes and discusses any commonalities and differences to expand the literature. The literature on emotional eating specifically in relation to stress needs to be expanded, therefore the current study aimed to build upon this.

The present study aimed to address the following research question: Does perceived stress mediate the relation between different occupational or educational commitments (i.e., work, school, or both) and disordered eating behaviors? It was hypothesized that perceived stress would mediate the relation between group status and disordered eating behaviors, with individuals juggling both work and school responsibilities experiencing higher levels of perceived stress, which in turn would be associated with elevated disordered eating behaviors.

CHAPTER 2

METHOD

Participants

The demographics of interest were adults who are employed, those who go to school, and those who engage in both commitments. The requirements for inclusion in this study were being at least 18 years old and either a student and/or an employee of Georgia Southern University. Participants indicated in the demographics section as solely a worker, solely a student, or a combination of the two. Employment was specified with the number of hours worked per week and students specified how many credit hours they were actively enrolled in. After using G-Power to conduct a power analysis ($\alpha = .05$, effect size $f2 = .08$), the minimum desired sample size to achieve power of .80 was 101 participants (Faul et al., 2009).

A total of 130 participants consented to and completed the survey. After analyzing attention check questions, seven participants were excluded due to incorrectly answering two out of three attention checks, leaving a total of 123 participants. Demographic reporting showed that participants ranged from 18 to 66 years of age, with the mean being 33.13 years (*SD* = 15.5). Participants were 22% (*n* = 27) biologically male, 76.4% (*n* = 94) biologically female, and 1.6% (*n* = 2) were "prefer not to say" or "not listed here." Race and ethnicity demographics showed that participants were 2.4% (*n* = 3) Asian/Pacific Islander, 15.4% (*n* = 19) Black/African American, 4.1% (*n* = 5) Hispanic, 69.9% (*n* = 86) White, and 0.8% (*n* = 1) "Another race/ethnicity not listed here." In addition, 7% (*n* = 9) identified as more than one race/ethnicity listed. Of the 123 participants, 48.8% (*n* = 60) identified as solely a worker. Participants who identified as a student comprised 51.2% (*n* = 63) of the sample. Of those student participants, 22.8% (*n* = 28) indicated they were solely a student while 28.5% (*n* = 35) indicated they were

both a student and a worker. Amongst the students, the most common majors were in the College of Behavioral and Social Sciences (24.4%, *n* = 30), and the College of Health Professions (7.3%, *n* = 9). Students' current credit hours ranged from 3 to 18 credit hours in the semester, with a mean of 13.26 (*SD* = 3.28). Those who identified as workers showed that hours worked in a week ranged from zero to 84 hours, with a mean of 37.33 (*SD* = 15.45).

Materials

This study used two scales to measure disordered eating, one scale for perceived stress, as well as demographic questions. Additional measures were added to decrease the risk of demand characteristics (i.e., a brief measure for Generalized Anxiety Disorder (GAD-7), Spitzer et al., 2006; a short version of the Big Five Inventory, Rammstedt and John, 2006; a brief Locus of Control scale, Lumpkin, 1985). Four questions (see Appendix) were added as attention checks; however one question was removed during analyses due to misleading question wording and possible misinterpretation. Each participant had to pass at least two out of three of attention checks to be included in the analyses. Anyone who did not pass at least two was excluded from the data. All materials were administered through Qualtrics. Participants needed stable internet access and an electronic device to take the survey on, such as a computer, phone, or tablet.

The Perceived Stress scale is composed of 10 questions that assess general perceived stress of an individual (Cohen et al., 1994). Using a 5-point scale (0 = Never, 1 = Almost Never, 2 = Sometimes, 3 = Fairly Often, 4 = Very Often) the measure asked about the participants' thoughts and feelings regarding stress over the past month (e.g. "In the last month, how often have you found that you could not cope with all the things that you had to do?" and "In the last month, how often have you been upset because of something that happened unexpectedly?"; Cohen, 1994). Scores are calculated by summing all items. Reis et al. (2010) found Cronbach's

alpha coefficients ranged from 0.68 to 0.87. After running reliability tests, this study found Cronbach's alpha to be 0.90.

The measures of disordered eating were based on the Eating Disorder Examination Questionnaire (EDE-Q 6.0) and the Three-Factor Eating Questionnaire (TFEQ-R18). The EDE-Q 6.0 examines eating behavior on four subscales: eating concern, weight concern, shape concern, and restraint (Fairburn & Beglin, 2008). Questions address the last 28 days and use a 7-point scale (0 = no days, 1 = 1-5 days, 2 = 6-12 days, 3 = 13-15 days, 4 = 16-22 days, 5 = 23-27 days, 6 = everyday). An example of a question is, “Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?” (Fairburn & Beglin, 2008). All items are scored by finding the mean of both the subscale scores and the overall score. If participants only rated some items, a score was obtained by dividing the number of rated items so long as more than half the items have been rated. Luce and Crowther (1997) found Cronbach's alpha for all subscales to be acceptable and consistent over a two-week test-retest period (Cronbach’s alpha ranged from 0.78-0.93). After running reliability tests, this study found Cronbach's alpha to be 0.95 for the total scale and subscales ranged from 0.82 to 0.92.

The TFEQ-R18 is a scale measuring cognitive restraint (i.e., restriction with the intent of losing or controlling weight), emotional eating (i.e., eating in negative mood states), and uncontrolled eating (i.e., loss of control while eating and giving in to external triggers, such as smell; Karlsson et al., 2000; Nevanpera et al., 2012). The first thirteen questions are on a scale of “definitely true = 4, mostly true = 3, mostly false = 2, and definitely false = 1”. The final five questions have slightly different 4-point scales besides the last question which is a fill-in-the-blank question (“On a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you

want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never “giving in”), what number would you give yourself?”). All items are scored by finding the mean of both the subscale scores and the overall score. Lauzon and colleagues (2004) found Cronbach's alpha for all three subscales in adults to be acceptable (Cronbach’s alpha ranged from 0.83-0.87). After running reliability tests, this study found Cronbach's alpha to be 0.88 for the total scale and subscales ranged from 0.80 to 0.88.

The demographics portion of the survey contains self-constructed items gathering information on sex, gender identity, age, race/ethnicity, employment status, student status, weekly hours worked, credit hours per semester, and type of occupation. Employment status, student status, and type of occupation had the option of not applicable to gather information on those who did not fit within both the worker and student categories.

Procedure

The methods used to recruit were emails to various departments at Georgia Southern University (e.g., Institutional Assessment and Accreditation, College of Public Health, Student Conduct and Community Standards, and more) and a study posted on the Department of Psychology’s SONA platform. Anonymous Qualtrics links to the survey were provided on the emails (see Appendix for a copy of the recruitment email). Upon clicking on the provided link, participants were taken to the informed consent where they could find out more information about the study and choose to consent to participate or not. The survey was titled Emotions, Health, and Daily Experiences to avoid potential demand characteristics. Those who chose not to participate were taken to the end of the survey and presented with the debriefing page. Those who did consent to participate had access to the entirety of the survey. The study was completed anonymously. After completion of the survey, non-student participants had the opportunity to fill

out a separate form with their email to receive compensation for their participation; this information was not tied to their completed surveys. The first 85 non-students received an $10 Amazon gift card through email for participation (through funding awarded by the College of Graduate Studies grant). Student participants were automatically compensated with course credit through SONA after they completed the survey.

CHAPTER 3

RESULTS

Preliminary Analyses

Descriptive statistics were conducted for all variables which included means, standard deviations, and correlations. These are presented in Table 1. Results indicated that the Perceived Stress Scale, Eating Disorder Examination Questionnaire, and Three Factor Eating Questionnaire were all significantly and positively correlated with one another (see Table 2). A relation was observed whereby stress increased, participants' disordered eating also increased. Finally, results showed that group status was significantly correlated with stress, but not with disordered eating.

Group Differences

Statistically significant differences between groups on the proposed mediator and outcome variables were looked at (see Table 3). A between-groups MANOVA was conducted to analyze the data. Post-hoc univariate ANOVAs revealed a statistically significant relation among groups in perceived stress $F(2, 119) = 7.60$, $p < .001$, but not in the Eating Disorder Examination Questionnaire $F(2,119) = .18$, $p = .84$ or the Three Factor Eating Questionnaire $F(2,119) = .12$, $p = .89$. Post-hoc tests were conducted using Fisher's LSD test. Workers were statistically significantly lower on the rating of stress ($M = 25.85$, $SE = .83$) than students ($M = 29.68$, $SE = 1.21$) and student-workers ($M = 30.79$, $SE = 1.10$). There were no statistically significant differences between students and student-workers on stress levels.

Mediation Analyses

To examine the possible mediated pathway from group status (single or dual role commitment) to disordered eating through perceived stress, two mediation analyses were conducted using the PROCESS macro (model 4) and bootstrapping. Group status was broken up

into two categories: single role commitment (student only and worker only) and dual role commitment (student-worker). Mediation models were analyzed separately for the Eating Disorder Examination Questionnaire and the Three-Factor Eating Questionnaire. Group status was entered as the predictor variable, stress as the mediator, and disordered eating as the outcome variables (see Figures 1 and 2). Analysis of both disordered eating measures revealed an indirect connection from group status to disordered eating via perceived stress (EDE-Q 6.0: indirect effect = .25, $p < .05$, 95% bootstrap CI = .07-.49; TFEQ-R18: indirect effect = 2.18, $p < .05$, 95% bootstrap CI = .63-4.00). The results support the hypothesis that perceived stress is a mediator for group status and disordered eating. No statistically significant direct connection between group status and disordered eating was found for either the EDE-Q 6.0 (direct effect = -.11, $p = .59$; total effect = .13, $p = .55$) or the TFEQ-R18 (direct effect = -1.79, $p = .36$; total effect = .39, $p = .85$).

Exploratory Sex Analyses

Although not a main research question of the study, exploratory biological sex differences were examined through *t*-test analyses to see if sex differences were present for disordered eating behaviors, including the scale scores for the EDE-Q 6.0 and TFEQ-R18 and their subscales. As shown in Table 4, statistically significant sex differences were found for shape concern, weight concern (both subscales of the EDE-Q 6.0), emotional eating (subscale of the TFEQ-R18), and TFEQ-R18 total score. These statistically significant differences showed that on average females scored higher than males on three subscales as well as one overall measure. There were no other statistically significant differences between males and females for disordered eating behaviors in this sample.

In addition to the *t*-tests, exploratory mediation analyses of sex differences were conducted. To examine the possible mediated pathway from group status to disordered eating through perceived stress for males and females separately, four mediation analyses were conducted using the PROCESS macro (model 4) and bootstrapping. Mediation models for each sex were analyzed separately for the Eating Disorder Examination Questionnaire and the Three-Factor Eating Questionnaire. Group status was entered as the predictor variable, stress as the mediator, and disordered eating as the outcome variables (see Figures 3, 4, 5 and 6). Analysis of males with both disordered eating measures showed no indirect connection from group to disordered eating via perceived stress (EDE-Q 6.0: indirect effect = -.01, p = .97, 95% bootstrap CI = -.39-.36; TFEQ-R18: indirect effect = -.01, p = .99, 95% bootstrap CI = -1.59-1.46). Unlike in males, analysis of females with both disordered eating measures revealed an indirect connection from group to disordered eating via perceived stress (EDE-Q 6.0: indirect effect = .30, p < .05, 95% bootstrap CI = .08-.59; TFEQ-R18: indirect effect = 2.61, p < .05, 95% bootstrap CI = .72-4.94). No statistically significant direct connection between group and disordered eating was found for either the EDE-Q 6.0 (males: direct effect = .32, p = .61; total effect = .32, p = .62; females: direct effect = -.21, p = .38; total effect: .09, p = .70) or the TFEQ-R18 (males: direct effect = 3.93, p = .45; total effect = 3.92, p = .44; females: direct effect = -3.11, p = .16; total effect = -.50, p = .83) across males and females.

CHAPTER 4

DISCUSSION

The present study investigated the mediating role of perceived stress between group status and disordered eating behavior among Georgia Southern University students and employees. The aim was to understand if role commitments (i.e., being both a student and a worker) would predict perceived stress and disordered eating behaviors. Prior research shows that individuals who rate themselves as higher in perceived stress also tend to have higher rates of disordered eating (King et al., 2009; Skead et al., 2018). Results from the current study are consistent with previous findings; mediation analyses revealed that perceived stress was linked to disordered eating. Specifically, as levels of perceived stress rose, rates of disordered eating also rose. An indirect connection from group status to disordered eating via perceived stress was also found, however our evidence did not yield support for a direct connection from group status to disordered eating. Therefore, while we are unable to say that group status (i.e., having single or dual role commitments) is directly related to disordered eating, we do highlight the role of perceived stress as a mediator in this dynamic.

Analysis of groups showed that workers, students, and student-workers demonstrated no differences in disordered eating behaviors. Differences among the groups lay primarily in terms of perceived stress. Workers were statistically significantly lower in perceived stress than students and student-workers. This finding suggests a heightened need for stress management among the student population, with additional attention to disordered eating behavior because of stress.

Further, by sampling both males and females, the current study contributed to the literature on sex differences in disordered eating. Mediation analyses revealed an intriguing

difference between males and females. Analyses for both measures of disordered eating in females were consistent with overall analyses of group status. Females showed an indirect connection from group status to disordered eating via stress, with no indication of a direct connection. Males, however, showed neither an indirect connection nor a direct connection from group status to disordered eating. These results suggest that stress is not a mediator for males like it is for females. These findings echo points made in prior research that discuss a complex relationship and fundamental differences in disordered eating among sexes/gender identities (Thapilyal et al., 2018).

Despite the prevailing stigma that eating disorders primarily affect women, the current study found that males and females did not statistically significantly differ on most of the disordered eating scales examined here. Females were only higher on ratings of shape concern, weight concern, emotional eating, and the TFEQ-R18 total score. As mentioned above, these differences could be due to differing societal standards for male and female bodies (Thapilyal et al., 2018). Previous research shows that males are often less likely to be diagnosed with an eating disorder and often exhibit less severe eating pathology, which might explain why our results look a little different from other studies (Thapilyal et al., 2018). Rather than exclusively examining diagnosable eating disorders, the current study examined the broader concept of disordered eating. As a result, it is possible that more male participants identified with disordered eating patterns rather than strictly meeting the criteria for diagnosable eating disorders.

Implications

The present study offers more insight into group differences associated with health behaviors like stress and eating habits, both of which carry significant health implications. Given that group status was statistically significantly connected to stress levels, it is crucial for

education institutions to implement educational programs and initiatives centered around managing stress and supporting mental health. Similarly, workplaces should implement preventative measures to address occupational stress. By addressing stress proactively, educational institutions and workplaces can significantly lower stress, and in turn lower disordered eating behaviors.

In addition to prevention, this study offers insight into avenues of treatment. For those already experiencing disordered eating behaviors, treatment of underlying causes, such as stress, may be beneficial for improving the overall well-being of the individual and discontinuing the maladaptive eating habits. Implementing treatments to relieve stress and establish healthy coping mechanisms, promotes lasting improvements in both mental and physical well-being (Mosadeghrad, 2014).

The current study found statistically significant differences in three subscales and one overall measure when examining sex differences, meaning that male and female participants scored similarly on the remaining four subscales and one overall measure. An important implication of this finding is that there may be less sex differences associated with disordered eating than previously thought, therefore awareness and treatment of disordered eating in males should become normalized. Results do not support disordered eating as a "woman's disorder". In addition, a stronger focus on stress management to aid in the treatment and prevention of disordered eating in females is supported by this study, due to the finding that stress is a mediator for females but not males.

Limitations and Future Directions

A limitation of this study was the reliance on self-report questionnaires. Participants' responses may not capture complete and accurate information, especially when recalling past

experiences and emotions (i.e., reports of stress and disordered eating over the past month). Participants may have felt the need to report what is socially desirable; being forthcoming about eating habits and mental health may have been challenging due to stigma. Further, while questionnaires are a good source for gathering data, the use of food logs and qualitative data would give a more detailed perspective of disordered eating behaviors and experiences of stress (Siegel & Sawyer, 2019). For example, food logs can provide information on actual disordered eating behaviors on a daily basis as opposed to perceptions of disordered eating (e.g., "Over the past 28 days, on how many DAYS have such episodes of overeating occurred?" Fairburn & Beglin, 2008). Future research should incorporate additional measures to yield richer insights and offer a more thorough investigation.

The current study gathered information at a single time point, however, future research should consider the benefits of a longitudinal study. By utilizing multiple time points of data collection, a longitudinal design can reveal how perceived stress and disordered eating behaviors develop and relate over time. In addition, temporal precedence of variables (e.g., stress occurs before disordered eating behaviors) could be observed which the current study cannot draw any conclusions on in a single time point design. Ideally, mediation studies include a temporal element (i.e., predictor occurs first, mediator occurs later in time, outcomes occur last), so future studies examining a mediation relation like the current study should include multiple time points.

Future research should also include measures of role conflict and strain. While the current study broadly categorized participants into student, worker, and student-worker, a more detailed approach to grouping is warranted for future investigations. It was assumed that student-workers, due to their dual role commitments, would experience greater role conflict and strain compared to workers and students, and future studies could specifically investigate this assumption.

Additional sources of role conflict, such as being a worker and parent, should be assessed to expand on the relation between stress, disordered eating, and role conflict.

Furthermore, expanding the sample outside of the Georgia Southern University population would improve generalizability. A broader and more diverse representation of roles and demographics would provide a more nuanced understanding of the observed relations between perceived stress and disordered eating behaviors.

Finally, future research should further explore the nuances of sex differences among both males and females in disordered eating. A limitation of this study in understanding sex differences lies in sample size. It is important to note that males only had a sample size of 27 participants, which may have impacted power. Therefore, there remains a gap in our understanding of how disordered eating differs or not between sexes. Conducting further analyses on perceived stress levels within both sexes and how that relates to eating behavior would enhance our understanding of these concepts.

Conclusion

In conclusion, the findings highlight how perceived stress acts as a mediator between group status (i.e., worker, student, or student-worker) and disordered eating. It is crucial to understand how stress plays a role in eating habits, as individuals may alter their eating as a coping strategy (Jordan et al., 2016; Ozier et al., 2008). In the current study, males and females scored statistically similar on many measures of disordered eating, showing a striking similarity that is not typically observed. However, the sexes differed on mediation analyses, which raises more questions on their exact similarities and differences. Further investigation should explore the observed relations with more diverse samples of students, professions, and measurements of role conflict.

REFERENCES

American Psychological Association. (2022, October). *Stress*. American Psychological Association. Retrieved March 25, 2023, from https://www.apa.org/topics/stress

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. Work & stress, 22(3), 187-200.

Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. Measuring stress: A guide for health and social scientists, 10(2), 1-2.

Costarelli, V., & Patsai, A. (2012). Academic examination stress increases disordered eating symptomatology in female university students. Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity, 17, e164-e169.

Delinsky, S. S., & Wilson, G. T. (2008). Weight gain, dietary restraint, and disordered eating in the freshman year of college. Eating behaviors, 9(1), 82-90.

Fairburn, C. G., & Beglin, S. J. (2008). Eating disorder examination questionnaire. Cognitive behavior therapy and eating disorders, 309, 313.

Fleurbaix Laventie Ville Sante (FLVS) Study Group Blandine de Lauzon delauzon@ vjf. inserm. fr Romon Monique Deschamps Valérie Lafay Lionel Borys Jean-Michel Karlsson Jan Ducimetière Pierre Charles M. Aline. (2004). The Three-Factor Eating Questionnaire-R18 is able to distinguish among different eating patterns in a general population. The Journal of nutrition, 134(9), 2372-2380.

Gralle, A. P. B. P., Moreno, A. B., Juvanhol, L. L., Fonseca, M. D. J. M. D., Melo, E. C. P., Nunes, M. A. A., ... & Griep, R. H. (2017). Job strain and binge eating among Brazilian

workers participating in the ELSA-Brasil study: does BMI matter?. Journal of occupational health, 59(3), 247-255.

Hecht, L. M. (2001). Role conflict and role overload: Different concepts, different consequences. Sociological Inquiry, 71(1), 111-121.

Higgs S, Spetter MS. Cognitive Control of Eating: The Role of Memory in Appetite and Weight Gain. Curr Obes Rep. 2018 Mar;7(1):50-59. doi: 10.1007/s13679-018-0296-9. PMID: 29430616; PMCID: PMC5829122.

Hudson, J. I., Hiripi, E., Pope Jr, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. Biological psychiatry, 61(3), 348-358.

Jordan, T. R., Khubchandani, J., & Wiblishauser, M. (2016). The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. Nursing Research and Practice, 2016.

Karlsson, J., Persson, LO., Sjöström, L. et al. Psychometric properties and factor structure of the Three-Factor Eating Questionnaire (TFEQ) in obese men and women. Results from the Swedish Obese Subjects (SOS) study. Int J Obes 24, 1715–1725 (2000). https://doi.org/10.1038/sj.ijo.0801442

King, Keith A., Vidourek, Rebecca, & Schwiebert, Michelle (2009). Disordered eating and job stress among nurses. Journal of Nursing Management, 17(7), 861–869. https://doi.org/10.1111/j.1365-2834.2009.00969.x

Luce, K. H., & Crowther, J. H. (1999). The reliability of the eating disorder examination—Self-report questionnaire version (EDE-Q). International Journal of Eating Disorders, 25(3), 349-351.

Luo, Y., Zhang, Y., Sun, X., Dong, J., Wu, J., & Lin, X. (2022). Mediating effect of self-control in the relationship between psychological distress and food addiction among college students. Appetite, 179, 106278.

Masuda, A., Price, M., Anderson, P. L., & Wendell, J. W. (2010). Disordered eating-related cognition and psychological flexibility as predictors of psychological health among college students. Behavior Modification, 34(1), 3-15.

Mohammad Mosadeghrad, A. (2014). Occupational stress and its consequences: Implications for health policy and management. Leadership in Health Services, 27(3), 224-239.

Morris MJ, Beilharz JE, Maniam J, Reichelt AC, Westbrook RF. Why is obesity such a problem in the 21st century? The intersection of palatable food, cues and reward pathways, stress, and cognition. Neurosci Biobehav Rev. 2015 Nov; 58:36-45. doi: 10.1016/j.neubiorev.2014.12.002. Epub 2014 Dec 10. PMID: 25496905.

Nevanperä, N. J., Hopsu, L., Kuosma, E., Ukkola, O., Uitti, J., & Laitinen, J. H. (2012). Occupational burnout, eating behavior, and weight among working women. The American journal of clinical nutrition, 95(4), 934-943.

Ozier, A. D., Kendrick, O. W., Leeper, J. D., Knol, L. L., Perko, M., & Burnham, J. (2008). Overweight and obesity are associated with emotion-and stress-related eating as measured by the eating and appraisal due to emotions and stress questionnaire. *Journal of the American Dietetic Association*, *108*(1), 49-56.

Pomaki, G., Supeli, A., & Verhoeven, C. (2007). Role conflict and health behaviors: Moderating effects on psychological distress and somatic complaints. Psychology and health, 22(3), 317-335.

American Psychiatric Association - What are Eating Disorders? (2023, February). https://www.psychiatry.org/patients-families/eating-disorders/what-are-eating-disorders

Reis, R. S., Hino, A. A., & Añez, C. R. (2010). Perceived stress scale. J. Health Psychol, 15(1), 107-114.

Rutledge T, Linden W. To eat or not to eat: affective and physiological mechanisms in the stress-eating relationship. J Behav Med. 1998 Jun;21(3):221-40. doi: 10.1023/a:1018784015771. PMID: 9642569.

SHRM. (n.d.). Developing and Sustaining Employee Engagement. https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/sustainingemployeeengagement.aspx

Shukri, M., Jones, F., & Conner, M. (2018). Relationship between work-family conflict and unhealthy eating: Does eating style matter? Appetite, 123, 225-232.

Skead, N.K., Rogers, S.L. and Doraisamy, J. (2018) "Looking beyond the mirror: Psychological distress; disordered eating, weight and shape concerns; and maladaptive eating habits in lawyers and law students," International Journal of Law and Psychiatry, 61, pp. 90–102. Available at: https://doi.org/10.1016/j.ijlp.2018.06.002.

Thapliyal, P., Hay, P., & Conti, J. (2018). Role of gender in the treatment experiences of people with an eating disorder: a metasynthesis. Journal of eating disorders, 6(1), 1-16.

Wallis, D. J., & Hetherington, M. M. (2009). Emotions and eating. Self-reported and experimentally induced changes in food intake under stress. *Appetite*, *52*(2), 355-362.

Wei, N. L., Quan, Z. F., Zhao, T., Yu, X. D., Xie, Q., Zeng, J., ... & Zhu, J. H. (2019). Chronic stress increases susceptibility to food addiction by increasing the levels of DR2 and MOR in the nucleus accumbens. *Neuropsychiatric Disease and Treatment*, 1211-1229.

What are eating disorders? Psychiatry.org - What are Eating Disorders? (n.d.). Retrieved March 25, 2023, from https://www.psychiatry.org/patients-families/eating-disorders/what-are-eating-disorders

Willmer, M., Westerberg Jacobson, J., & Lindberg, M. (2021). An exploratory analysis of work engagement among women with and without disordered eating. BMC Women's Health, 21, 1-6.

World Health Organization. (n.d.). Burn-out an "Occupational phenomenon": International Classification of Diseases. World Health Organization. https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases

APPENDIX

Survey Instruments

Demographics

1. What is your age?
2. What is your biological sex? (male, female, non-binary/third gender, not listed here, prefer not to say)
3. What is your gender? (fill in)
4. Check all that apply. (Asian/Pacific Islander, Black/African American, Hispanic, Native American, MENA, White, Another Race/Ethnicity not listed here)
5. How often do you engage in exercise? (Never (1), About once a week or less (2), A few times a week (3), Almost every day (4))
6. How much do you agree with the following statements: *Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)*
    a. I have caffeine on a daily basis to keep myself on track with my responsibilities.
    b. I feel dependent on caffeine to be productive.
7. Are you currently a student enrolled in college or university? (Yes/No)
    a. If so, how many credit hours are you currently enrolled in? (enter a whole number) __
    b. What college does your major fall under? (Arts and Humanities, Behavioral and Social Sciences, Engineering and Computing, Education, Science and Mathematics, Public Health, Business, Health Professions)
8. Are you currently employed?
    a. If so, select one… (part time, full time)

b. On average, how many hours a week do you work? (enter a whole number)
c. How long have you been employed? (enter a whole number)
d. What is your occupation/job title?

Perceived Stress Scale (Cohen et al., 1994)

0 = Never, 1 = Almost Never, 2 = Sometimes, 3 = Fairly Often, 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and "stressed"?
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Eating Disorder examination questionnaire (EDE-Q 6.0) (Fairburn & Beglin, 2008)

ON HOW MANY OF THE PAST 28 DAYS ...

0 = no days, 1 = 1-5 days, 2 = 6-12 days, 3 = 13-15 days, 4 = 16-22 days, 5 = 23-27 days, 6 = every day

1. Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?
2. Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?
3. Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?
4. Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?
5. Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?
6. Have you had a definite desire to have a totally flat stomach?
7. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?
8. Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?
9. Have you had a definite fear of losing control over eating?
10. Have you had a definite fear that you might gain weight?
11. Have you felt fat?
12. Have you had a strong desire to lose weight?

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)....

13. Over the past 28 days, how many times have you eaten what other people would regards as an unusually large amount of food (given the circumstances)? ___
14. On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)? ___
15. Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)? ___
16. Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight? ___
17. Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight? ___
18. Over the past 28 days, how many times have you exercised in a "driven" or "compulsive" way as a means of controlling your weight, shape or amount of fat, or to burn off calories? ___

Questions 19 to 21: Please circle the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

19. Over the past 28 days, on how many days have you eaten in secret (i.e, furtively)? ... Do not count episodes of binge eating.

0 = no days, 1 = 1-5 days, 2 = 6-12 days, 3 = 13-15 days, 4 = 16-22 days, 5 = 23-27 days, 6 = every day

20. On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating.

    0 = none of the times, 1 = a few of the times, 2 = less than half, 3 = half of the times, 4 = more than half, 5 = most of the time, 6 = every time

21. Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating.

    0 = not at all, 1-2 = slightly, 3-4 = moderately, 5-6 = markedly

Questions 22 to 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

ON HOW MANY OVER THE PAST 28 DAYS ...

0 = not at all, 1-2 = slightly, 3-4 = moderately, 5-6 = markedly

22. Has your weight influenced how you think about (judge) yourself as a person?
23. Has your shape influenced how you think about (judge) yourself as a person?
24. How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?
25. How dissatisfied have you been with your weight?
26. How dissatisfied have you been with your shape?

27. How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?

28. How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?

The Three-Factor Eating Questionnaire (TFEQ-R18) (Karlsson et. Al. 2000)

Please read each statement and select from the multiple choice options the answer that indicates the frequency with which you find yourself feeling or experiencing what is being described in the statements below.

Definitely true (4)/ mostly true (3)/ mostly false (2)/ definitely false (1)

1. When I smell a delicious food, I find it very difficult to keep from eating, even if I have just finished a meal.
2. I deliberately take small helpings as a means of controlling my weight.
3. When I feel anxious, I find myself eating.
4. Sometimes when I start eating, I just can't seem to stop.
5. Being with someone who is eating often makes me hungry enough to eat also.
6. When I feel blue, I often overeat.
7. When I see a real delicacy, I often get so hungry that I have to eat right away.
8. I get so hungry that my stomach often seems like a bottomless pit.
9. I am always hungry so it is hard for me to stop eating before I finish the food on my plate.
10. When I feel lonely, I console myself by eating.
11. I consciously hold back at meals in order not to weight gain.

12. I do not eat some foods because they make me fat.
13. I am always hungry enough to eat at any time.
14. How often do you feel hungry?

    Only at meal times (1)/ sometimes between meals (2)/ often between meals (3)/almost always (4)

15. How frequently do you avoid "stocking up" on tempting foods?

    Almost never (1)/ seldom (2)/ moderately likely (3)/ almost always (4)

16. How likely are you to consciously eat less than you want?

    Unlikely (1)/ slightly likely (2)/ moderately likely (3)/ very likely (4)

17. Do you go on eating binges though you are not hungry?

    Never (1)/ rarely (2)/ sometimes (3)/ at least once a week (4)

18. On a scale of 1 to 8, where 1 means no restraint in eating (eating whatever you want, whenever you want it) and 8 means total restraint (constantly limiting food intake and never "giving in"), what number would you give yourself?

Big Five Inventory-10 (BFI-10)

Disagree strongly (1), Disagree a little (2), Neither agree nor disagree (3), Agree a little (4), Agree strongly (5)

Instruction: How well do the following statements describe your personality?

I see myself as someone who…

1. is reserved

2. is generally trusting
3. tends to be lazy
4. is relaxed, handles stress well
5. has few artistic interests
6. is outgoing, sociable
7. tends to find fault with others
8. does a thorough job
9. gets nervous easily
10. has an active imagination

Rotter's Locus of Control Brief Scale (Lumpkin, 1985)

Strongly disagree (1), Somewhat disagree (2), neither agree nor disagree (3), Somewhat agree (4), Strongly agree (5)

1. When I make plans, I am almost certain that I can make them work.
2. Getting people to do the right things depends upon ability; luck has nothing to do with it.
3. What happens to me is my own doing.
4. Many of the unhappy things in people's lives are partly due to bad luck.
5. Getting a good job depends mainly on being in the right place at the right time.
6. Many times I feel that I have little influence over the things that happen to me.

Distractor Questions/Attention Checks

(Incorporated throughout using the scale appropriate)

1. I eat concrete every day
2. The sky is green*
3. I have answered all questions to the best of my ability
4. I have not answered any questions to the best of my ability

*Question removed during analysis due to misleading information

Email Recruitment

Subject: Research Opportunity: Seeking Participants for My Thesis Study

Hello,

I hope this email finds you in good health. My name is Tori Byars, and I am a second-year experimental psychology graduate student at Georgia Southern University. I am reaching out to inform you about an exciting research opportunity and to kindly request your participation.

I am currently conducting my thesis research. As part of my study, I am recruiting participants from various departments within the university who are **employees** (not currently enrolled as a student). Your insights and experiences are invaluable to my research.

The study involves a brief questionnaire and will only take no more than 30 minutes to complete. To express my gratitude for your participation, I am pleased to offer the first 85 participants a $10 Amazon gift card upon completion of the full survey.

Additionally, I kindly ask you to consider sharing this email with your colleagues in your department, as their involvement would also be greatly appreciated.

Your participation in this study will remain confidential, and the information gathered will be used solely for research purposes. If you are willing to participate, please use the link provided at the end of this email.

Thank you very much for considering my request. I am grateful for your time and support. If you have any questions or require further information, please do not hesitate to contact me at vb05458@georgiasouthern.edu.

Warm regards,

Tori Byars

Debriefing

Thank you for completing our survey!

We appreciate your valuable time and effort in participating in our research study.

In the event you feel distressed from the content of this study, we encourage you to contact the Georgia Southern Counseling Center:

Statesboro Location

Forest Drive, Building 435

Statesboro, GA 30460

Phone: **912-478-5541**

Armstrong Location

11935 Abercorn Street

Savannah, GA 31419-1997

Phone: **912-344-2529**

For additional help, call the Mental Health Hotline 24/7 at **866-903-3787**

College of Behavioral and Social Sciences

Department of Psychology

Informed Consent for Workers

for

Emotions, Health, and Daily Experiences

My name is Tori Byars, I am a second-year graduate student completing a Masters in Experimental Psychology. I am conducting a survey for my thesis.

The purpose of this research is to investigate the relationship between life experiences, overall health, and perceived stress among students and workers over the age of 18.

Participation in this research will include completion of a survey that will take no more than 30 minutes to complete. During the survey, you will be asked a series of questions about your mental and physical health and factors that influence your daily life.

You may experience some discomfort responding to personal questions; however, we do not anticipate any risks greater than those experienced on a daily basis. If your participation in this study results in any stress, apprehension, or anxiety, please contact the Georgia Southern Student Counseling center at (912) 478-5541 (Statesboro Campus) or (912) 344-2529 (Armstrong/Liberty Campus) For additional help beyond Georgia Southern University, call the Mental Health Hotline 24/7 at 866-903-3787.

The benefits to you as a participant include compensation for participating. The benefits to society include a deeper understanding of the psychological phenomena being studied and greater knowledge on the subject for prevention and treatment efforts.

Ensuring confidentiality in this research is our primary concern. Survey data will be gathered utilizing the Qualtrics reporting system. Your responses within the Qualtrics survey will remain entirely anonymous, with no collection of identifying information or IP addresses. The survey data will be securely stored on a password-protected website and within a password-protected cloud folder for a minimum of three years after the study's conclusion. Access to the data files and survey responses within the folder will be restricted to the principal investigator and co-investigators. Your identity will never be disclosed by name in the dataset or in any reports derived from this study, ensuring the preservation of your participant confidentiality. Any

subsequent use of records and data will strictly adhere to standard data use policies, safeguarding the anonymity of both individuals and institutions involved.

Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at 912-478-5465 or irb@georgiasouthern.edu.

Participants who complete the full survey will be compensated with a $10 Amazon gift card sent through email (available to the first 85 participants). At the end of the survey, a link will be given to a separate Qualtrics survey where you can input your email address. This email will remain separate from the survey in order to maintain confidentiality. Only participants who complete the full survey will be compensated.

Your involvement in this study is entirely voluntary. Should you choose to participate, you retain the right to withdraw your participation at any point during the survey. You are not obligated to respond to any questions you do not wish to answer, and you can use the Qualtrics forwarding "→" feature to skip any items you prefer not to address or exit the survey entirely. There are no consequences for opting not to participate in the study. You are free to decide at any moment that you no longer wish to continue your participation, and you can withdraw without facing any penalties or repercussions. Please note, however, that full completion of the survey is necessary to receive the gift card.

You must be 18 years of age or older, an employee at Georgia Southern University, and not currently enrolled as a student to consent to participate in this research study.

You will be given a copy of this consent form to keep for your records. This project has been reviewed and approved by the GS Institutional Review Board under tracking number H24091.

Title of Project: Emotions, Health, and Daily Experiences

Principal Investigator: Tori Byars, vb05458@georgiasouthern.edu

Research Advisor: Dr. Nicolette Rickert, (912) 478-7105, nrickert@georgiasouthern.edu

Please select an option below to indicate whether you agree to participate in this research:

- o Yes, I read the terms above and consent to participate in this research.
- o No, I do not consent to participate in this research.

College of Behavioral and Social Sciences

Department of Psychology

Informed Consent for Students

for

Emotions, Health, and Daily Experiences

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Participants have the right to ask questions and have those questions answered. If you have questions about this study, please contact the researcher named above or the researcher's faculty advisor, whose contact information is located at the end of the informed consent. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at 912-478-5465 or irb@georgiasouthern.edu.

Completing the survey will result in academic compensation for 0.5 credits for SONA course requirements or extra credit opportunities. Only participants who complete the full survey will be compensated.

Your involvement in this study is entirely voluntary. Should you choose to participate, you retain the right to withdraw your participation at any point during the survey. You are not obligated to respond to any questions you do not wish to answer, and you can use the Qualtrics forwarding "→" feature to skip any items you prefer not to address or exit the survey entirely. There are no consequences for opting not to participate in the study. You are free to decide at any moment that you no longer wish to continue your participation, and you can withdraw without facing any penalties or repercussions. Please note, however, that full completion of the survey is necessary to receive course credit.

You must be 18 years of age or older and a current Georgia Southern University student to consent to participate in this research study.

You will be given a copy of this consent form to keep for your records. This project has been reviewed and approved by the GS Institutional Review Board under tracking number H24091.

Title of Project: Emotions, Health, and Daily Experiences

Principal Investigator: Tori Byars, vb05458@georgiasouthern.edu

Research Advisor: Dr. Nicolette Rickert, (912) 478-7105, nrickert@georgiasouthern.edu

Please select an option below to indicate whether you agree to participate in this research:

- Yes, I read the terms above and consent to participate in this research.
- No, I do not consent to participate in this research.

Figure 1

Mediation Model for EDE-Q 6.0

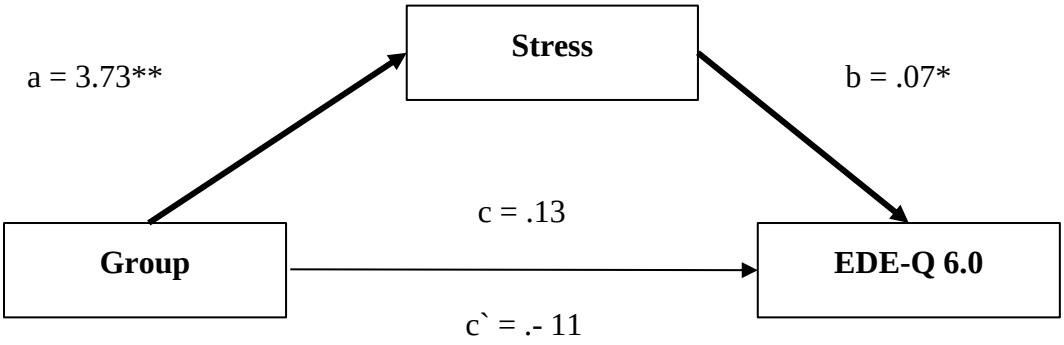

Figure 2

Mediation Model for TFEQ-R18

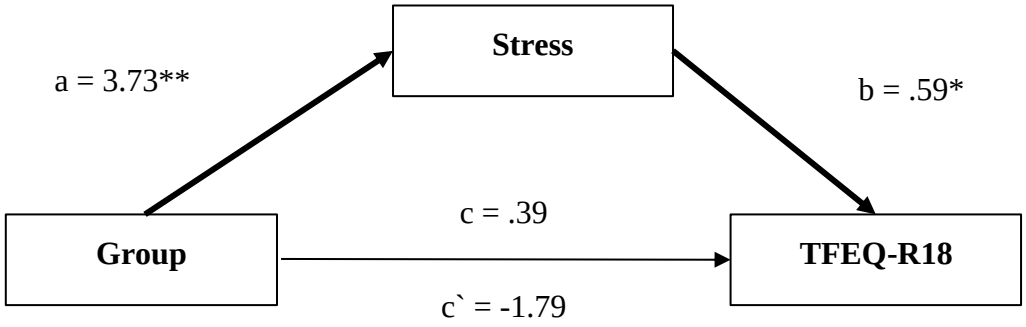

Figure 3

Mediation Model for EDE-Q 6.0 in Males

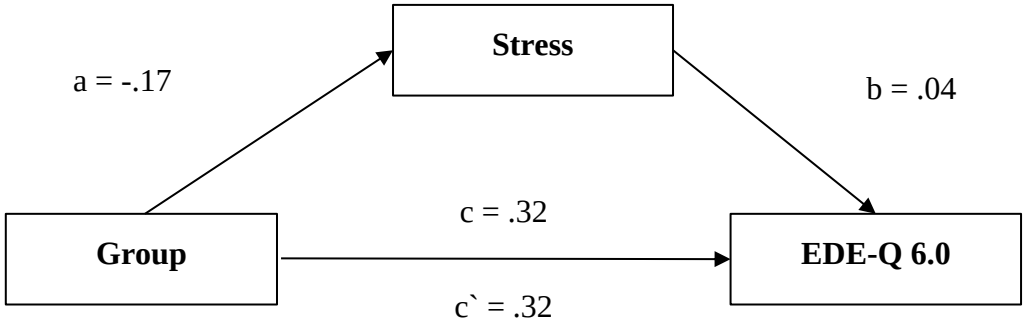

Figure 4

Mediation Model for TFEQ-R18 in Males

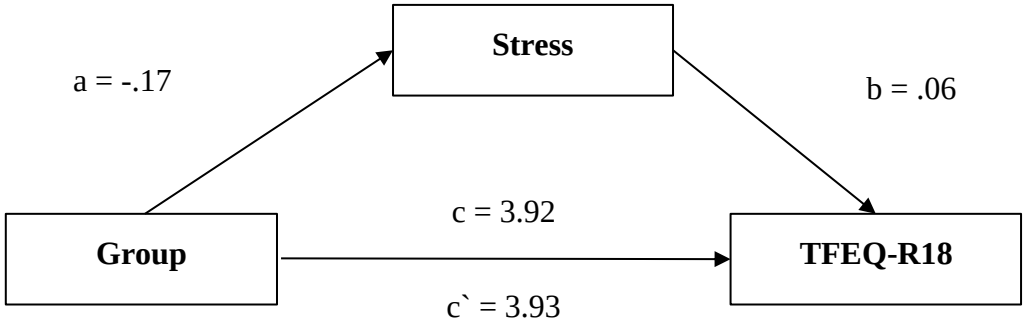

Figure 5

Mediation Model for EDE-Q 6.0 in Females

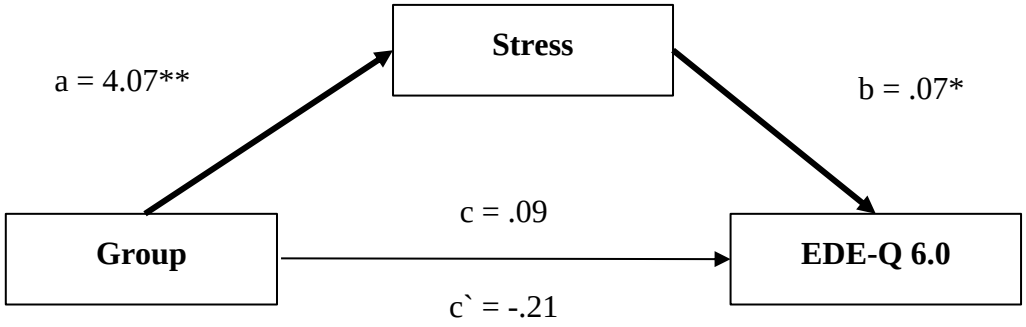

Figure 6

Mediation Model for TFEQ-R18b in Females

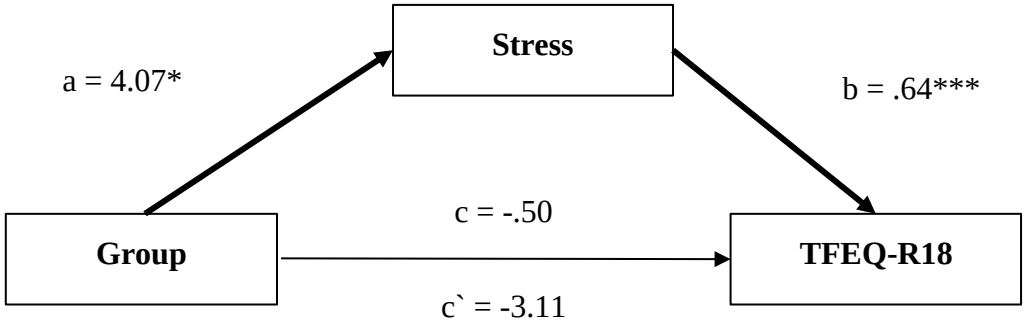

Table 1
Descriptive Statistics for All Variables

Variable	*M*	*SD*
Stress	28.16	6.73
EDE-Q 6.0	2.30	1.09
Restraint subscale	2.38	1.50
Eating Concern subscale	1.72	1.09
Shape Concern subscale	2.74	1.32
Weight Concern subscale	2.35	1.09
TFEQ-R18	38.49	9.94
Emotional Eating subscale	6.16	2.61
Cognitive Restraint subscale	14.96	4.84
Uncontrolled Eating subscale	17.37	5.92

Note. EDE-Q 6.0 = Eating Disorder Examination Questionnaire; total score and all subscales range from 0 to 6. TFEQ-R18 = Three Factor Eating Questionnaire-R18; total score and all subscales range from 1 to 4.

Table 2
Correlations

	Stress	EDE-Q 6.0	TFEQ-R18
Stress	–		
EDE-Q 6.0	.393**	–	
TFEQ-R18	.379**	.638**	–

Note. EDE-Q 6.0 = Eating Disorder Examination Questionnaire, TFEQ-R18 = Three Factor Eating Questionnaire-R18.
** $p < .01$

Table 3

	Worker		Student		Student-Worker	
	M	*SE*	*M*	*SE*	*M*	*SE*
EDE-Q 6.0	2.27[a]	.14	2.26[a]	.21	2.40[a]	.19
TFEQ-R18	38.00[a]	1.30	39.04[a]	1.90	38.72[a]	1.72
Perceived Stress	25.85[a]	.83	29.68[b]	1.21	30.79[b]	1.10

Group Means

Note. Group means with the same superscript were not statistically significantly different from one another for each variable.

Table 4
Exploratory T-Test Analyses Examining Sex Differences in Disordered Eating Behaviors

	Male		Female		*t*(123)	Cohen's *d*
	M	*SD*	*M*	*SD*		
EDE-Q 6.0 Total Score	2.01	1.00	2.38	1.10	1.57	.34
Restraint	2.61	1.49	2.31	1.50	0.91	.20
Eating Concern	1.43	0.91	1.81	1.23	1.63	.36
Shape Concern	2.25	1.28	2.89	1.30	2.27*	.50
Weight Concern	1.77	0.95	2.52	1.07	3.30**	.72
TFEQ-R18 Total Score	35.02	8.03	39.30	10.09	2.03*	.44
Cognitive Restraint	13.61	4.29	15.35	4.92	1.66	.36
Uncontrolled Eating	16.22	5.23	17.52	5.97	1.02	.22
Emotional Eating	5.19	2.43	6.43	2.62	2.20*	.48

* $p < .05$, ** $p < .01$