

**Explanatory Model of Behaviors and Stress of Women Who Enter or Aspire to Enter  
Professional Careers in Agriculture**

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## **Explanatory Model of Behaviors and Stress of Women Who Enter or Aspire to Enter Professional Careers in Agriculture**

### **Introduction**

Mental health is a major crisis worldwide. In the United States, mental health concerns can be attributed to daily stressors, cultural barriers, or unhealthy eating habits which can directly affect one's psychological and physical health (Yau & Potenza, 2013). Among other occupations, women in school-based agricultural teaching positions are particularly vulnerable. Baxter et al. (2011) reported "many [female agricultural teachers] perceived barriers . . . from community members; criticisms from other teachers and administrators; sexual discrimination . . . bias; job competency; and attitudes regarding a female agriculture teacher" (p.13). Despite these workforce challenges, females make up 45.7% of agricultural educators in the United States (Zippia, Inc., 2022). "Perceived stress is the degree to which one's life situations are appraised as unpredictable, uncontrollable, and overloading" (Choenarom, 2005, p.19). As stated by Richardson et al. (2015), "high perceived stress . . . has been associated with worse diet quality, greater intake of snack food, and binge eating" (p. 2). This was further supported by Fujishiro et al. (2015), who stated "women with higher BMI may be more vulnerable to BMI gain when exposed to constant work stress" (p. 1399). Although there are substantially more women employed within the agriculture industry, specifically agricultural education and extension, there is little to no research as to how their daily and occupational stressors may affect their mental health. This study aims to address the AAAE National Research Value – Fostering Healthy Living, as we analyze the stress of women employed in or directly associated with agriculture and the direct and indirect effects of stress on their eating behaviors and subsequent health outcomes by proposing an explanatory model of the women who participated in our study.

### **Conceptual Framework**

According to Ajzen (2002), control over execution of a behavior depends on the presence of various internal and external factors that may serve to facilitate or interfere. As such, this study analyzes age, marital status, spousal support, and other socioeconomic factors, along with the Perceived Stress Scale (PSS) and the Three Factor Eating Questionnaire (TFEQ). The PSS determines the degree to which one's life situations are appraised as stressful, and therefore was used as a measure in this study. The TFEQ measures cognitive restraint, uncontrolled eating, and emotional eating and was used to measure eating behaviors. An individual's control over behavior regarding internal and external factors may be negatively associated with cognitive restraint, which is therefore negatively associated to uncontrolled eating. Additionally, there is a positive association between uncontrolled eating and emotional eating to BMI. As such, an individual's perceived stress may be directly associated with abnormal eating behaviors and BMI.

### **Methodology**

A questionnaire which combined the TFEQ and the PSS 42 items was administered through Qualtrics. An anonymous link to the questionnaire was distributed to two Agricultural Education departments at Texas A&M and Sam Houston State Universities. The link was also posted on women-based agricultural groups on social media platforms, including Facebook and Twitter, resulting in a purposive sample. A structural equations model (SEM) was constructed after creating a detailed measurement model through a confirmatory factor analysis. The model fit

statistics suggest that the SEM fit the data well. Our findings are considered exploratory only and may not be generalized beyond our accepting sample. Our data were collected between September 2021 through December 2021.

### Results

Of the 337 participants, the average age was 30 ( $SD = 12.81$ ), average self-reported body mass index was 27.14, and the average self-reported level of stress was 3.32 measured on a 5-point Likert scale. The relationship between stress and emotional eating had a negative correlation ( $r = -.27$ ). Similarly, the correlation between stress and uncontrolled eating was not significant. When comparing emotional eating and BMI, the data revealed a low negative association ( $r = -.26$ ). The relationship between BMI and weight displayed a very strong association of ( $r = .94$ ). Descriptive statistics revealed a substantial association between age and marital status ( $r = .61$ ). The data also revealed a low negative association between age and stress ( $r = -.27$ ). Furthermore, it was discovered that the relationship between age and stress displayed a low association. When analyzing the data, the relationship between stress and spousal support had low association ( $r = .25$ ). There was a moderate association discovered between emotional eating and uncontrolled eating ( $r = .49$ ). The results imply that high levels of stress can lead to abnormal eating behaviors, and thus higher BMIs of women in agriculture.

### Conclusions

The findings in this study display the importance of mental health of women working within a male dominated and labor-intensive industry such as agriculture, as well as stress, and eating behaviors. This study confirmed the indirect pathway from higher levels of stress to higher BMIs through emotional eating behaviors. The findings in this study also suggest that elevated levels of perceived stress are related to cognitive restraint, uncontrolled eating, and emotional eating behaviors, which is related to BMI. The ideal BMI range for women is 18.5-24.9 (Center for Disease Control, 2022). The elevated average BMI shown in this study shows the importance of evaluating the relationship of stress, eating behaviors, and BMI of women in agriculture. These findings are supported by previous research that perceived stress was positively associated with uncontrolled and emotional eating which might in turn contribute to severe obesity (Richardson et al., 2015; Järvelä-Reijonen et al., 2016). Perceived stress is associated with unfavorable eating behaviors and can be seen when observing the positive relationships between perceived stress and cognitive restraint, uncontrolled eating, and emotional eating. The findings of this study clarify the underlying mechanism between stress levels and BMIs. Finally, higher stress levels among women are associated with unhealthy eating behaviors, and thus contributing to weight gain.

### Recommendations

This study has a few limitations. Since the data was obtained via self-reported questionnaire, measurement errors may be an issue. The questionnaire included sensitive material relating to weight, eating behaviors, and mental health, so many respondents may have felt uncomfortable answering such questions. This study should be replicated with a random, more targeted sample of women in agriculture and disaggregated based upon specific careers. Since women experiencing increased stress levels tend to turn to food to alleviate their stress, manufacturers should promote the consumption of healthy food as a means of coping with stress.

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