

Overweight and Obesity Are Associated with Emotion- and Stress-Related Eating as Measured by the Eating and Appraisal Due to Emotions and Stress Questionnaire

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Abstract:

Objective Identify if constructs from the Eating and Appraisal Due to Emotions and Stress Model, including Emotion and Stress Related Eating, Appraisal of Ability and Resources to Cope, and Appraisal of Outside Influences and Stressors, were related to overweight and obesity.

Design Data were collected from a cross-sectional study using the Eating and Appraisal Due to Emotions and Stress Questionnaire.

Subjects/Setting Convenience sample from a southeastern public university, including staff and faculty (n=822) with ages ranging from 18 to 83 years and 55.8% of the sample being overweight or obese.

Statistical analysis performed Total sum scores were given to each construct and converted to quartiles. Lower quartiles represented higher stress- or emotion-related eating and more compromised appraisal skills or resources to cope. χ^2 Analyses were used to identify variables associated with overweight and obesity. Forward stepwise logistic regression (n=783) was used to identify the independent association of each significant variable with overweight and obesity.

Results A model including race, sex, life stage, and job category as covariates, with a cumulative R^2 of 0.075 was produced. Emotion- and Stress-Related Eating remained in the model during stepwise regression producing a cumulative $R^2=0.265$. Individuals scoring in the lowest quartiles for Emotion- and Stress-Related Eating were 13.38 times more likely to be overweight or obese, compared with individuals scoring in the highest quartiles.

Conclusions The Eating and Appraisal Due to Emotions and Stress Model construct of Emotion- and Stress-Related Eating as measured by the Eating and Appraisal Due to Emotions and Stress Questionnaire can be used to assess nontraditional factors that contribute to overweight and obesity.

Article:

An estimated 65% of US adults are currently either overweight or obese (1), defined as having a body mass index (BMI; calculated as kg/m^2) ≥ 25 . Although the knowledge base about weight management and nutrition continues to expand, little progress has been made in long-term maintenance interventions (2-6), excluding surgery (3). Behavior modification continues to be the cornerstone of obesity intervention (7). Historically, traditional behavioral interventions emphasize adjustments in food intake, increases in physical activity, and increased knowledge, which reduces weight management to a simplistic equation (8) of “energy in equaling energy out.” This equation creates the illusion that individuals can attain their goals simply by adjusting these selected variables. Although an energy deficit is necessary for reducing body weight, weight loss has been difficult to sustain over the long term (3) and often does not explore an individual’s relationship with food. In addition, many individuals have the knowledge to implement healthful lifestyle practices, but do not operationalize their knowledge. Therefore, additional variables need to be considered in the weight-management equation because, when traditional variables are used and modified alone, sustained weight management is unsuccessful (9), with up to 80% of individuals who lose weight gradually regaining it back (10).

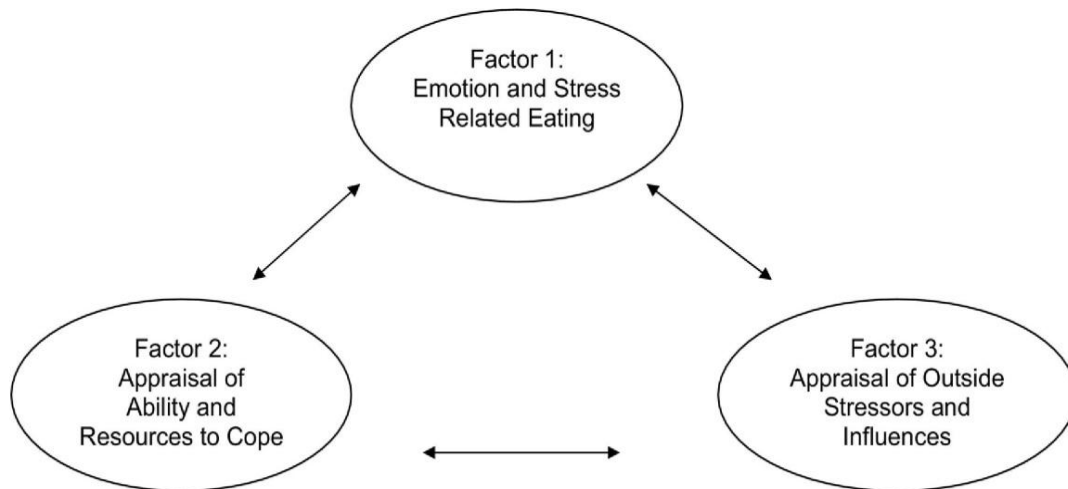


Figure 1. The Eating and Appraisal Due to Emotions and Stress Model (modified and reprinted with permission from reference 15).

One important variable is how individuals use food to cope with stress and emotions. Eating has been recognized as a coping mechanism for alleviating and dealing with stress and emotions (10-13) by either undereating or overeating (14). To determine if individuals use food to cope with emotions and stress, these concepts must be measurable. The Eating and Appraisal Due to Emotions and Stress Questionnaire is a validated instrument that measures these concepts as they relate to eating (15). The purpose of this study was to identify if constructs from the Eating and Appraisal Due to Emotions and Stress Model (see Figure 1), including Emotion- and Stress-Related Eating, Appraisal of Ability and Resources to Cope, and Appraisal of Outside Influences and Stressors, were related to overweight status while controlling for demographic variables.

METHODS

Proposed Model

The Eating and Appraisal Due to Emotions and Stress Questionnaire is an instrument that has undergone preliminary validation using exploratory factor analysis in a university population and contains questions that measure the constructs of Emotion- and Stress-Related Eating, Appraisal of Ability and Resources to Cope, and Appraisal of Outside Influences and Stressors (15). The University of Alabama's Institutional Review Board approved the Eating and Appraisal Due to Emotions and Stress research to ensure the ethical treatment of the convenience sample. Informed consent was also obtained from all participants.

The Eating and Appraisal Due to Emotions and Stress Questionnaire takes approximately 10 to 15 minutes to complete. Twenty-four questions measure Emotion- and Stress-Related Eating, which addresses the extent to which individuals use food to cope with emotions and stressors, and includes questions related to eating behavior along with self-efficacy with regard to eating behavior.

Lower scores represent greater Emotion- and Stress-Related Eating. Twenty questions measure Appraisal of Ability and Resources to Cope, which is one's perception, in relation to his personal well-being, of resources, including skills, to cope with stress and emotions. Lower scores represent more compromised appraisal skills and resources to cope. Five questions measure Appraisal of Outside Stressors and Influences, which is one's perception, in relation to his personal well-being, of how one copes with external stressors, such as other individuals. Lower scores represent more compromised ability of how one perceives stressors. Questions are written so that individuals respond in first person and determine their level of agreement with the questions by answering Strongly Disagree to Strongly Agree on a scale of 1 to 5. Additional questions address demographics, including sex, race, annual household income, age, number of individuals that live in the immediate household, and number of individuals in the immediate household that are under the age of 18 years. Individuals are also asked to identify how much they weigh in pounds without shoes on, and how tall they are in feet and inches without wearing shoes.

The Eating and Appraisal Due to Emotions and Stress Questionnaire was distributed to a convenience sample of 4,192 faculty and staff at The University of Alabama. The sample was representative of the University of Alabama population, except that a large majority of participants were female (15). Participants in this study could choose to complete the questionnaire by filling out a paper-and-pencil Scantron questionnaire or clicking on a Web site link that would take them to the online questionnaire. The questionnaire was disseminated via campus mail and through a university e-mail distribution list. Data collected through the paper-and-pencil Scantron questionnaire was processed through a Scantron hardware and software package and then transferred into the Statistical Package for the Social Sciences (version 12.0 for Windows, 2003, SPSS Inc, Chicago, IL). Data collected through an online survey management tool was also transferred into the Statistical Package for the Social Sciences. Both data sets were combined for statistical analysis. A detailed account of the methods used to validate the Eating and Appraisal Due to Emotions and Stress Questionnaire has been described elsewhere (15).

Table 1. Demographic characteristics and body mass indexes of respondents to the EADES^a Questionnaire (n=822)						
	n	%	Mean±SD ^b	Range	University of Alabama Population (N=4,093)	
					n	% ^c
Sex (n=822)			—	—		
Male	218	26.5			1,822	44.5
Female	604	73.5			2,271	55.5
Race (n=822)			—	—		
Minority	102	12.4			789	19.3
Nonminority	720	87.6			3,304	80.7
Job category (n=822)			—	—		
Faculty	247	30.0			1,122	27.4
Staff	560	68.1			2,971	72.6
Other	15	1.8				
Income (\$) (n=821)			—	—	Not available	
<10,000	9	1.1				
10,000-14,999	16	1.9				
15,000-19,999	30	3.7				
20,000-24,999	47	5.7				
25,000-34,999	73	8.9				
35,000-49,999	120	14.6				
50,000-74,999	201	24.5				
≥75,000	325	39.6				
Life stage (age) (n=822)			45.2±11.6	18.0-83.0	Not available	
18-30	117	14.2				
31-50	424	51.6				
≥51	281	34.2				
BMI^d (n=822)			27.3±6.4	16.4-51.5	Not available	
Underweight	14	1.7				
Normal weight	349	42.5				
Overweight	233	28.3				
Obese	226	27.5				

^aEADES=Eating and Appraisal Due to Emotions and Stress.
^bSD=standard deviation.
^cPercentages obtained from The University of Alabama 2004-2005 Factbook (16).
^dBMI=body mass index; calculated as kg/m².

Earlier analysis of these data revealed that the Eating and Appraisal Due to Emotions and Stress Questionnaire contained three factors with the derived factor solution having a total Cronbach α reliability coefficient of 0.949. The factors loaded onto the concepts of:

Factor 1: Emotion- and Stress-Related Eating (Cronbach α = .949)

Factor 2: Appraisal of Ability and Resources to Cope (Cronbach α = .869)

Factor 3: Appraisal of Outside Stressors and Influences (Cronbach α = .652) (The last factor contained only five questions, potentially affecting Cronbach α .)

Based on this factor solution, the Eating and Appraisal Due to Emotions and Stress Model was derived (Figure 1). As can be seen in Figure 1, the arrows in the model are bidirectional because the study was correlational.

Temporality could not be determined with arrows, indicating that all factors could influence each other. The Eating and Appraisal Due to Emotions and Stress Model provides a viable, nontraditional framework for exploring if emotions, stress, appraisal, and coping might be related to overweight and obesity. Thus, the Model's constructs (Factors 1 to 3), along with covariates, were used to explore possible associations with overweight status.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (version 12.0 for Windows, 2003, SPSS Inc). Continuous variables, including BMI and age, were changed to categorical variables. Self-reported height and weight were used to calculate BMI (weight in relation to height) with two categories being used as the dependent variable including: (a) underweight and normal weight representing a BMI ≤ 24.9 and (b) overweight and obesity representing a BMI ≥ 25.0 . BMI was divided into two categories because the purpose of the Eating and Appraisal Due to Emotions and Stress Questionnaire is to identify causes of overeating, not to distinguish eating

Table 2. Percent of EADES^a respondents as categorized by demographic variables and EADES factors^b who were overweight and obese^c (n=822)

Variables	Total n	% Overweight and obese	Mean BMI \pm SD	χ^2	Degrees of freedom	P value*
Emotion- and Stress-Related Eating^d	822			91.9	3	<0.001
Scores 24-71	213	81.2	31.0 \pm 7.1			
Scores 72-86	212	55.7	27.5 \pm 6.1			
Scores 87-94	201	48.8	26.0 \pm 5.6			
Scores 95-124	196	35.7	24.5 \pm 4.6			
Appraisal of Ability and Resources to Cope^d	822			22.3	3	<0.001
Scores 20-71	214	68.2	29.1 \pm 7.2			
Scores 72-77	206	56.8	27.4 \pm 6.4			
Scores 78-82	223	50.7	26.3 \pm 5.6			
Scores 83-100	179	46.4	26.3 \pm 6.2			
Sex	822			5.9	1	<0.001
Male	218	62.8	27.9 \pm 6.0			
Female	604	53.3	27.1 \pm 6.6			
Job category	807			13.3	1	<0.001
Staff	560	60.4	28.0 \pm 5.3			
Faculty	247	46.6	25.8 \pm 5.3			
Life stage (age)	822			6.2	2	0.046
18-30	117	45.3	26.1 \pm 7.2			
31-50	424	57.6	27.5 \pm 6.3			
≥ 50	281	57.7	27.4 \pm 6.2			
Race	795			16.8	2	<0.001
White	720	54.4	27.0 \pm 6.4			
African American	75	76.0	30.6 \pm 6.7			
Income (\$)^e	821			15.1	5	0.010
<20,000	55	72.7	28.9 \pm 7.0			
20,000-24,999	47	61.7	28.2 \pm 7.1			
25,000-34,999	73	52.0	27.0 \pm 6.3			
35,000-49,999	120	62.5	28.3 \pm 7.3			
50,000-74,999	201	57.7	27.5 \pm 6.0			
$\geq 75,000$	325	49.5	26.5 \pm 6.1			
No. of people in household^f	822					0.022
1	139	18.7	28.0 \pm 6.7			
2	324	49.4	26.5 \pm 6.2			
3	173	57.8	28.3 \pm 7.2			
≥ 4	186	60.7	27.2 \pm 5.7			

^aEADES=Eating and Appraisal Due to Emotions and Stress.

^b χ^2 analyses results showing significant differences between normal/underweight and overweight and obesity.

^cOverweight and obesity calculated from self-report height and weight using body mass index (BMI) calculated as weight (kg)/height squared (m²) with BMI ≥ 25.0 .

^dFactors from the EADES Questionnaire Model were given a sum total score with the following ranges possible: Factor 1: 24 to 120, Factor 2: 20 to 100; Factor 3: 5 to 25. Each factor was analyzed using quartiles. Factor 3 scores are not presented as quartiles because it was not significantly related to overweight and obesity.

^eAlthough income was significantly related to overweight and obesity through univariate analyses, it was not used in the final logistic regression models because it did not provide adequate participants to fill cell size.

^fNumber of people in household was significantly related to obesity and overweight in the χ^2 analyses, however, it did not remain in the final logistic regression model.

*P<0.05.

behaviors between overweight and obese individuals. A total sum score was given to each factor from the Eating and Appraisal Due to Emotions and Stress Model with lower numbers representing a more compromised ability to cope with stress and emotions. The total sum scores were then converted into categorical variables using quartiles. Quartiles were used to identify cutoff points that assisted in providing practical meanings for the scores related to each factor.

First, demographic covariates were selected based on their relationship to overweight status using univariate analyses. Significant demographic variables included race, sex, life stage (age), job category, income, and number of people in household (Table 1). Factors 1 and 2 were found to be significantly related to overweight status in initial χ^2 analyses (Table 1). However, Factor 3 was found to have no relationship with overweight status ($\chi^2=1.3$, degrees of freedom=3, $P=0.737$), perhaps because of the limited number of questions, and was eliminated from further testing. Forward stepwise logistic regression was performed using demographic covariates including race, life stage, job category, number of people in household, and sex. Factor 1: Emotion and Stress Related Eating and Factor 2: Appraisal of Resources and Ability to Cope were included as stage 2 categorical variables. The number of participants in the logistic regression analyses was reduced from 822 to 783 because of missing data on demographic questions. The final model to be tested included demographics plus Factor 1 and Factor 2.

Table 3. Final logistic regression model ^a of race, sex, job category, life stage (age), and EADES ^b Factor 1 predicting overweight and obesity (n=783)				
Variables	Cumulative R²	OR^c	95% CI^d for OR	P value^e*
Step 1: Race	0.022			
African American		5.79	3.15-10.66	<0.001
White		1.00		
Step 2: Sex	0.038			
Male		2.78	1.89-4.09	<0.001
Female		1.00		
Step 3: Job category	0.063			
Staff		2.03	1.41-2.92	<0.001
Faculty		1.00		
Step 4: Life stage (age)	0.075			
18-30		1.00		
31-50		1.58	0.97-2.57	0.070
≥51		2.20	1.30-3.70	0.003
Step 5: Eating and Appraisal Due to Emotions and Stress model factor 1 scores^{ef}	0.265			
24-71		13.38	8.01-22.34	<0.001
72-86		3.12	2.00-4.87	<0.001
87-94		2.02	1.29-3.16	0.002
95-120		1.00		

^aResults from the forward stepwise logistic regression model.
^bEADES=Eating and Appraisal Due to Emotions and Stress.
^cOR=odds ratios.
^dOR and 95% confidence intervals (CI) are from forward stepwise logistic regression analyses in which all independent variables listed were included in the model simultaneously.
^eFactor 1 was Emotion- or Stress-Related Eating. Factor 1 scores ranged from 24 to 120. Scores were categorized according to quartiles: Quartile 1=Scores 24 to 71, Quartile 2=Scores 72 to 86, Quartile 3=87 to 94, Quartile 4=95 to 120. The lower the score, the more likely the participant ate in response to emotions and stress and had lower self-efficacy related to eating behavior.
^fOmnibus tests for overall significance showed model significance at $P<0.001$.
* $P<0.05$.
NOTE: Information from this table is available online at www.adajournal.org as part of a PowerPoint presentation featuring additional online-only content.

RESULTS

Description of Participants

Of 936 returned questionnaires, 854 were deemed useable for the original validation study with 22% of the total population responding. However, the number decreased to 822 for this current study because all demographic variables were used in data analysis (ie, number of people in household) and thus, complete, usable data decreased. Excluding sex, this study's sample (n=822) tended to be representative of the general University of Alabama faculty and staff population. A majority of participants were female (73.5%; n=822), white (87.6%;

n=795), and staff (68.1%; n=807), with a mean age of 45.2 ± 11.6 years (n=822) (Table 1). Mean BMI for the total sample was 27.3 ± 6.4 with a range of 16.4 to 51.5; 44.2% of the sample were underweight or normal weight and 55.8% were overweight or obese.

Variables Associated with Overweight and Obesity

The mean factor scores from the Eating and Appraisal Due to Emotions and Stress model were 82.7 ± 18.0 for Factor 1: Emotion and Stress Related Eating (possible scoring range=24 to 120), 76.2 ± 8.9 for Factor 2: Appraisal of Resources and Ability to Cope (possible scoring range=20 to 100), and 13.4 ± 3.0 for Appraisal of Outside Influences/Stressors (possible scoring range=5 to 25). χ^2 analyses indicated that overweight and obesity were positively related to race, life stage, job category, sex, income, number of people in the household, Factor 1: Emotion- and Stress-Related Eating, and Factor 2: Appraisal of Resources and Ability to Cope (Table 2). Although income appeared to be related to overweight status, it could not be used in the stepwise logistic regression analyses because it presented problems in providing adequate participants to fill cell size. In addition, when income categories were collapsed, practical significance was lost because more than half of the sample earned \$50,000 or more. Income was also related to job category in the univariate analyses ($P \leq 0.001$).

Tests of model coefficients revealed that race, sex, job category, and life stage were significantly associated with overweight and obesity with a cumulative $R^2=0.075$ (Table 3). In stage 2 of the stepwise regression analysis, Factor 1: Emotion and Stress Related Eating was also retained, resulting in an increase in the cumulative R^2 from 0.075 to 0.265 (Table 3). Factor 2: Appraisal of Resources and Ability to Cope did not remain in the model when analyzed with Factor 1.

As can be seen in Table 3, males were 2.78 times more likely to be overweight than females in the logistic regression model containing Factor 1. As can be seen in Table 2, 62.8% of males were overweight or obese and 53.3% females were overweight or obese. Results in Table 3 for the forward stepwise logistic regression model 1 that retained Factor 1: Emotion and Stress Related Eating, revealed that the University of Alabama staff was more likely to be overweight or obese as compared to faculty, African Americans were more likely to be overweight or obese as compared with white participants, and the oldest-aged group was more likely to be overweight than the youngest-aged group.

Factor 1 of the Eating and Appraisal Due to Emotions and Stress Model, Emotion- and Stress-Related Eating, showed the strongest relationship with overweight/obesity in this sample. Participants in quartile 1, representing the lowest scoring group (scores=24 to 71) for Factor 1: Emotion- and Stress-Related Eating, were 13.38 times more likely to be overweight or obese as compared with participants in quartile 4, representing the highest scores that could be obtained (scores=95 to 120). The lower the score on Eating and Appraisal Due to Emotions and Stress Factor 1, the greater the tendency to eat in response to emotions and stress. In addition, individuals scoring between 72 and 86 and 87 and 94 were 3.12 and 2.02 times more likely to be overweight than those scoring between 95 and 120, respectively. Thus, the odds ratio of being overweight and obese increased at each quartile, with the most notable increase seen from the group who had the greatest tendency to eat in response to stress and emotions. In addition, both the middle-aged group and oldest-aged group proved to be more likely to be overweight or obese compared to the youngest-aged group.

DISCUSSION

This study produced a model that helped explain the relationship between eating in response to emotions and stress and overweight status. This model included race, sex, life stage, and job category as covariates with Factor 1: Emotion- and Stress-Related Eating from the Eating and Appraisal Due to Emotions and Stress Model remaining in the model as an independent variable. The odds ratio for Emotion and Stress Related Eating was substantial, demonstrating that individuals who eat in response to emotions and stress are more likely to be overweight or obese. More specifically, individuals who received the lowest scores (24 to 71) on the Eating and Appraisal Due to Emotions and Stress Questionnaire for this factor had the greatest likelihood of being overweight or obese. This model provides insight about nontraditional factors that affect overweight status.

Research supports the use of Factor 1: Emotion- and Stress-Related Eating as a target variable in weight-management interventions, recognizing that eating is a coping mechanism for alleviating and dealing with stress and emotions (11,13,17) by either under eating or overeating (14). Emotions and emotional problems are presumed to be the result of stress (18) and emotions play a role in regulating how much one eats. Eating in response to emotions has been found to be a predictive variable for long-term change (19). Blair, Lewis, and Booth (20) found that individuals who decreased their emotional eating lost substantially more weight than those who did not decrease their emotional eating. In addition, individuals who are overweight exhibit more compromised coping skills with greater severity of binge eating (21-23). Geliebter and Aversa (14) found that overweight individuals have substantially greater eating ratings, indicating a greater urge to eat, in response to negative emotions and negative situations than normal weight individuals. Furthermore, there is evidence of a relationship between emotional eating and binge eating (24) and higher caloric intake (25). Individuals who are overweight or obese might lack appropriate mechanisms to cope with daily stressors and their existing coping mechanisms can be ineffective (21), and as the current study demonstrated, can use overeating as a maladaptive way of coping.

Limitations of the current study include the use of correlational data, which cannot explain temporal or causal relationships between variables. Secondly, this study used self-reported height and weight to calculate BMI and overweight status in this adult population, which can lead to underreporting of weight status and misclassification of overweight and obesity. Although obesity rates of this sample compare to rates of state (26) and national data (27) from the Behavioral Risk Factor Surveillance Survey data that also use self-reported height and weights, a study where subjects' heights and weights are measured accurately and the Eating and Appraisal Due to Emotions and Stress Questionnaire is utilized would be helpful in verifying the relationship between the Eating and Appraisal Due to Emotions and Stress Questionnaire factors and true overweight status. Thirdly, the low response rate and the use of the university population as participants compromises the generalizability of these findings.

Lastly, univariate analyses revealed that Factor 3: Appraisal of Outside Influences/Stressors was not significantly associated with overweight and obesity. Factor 3's total sum score was much lower than the other factors' sum scores because only five questions were originally on the Eating and Appraisal Due to Emotions and Stress' questionnaire loaded on this factor. The current analysis may not have captured the real associations between overweight status and Factor 3.

Future studies should address the role that coping plays in overweight status. The sample used for this study came from a university population. Future studies should use the Eating and Appraisal Due to Emotions and Stress Questionnaire to predict overweight status in the populations outside of the university setting including clinical and counseling settings. Other target populations that were underrepresented in this study including minorities, individuals younger than age 18 years, and men should also be studied. In addition, longitudinal studies should be implemented with the Eating and Appraisal Due to Emotions and Stress Questionnaire to assist in determining causal relationships with over-weight status and identify the relationship among the Eating and Appraisal Due to Emotions and Stress construct, Emotion- and Stress-Related Eating.

With further validation of the Eating and Appraisal Due to Emotions and Stress, the utility of the Questionnaire should be expanded. This can be done by defining what specific scores derived on the Eating and Appraisal Due to Emotions and Stress mean in practical terms. In addition, Emotion- and Stress-Related Eating items were derived specifically from using the subconstruct of self-efficacy within the Transactional Model of Stress and Coping. Thus, further analysis should be completed, possibly using second-order factor analysis, to determine if this construct proves to be another dimension within Emotion- and Stress-Related Eating. Expansion of questions for Factor 3, Appraisal of Outside Stressors and Influences, is necessary to improve validity and reliability of the construct. Finally, the question arises as to why Factor 1: Emotion- and Stress-Related Eating and Factor 2: Appraisal of Ability and Resources to Cope did not remain in the logistic regression model together in this study. Future research will focus on this issue. Perhaps the underlying answer to this issue will provide insight

about the direction of the arrows in the Eating and Appraisal Due to Emotions and Stress Model (Figure 1). It is hypothesized that Factor 1 might modify the relationship between Factor 2 and weight status.

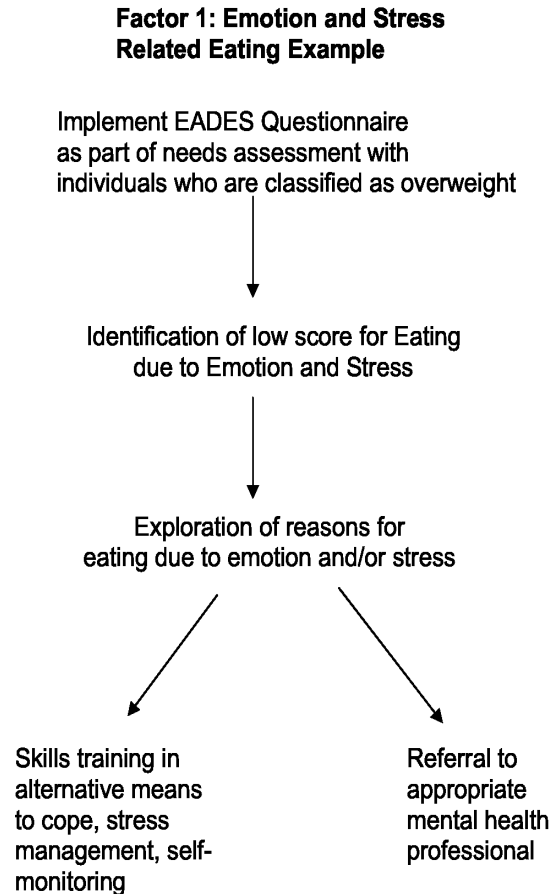


Figure 2. Schematic for using the Eating and Appraisal Due to Emotions and Stress Questionnaire.

This study continues to support the exploration and application of nontraditional variables in the amelioration of the obesity epidemic. Food and nutrition and health care professionals must move beyond the traditional weight-management paradigm of merely altering energy in and energy out to addressing a more comprehensive picture that includes one's relationship with food. Addressing all of these variables will encompass the underlying reasons for overweight and obesity and identify new models for obesity prevention and treatment that are safe and produce sustainable results (28)

CONCLUSIONS

The Eating and Appraisal Due to Emotions and Stress research provides a model to explore nontraditional variables related to overeating. In future research, food and nutrition professionals in counseling, clinical, and research venues should use the Eating and Appraisal Due to Emotions and Stress questionnaire to identify if the Eating and Appraisal Due to Emotions and Stress construct, Emotion- and Stress-Related Eating, contributes to overeating. In addition, if the construct proves to contribute to overeating, research should be conducted using an interdisciplinary approach to implement interventions that target the Eating and Appraisal Due to Emotions and Stress construct, which appears to potentially influence eating behavior (Figure 2).

Traditional behavioral interventions include cognitive restructuring, stress management techniques, self-monitoring, and social support (29). These traditional interventions not only need to be reemphasized with current weight-management programs, but future research should explore targeting coping skills. As an example, traditional self-monitoring is used to record behavior such as dietary intake or physical activity. It can also be used as a tool to identify reasons people eat, such as stress or emotions. In addition, although stress management is named as a cornerstone of weight-management programs (29), food and nutrition professionals are not well-

trained in teaching these techniques. The Eating and Appraisal Due to Emotions and Stress Questionnaire, specifically questions addressing Emotion- and Stress-Related Eating, should be tested as a screening tool to determine if it accurately identifies individuals with compromised coping skills that influence eating behavior. Ultimately, referrals would need to be made to the appropriate health professional and food and nutrition professionals need to learn how to effectively teach these techniques in weight-management interventions.

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