

Identifying the Unique Role of Anxiety Sensitivity Sub-facets in Food Cravings

Brooke Y. Redmond, PhD
 Angelica Duran, BS
 Andrea Rodriguez, BS
 Duckhyun Jo, MA
 Michael J. Zvolensky, PhD

Abstract

Obesity is a major public health concern in the United States, with nearly half of the adult population considered obese. Conceptual models of obesity have suggested that efficacious treatment and prevention for obesity should address the underlying processes involved in unhealthy behaviors, including the potential role of psychological variables. As such, the current study sought to examine the role of anxiety sensitivity (AS; fear of anxiety-related sensations) sub-facets of physical, cognitive, and social concerns with food cravings related to (1) an intense desire to eat, (2) anticipation of relief from negative states and feelings/improvement in mood that may result from eating, (3) obsessive preoccupation with food or lack of control over eating, and (4) craving as a physiological state. Participants in this study included 161 adults (60.9% female, $M_{age} = 31.55$, $SD = 10.73$) who attended a baseline appointment for a larger randomized controlled trial focused on improving weight-related behaviors. Results highlighted the incremental role of AS social concerns as a statistically significant predictor of all food craving processes. Moreover, AS cognitive concerns evidenced a statistically significant inverse relationship with food cravings related to an intense desire to eat. Future work is needed to extend this current model to determine the explanatory role of AS and food cravings with objective eating behavior.

Keywords: anxiety sensitivity, food cravings, obesity, eating

*Corresponding author may be reached at byredmond@central.uh.edu

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Obesity is a major public health concern in the United States (US), with nearly half of the adult population considered obese (Fryar et al., 2020). Although lifestyle interventions designed to change energy-balance behaviors (i.e., dietary and physical activity behaviors) can be efficacious for some (Wilfley et al., 2018), prevalence rates of obesity continue to rise (Ward et al., 2019), suggesting greater attention to this matter is needed (Hemmingsson, 2014). Conceptual models of obesity have suggested that efficacious treatment and prevention for obesity should address the underlying causes of such

unhealthy behaviors, including the potential causal role of psychological variables (Hemmingsson, 2014). Indeed, individuals with obesity often have prevalent comorbidities with mental health conditions (Rajan & Menon, 2017), yet such factors are frequently not addressed within the context of weight-management interventions (Rand et al., 2017).

Anxiety sensitivity (AS) is one psychological factor that is implicated in health behavior change, particularly eating (Otto et al., 2016). AS reflects the fears or concerns related to anxiety symptoms and sensations (Reiss & McNally, 1985). Such fears are further broken down into three sub-

facets, including fears or concerns related to physical consequences (e.g., concerns related to heart palpitations leading to heart attack), cognitive consequences (e.g., concerns related to racing thoughts as a sign of “going crazy”), and social consequences (e.g., concerns that other people will notice one's anxiety). The AS sub-facets often explain unique variance in specific clinical disorders (Allan et al., 2015). There is a large body of research related to AS and eating behaviors with AS documented to be related to greater tendencies to utilize binge eating to regulate emotions, greater expectancies of eating to manage negative mood states, the consumption of greater amounts of calories following a period of negative affect, and greater food cravings (Kauffman et al., 2019; Otto et al., 2016; Salwa et al., 2022). Although AS-eating relations are apparent, surprisingly little work has focused on the sub-facets of AS (i.e., physical, cognitive, and social concerns) with eating-related outcomes. Of the limited work, AS cognitive concerns have shown relations with greater disordered eating (Fulton et al., 2012; Hearon et al., 2013). Further work in this area is needed to further explicate the unique role of various AS sub-facets and eating processes implicated in obesity-related maintenance.

State-like food cravings are often involved in the discussion to better understand the complex nature of obesity (Potenza & Grilo, 2014), as food cravings disrupt eating behaviors by making individuals more susceptible to external cues rather than internal hunger cues (Stapleton et al., 2020). A widely used measure of food cravings is the Food Cravings Questionnaire-State (Cepeda-Benito et al., 2000; Meule, 2020), which consists of five subscales that pertain to cravings related to an intense desire to eat, anticipation of positive reinforcement that may result from eating, anticipation of relief from negative states and feelings as a result of eating, lack of control over eating, and

craving as a physiological state (i.e., hunger; Cepeda-Benito et al., 2000). State-like food cravings are associated with overconsumption of food (i.e., binge eating; Verzijl et al., 2022), including greater sweet food consumption (Forman et al., 2013). Thus, identifying factors that may contribute to greater food cravings is of clinical significance. Extant work has identified the role of AS with greater reinforcement-oriented food cravings (i.e., combined subscales of anticipation of relief from negative states and feelings/improvement in mood that may result from eating) as well as greater cravings as a physiological state (Salwa et al., 2022). The formative next step is to extend this work to examine AS sub-facets' concurrent predictive role on food craving to provide a greater understanding of this transdiagnostic risk factor in obesity-related behaviors.

The current study sought to examine the role of AS sub-facets of physical, cognitive, and social concerns with food cravings related to (1) an intense desire to eat, (2) anticipation of relief from negative states and feelings/improvement in mood that may result from eating, (3) obsessive preoccupation with food or lack of control over eating, and (4) craving as a physiological state. It was hypothesized that all three sub-facets of AS would be related to each of the food craving subscales. Specifically, individuals with greater physical, cognitive, and social concerns may experience greater food cravings due to the use of food as an affect regulation strategy to manage physical concerns (e.g., misinterpretation of hunger, desire for somatic relief), cognitive concerns (e.g., obsessive food thoughts, mental distraction), and social concerns (e.g., eating to cope with social evaluation). These hypotheses are guided by prevalent affect regulation models of eating (Hawkins et al., 1984), suggesting that individuals may engage in eating as a

means of comfort or to distract from unpleasant experiences. Relations were expected after accounting for theoretically relevant covariates with documented associations with food cravings, including age (Abdella et al., 2019), sex (Abdella et al., 2019; Breton et al., 2023), and negative affectivity (Smith et al., 2018; Wagner et al., 2012).

Methods

Participants

Participants in this study included 161 adults (60.9% female, $M_{age} = 31.55$, $SD = 10.73$) who attended a baseline appointment for a larger randomized controlled trial focused on an AS reduction intervention for individuals seeking treatment for weight-related behaviors (Kauffman et al., 2022). Individuals were invited to complete the baseline assessment if they met the following eligibility criteria at the pre-screen: (1) being 18 years of age or older, (2) meeting criteria for obesity defined as a body mass index (BMI) of 30 or higher based on self-reported height and weight, and (3) meeting criteria for elevated AS as evidenced by a score of 17 or higher on the Anxiety Sensitivity Index-3 (ASI-3; Taylor et al., 2007). Participants were not included in the study if they indicated having any upcoming legal issues that they deemed would interfere with their ability to complete the study or if they were not fluent in English. The sample consisted of individuals identifying as 60.9% White, 19.3% Black or African American, 9.3% Asian, 1.2% Native American/Alaskan Native, and 9.3% Other. Of the participants, 24.2% identified as Hispanic or Latino.

Measures

Demographics. Demographic data, including sex, age, race, and ethnicity, were collected for descriptive purposes. Age and sex were used as covariates in the current study.

Positive and Negative Affect Schedule (PANAS). The PANAS is a 20-item self-report measure that evaluates positive (e.g., determined, alert) and negative (e.g., nervous, ashamed) affect (Watson et al., 1988). Participants indicated the frequency in which they experienced each emotion using a 5-point Likert scale, ranging from 1 (very slightly or not at all) to 5 (extremely), with a possible range of 20-100. The measure has demonstrated strong psychometric properties (Roemer & Medvedev, 2023; Watson et al., 1988). In the present study, the negative affectivity subscale (10-items with a possible range of 10-50) was included as a covariate and demonstrated excellent internal consistency ($\alpha = .91$).

Anxiety Sensitivity Index-3 (ASI-3). The ASI-3 is an 18-item self-report measure designed to assess fears related to the potential negative consequences of anxiety-related symptoms and sensations (Taylor et al., 2007). Participants rate their concern about these potential consequences on a 5-point Likert scale, ranging from 0 (very little) to 4 (very much), with a possible range of 0-72. The ASI-3 includes three subscales: physical (AS-Physical; six items with a possible range of 0-24; e.g., “When my stomach is upset, I worry that I might be seriously ill.”), cognitive (AS-Cognitive; six items with a possible range of 0-24; e.g., “When my thoughts seem to speed up, I worry that I might be going crazy.”), and social (AS-Social; six items with a possible range of 0-24; e.g., “I worry that other people will notice my anxiety.”) concerns. Prior research has shown strong psychometric properties for the ASI-3 total score and subscales (Jardin et al., 2018; Taylor et al., 2007). In the current study, the AS-Physical ($\alpha = .88$), AS-Cognitive ($\alpha = .93$), and AS-Social ($\alpha = .86$) concerns subscales were used as predictor variables.

The Food Cravings Questionnaire-State (FCQ-S). The FCQ-S is a 15-item self-report

measure assessing food cravings in the present moment (Cepeda-Benito et al., 2000). Respondents are asked to indicate the degree to which they agree with each item using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The FCQ-S includes five subscales: (1) an intense desire to eat (Food Craving-Desire; three items with a possible range of 3-15; e.g., "I have an intense desire to eat [one or more specific foods]."), (2) anticipation of positive reinforcement from eating (Food Craving-Positive Reinforcement; three items with a possible range of 3-15; e.g., "Eating [one or more specific foods] would make things seem just perfect."), (3) anticipation of relief from negative states through eating (Food Craving-Negative Reinforcement; three items with a possible range of 3-15; e.g., "If I ate something, I wouldn't feel so sluggish and lethargic."), (4) lack of control over eating (Food Craving-Control; three items with a possible range of 3-15; e.g., "If I had [one or more specific foods], I could not stop eating it."), and (5) craving as a physiological state (Food Craving-Physiological; three items with a possible range of 3-15; e.g., "I am hungry."; Cepeda-Benito et al., 2000). Two items (i.e., items four and six) related to Food Craving-Positive Reinforcement were removed, and the subscales of Food Craving-Positive Reinforcement and Food Craving-Negative Reinforcement were combined to form one reinforcement scale (four items with a possible range of 4-20). This was guided by previous factor analysis work (Vander Wal et al., 2007), which has documented improved model fit with the proposed adjustments as both subscales appear to tap into feelings of satisfaction from eating. Prior research has demonstrated strong psychometric properties (Cepeda-Benito et al., 2000). In the present study, Food Craving-Desire ($\alpha = .95$), Food Craving-Reinforcement ($\alpha = .90$), Food Craving-Control ($\alpha = .78$), and Food

Craving-Physiological ($\alpha = .83$) were used as predictor variables.

Procedures

Participants were recruited nationally using various recruitment methods (e.g., flyers posted locally, online advertisements, and physician referrals). All participants provided informed consent prior to participating. Interested participants completed a pre-screen survey to assess initial eligibility. Participants who met the initial eligibility criteria at the pre-screen were invited to complete a baseline assessment, in which eligibility was further assessed. Individuals deemed ineligible during the baseline assessment received \$10 for completing the assessment and were given referrals. If found eligible after the baseline assessment, participants were randomly assigned to complete one of two 30-minute interventions, including an AS reduction intervention for weight-related behavior or a health information control focused on general health (e.g., wearing sunscreen, staying hydrated). Participants were compensated \$20 upon completing the baseline assessment. All individuals who completed the baseline assessment were included in the current study, regardless of whether they were eligible to complete the intervention portion of the trial. The study was approved by the Institutional Review Board, where the study took place. Additional details on the study procedures are available elsewhere (Kauffman et al., 2022).

Data analysis

Data analysis was conducted using SPSS version 29.0. First, descriptive statistics and zero-order correlations were examined for all study variables. Next, four separate 2-step hierarchical regression analyses were carried out to explore the relationship between AS sub-facets (i.e., physical, cognitive, and

social concerns) and the criterion variables: (1) Food Craving-Desire, (2) Food Craving-Reinforcement, (3) Food Craving-Control, and (4) Food Craving-Physiological. In Step 1 of all models, the covariates of age, sex (coded: 0 = male and 1 = female), and negative affectivity were included. Step 2 introduced the AS sub-facets of physical, cognitive, and social concerns. Model fit was evaluated using the F statistic, while squared semi-partial correlations (sr^2) were used to determine effect sizes, interpreted as .01 = small, .09 = moderate, and .25 = large (Cohen, 1988). The dependent variables in the current study were derived from the same validated instrument, and our analyses were hypothesis-driven. Thus, we did not adjust for multiple comparisons to avoid inflating the likelihood of Type II error. Variance Inflation Factor (VIF) scores were used to measure multicollinearity; all variables had a VIF value less than 5.

Results

Descriptive Statistics and Correlations

Descriptive statistics and zero-ordered correlations are presented in Table 1. All Food Craving subscales were statistically significant and negatively correlated with age. Food Craving-Desire and Food Craving-Control were also statistically significant and positively correlated with negative affectivity. Food Craving-Reinforcement and Food Craving-Physiological were statistically significant and positively associated with AS-Physical concerns. Finally, all Food Craving subscales were statistically significant and positively associated with AS-Social concerns.

Regression Analyses

Hierarchical regression results are presented in Table 2. Regarding Food Craving-Desire, step 1 with covariates was statistically significant ($R^2 = .11$, $F(3, 157) =$

6.46, $p < .001$); age was a statistically significant predictor with a small effect ($sr^2 = .082$). Younger age was associated with higher Food Craving-Desire. AS subscales were introduced in step 2, and the model remained statistically significant ($R^2 = .18$, $F(6, 154) = 5.67$, $p < .001$). The addition of AS subscales accounted for a statistically significant increase in variance ($\Delta R^2 = .07$, $F(3, 154) = 4.46$, $p = .005$); AS-Cognitive and AS-Social concerns were statistically significant predictors with small effects ($sr^2 = .022-.043$). Higher AS-Cognitive concerns were associated with lower Food Craving-Desire, whereas higher AS-Social concerns were associated with higher Food Craving-Desire.

Concerning Food Craving-Reinforcement, step 1 with covariates was statistically significant ($R^2 = .07$, $F(3, 157) = 3.90$, $p = .010$); age was a statistically significant predictor with a small effect ($sr^2 = .082$). Younger age was associated with higher Food Craving-Desire. AS subscales were included in step 2, and the model remained statistically significant ($R^2 = .13$, $F(6, 154) = 3.94$, $p < .001$). The addition of the AS subscales in step 2 accounted for a statistically significant increase in variance in Food Craving-Reinforcement ($\Delta R^2 = .06$, $F(3, 154) = 3.78$, $p = .012$); AS-Social concerns were a statistically significant predictor with a small effect ($sr^2 = .022$), with higher AS-Social concerns related to higher Food Craving-Reinforcement.

In Food Craving-Control regression analysis, step 1 of the model with covariates was statistically significant ($R^2 = .12$, $F(3, 157) = 6.86$, $p < .001$); age and negative affectivity were statistically significant predictors with a small effect ($sr^2 = .043-.054$). Younger age and higher negative affectivity were associated with higher Food Craving-Control. In step 2, AS subscales were added, and the model remained statistically significant ($R^2 = .23$, $F(6, 154) =$

Table 1*Descriptive statistics and bivariate correlations between study variables (N =161)*

	1	2	3	4	5	6	7	8	9	10
1. Age	--									
2. Gender	-.086	--								
3. Negative Affectivity	-.079	.126	--							
4. AS-Physical	.041	.036	.269***	--						
5. AS-Cognitive	-.050	-.070	.520***	.468***	--					
6. AS-Social	-.284***	.035	.182*	.511***	.222**	--				
7. Food Craving-Desire	-.298***	.034	.168*	.070	-.020	.305***	--			
8. Food Craving-Reinforcement	-.259***	-.013	-.014	.175*	.082	.288***	.618***	--		
9. Food Craving-Control	-.232**	.109	.259***	.142	.052	.397***	.664***	.585***	--	
10. Food Craving-Physiological	-.251**	-.038	-.012	.206**	.016	.334***	.544***	.745***	.582***	--
Mean/N	31.55	98	27.33	13.33	11.38	16.55	11.34	13.69	10.55	10.04
SD/%	10.73	60.9	9.42	5.90	6.60	5.74	3.60	4.35	3.22	3.62

Note. *** $p < .001$, ** $p < .01$, and * $p < .05$; Sex: N/% listed is for females (coded: 0 = male and 1 = female).

Table 2
Hierarchical Regression Results

Food Craving-Desire								
Model		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (l)</i>	<i>CI (u)</i>	<i>sr</i> ²
1	Age	-0.10	0.03	-3.79	< .001	-0.15	-0.05	.082
	Sex	-0.07	0.56	-0.12	.903	-1.17	1.04	< .001
	Negative Affectivity	0.06	0.03	1.92	.056	-0.00	0.11	.021
2	Age	-0.07	0.03	-2.79	.006	-0.13	-0.02	.041
	Sex	-0.25	0.55	-0.45	.655	-1.34	0.84	.001
	Negative Affectivity	0.08	0.03	2.44	.016	0.02	0.15	.032
	AS-Physical	-0.01	0.06	-0.20	.845	-0.13	0.11	< .001
	AS-Cognitive	-0.11	0.05	-2.02	.045	-0.21	-0.00	.022
	AS-Social	0.16	0.06	2.83	.005	0.05	0.27	.043
Food Craving-Reinforcement								
Model		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (l)</i>	<i>CI (u)</i>	<i>sr</i> ²
1	Age	-0.11	0.03	-3.41	< .001	-0.17	-0.05	.069
	Sex	-0.29	0.69	-0.41	.679	-1.65	1.08	.001
	Negative Affectivity	-0.01	0.04	-0.39	.695	-0.09	0.06	.001
2	Age	-0.09	0.03	-2.71	.008	-0.15	-0.02	.041
	Sex	-0.23	0.69	-0.34	.734	-1.59	1.12	.001
	Negative Affectivity	-0.05	0.04	-1.21	.230	-0.13	0.03	.008
	AS-Physical	0.08	0.07	1.02	.308	-0.07	0.22	.006
	AS-Cognitive	0.02	0.06	0.38	.707	-0.10	0.15	.001
	AS-Social	0.14	0.07	1.99	.049	< .001	0.28	.022
Food Craving-Control								
Model		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (l)</i>	<i>CI (u)</i>	<i>sr</i> ²
1	Age	-0.06	0.02	-2.76	.006	-0.11	-0.02	.043
	Sex	0.40	0.50	0.81	.420	-0.58	1.39	.004
	Negative Affectivity	0.08	0.03	3.10	.002	0.03	0.13	.054
2	Age	-0.03	0.02	-1.39	.166	-0.08	0.01	.010
	Sex	0.29	0.48	0.61	.544	-0.65	1.23	.002
	Negative Affectivity	0.09	0.03	3.17	.002	0.03	0.15	.050
	AS-Physical	-0.03	0.05	-0.52	.603	-0.13	0.07	.001
	AS-Cognitive	-0.07	0.04	-1.63	.105	-0.16	0.02	.013
	AS-Social	0.21	0.05	4.26	< .001	0.11	0.31	.090
Food Craving-Physiological								
Model		<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>CI (l)</i>	<i>CI (u)</i>	<i>sr</i> ²
1	Age	-0.09	0.03	-3.33	.001	-0.14	-0.04	.066
	Sex	-0.42	0.58	-0.73	.469	-1.55	0.72	.003
	Negative Affectivity	-0.01	0.03	-0.33	.744	-0.07	0.05	.001
2	Age	-0.07	0.03	-2.62	.010	-0.12	-0.02	.037
	Sex	-0.51	0.56	-0.91	.362	-1.62	0.59	.005
	Negative Affectivity	-0.02	0.03	-0.62	.539	-0.09	0.05	.002
	AS-Physical	0.10	0.06	1.65	.102	-0.02	0.22	.015
	AS-Cognitive	-0.05	0.05	-1.01	.316	-0.16	0.05	.006
	AS-Social	0.14	0.06	2.46	.015	0.03	0.26	.033

Note. $N = 161$. Sex coded: 0 = male and 1 = female.

7.80, $p < .001$) and accounted for a statistically significant increase in variance ($\Delta R^2 = .12$, $F(3, 154) = 7.85$, $p < .001$); AS-Social concerns were a statistically significant predictor with a medium effect ($sr^2 = .090$). Higher AS-Social concerns were associated with higher Food Craving-Control.

For Food Craving-Physiological, step 1 with covariates was statistically significant ($R^2 = .07$, $F(3, 157) = 3.78$, $p = .012$); age was a statistically significant predictor with a small effect ($sr^2 = .066$). Younger age was associated with higher Food Craving-Physiological. In step 2, AS subscales were added, and the model remained statistically significant ($R^2 = .16$, $F(6, 154) = 5.00$, $p < .001$). The addition of AS subscales evidenced a statistically significant increase in variance in Food Craving-Physiological ($\Delta R^2 = .10$, $F(3, 154) = 5.87$, $p < .001$), and AS-Social concerns emerged as a statistically significant predictor with a small effect ($sr^2 = .033$); higher AS-Social concerns were associated with higher Food Craving-Physiological.

Discussion

The current study examined the role of AS sub-facets with various food craving processes, including: (1) an intense desire to eat, (2) anticipation of relief from negative states and feelings/improvement in mood that may result from eating, (3) obsessive preoccupation with food or lack of control overeating, and (4) craving as a physiological state. Partially consistent with hypotheses, results highlighted the incremental role of AS social concerns as a statistically significant predictor of all food cravings processes with small to medium effects. Moreover, AS cognitive concerns evidenced a statistically

significant inverse relationship with the food craving process related to an intense desire to eat with small effects. These findings were evidenced after accounting for the shared variance of the AS sub-facets as well as other theoretically relevant covariates (e.g., age, sex).

As hypothesized, AS social concerns were related to all food craving subscales. Specifically, greater levels of social concerns were related to greater levels of an intense desire to eat, anticipation of relief from negative states and feelings/improvement in mood that may result from eating, obsessive preoccupation with food or lack of control overeating, and craving as a physiological state. Such findings are broadly in line with past work that has documented social anxiety as a significant predictor in eating-related behaviors (e.g., binge eating; Sawaoka et al., 2012) and extend this work to include the role of AS social concerns regarding food cravings. Given individuals with obesity are more attuned to social cues due to longstanding bias and weight stigma (Puhl & Heuer, 2010), the prominent impact of AS social concerns on food cravings is not surprising. To address food cravings among individuals with obesity, it may be of clinical importance to screen for elevated AS social concerns and, if relevant, implement appropriate intervention strategies. For example, an individual experiencing elevated social concerns may benefit from interoceptive exposure techniques (Boswell et al., 2013) specifically aimed to elicit anxiety-related sensations in the presence of others.

It is also important to note that, although approaching non-significance, AS cognitive concerns were inversely related to an intense desire to eat, in that greater cognitive dyscontrol was associated with less intense

desire to eat. Past work has documented the role of greater AS cognitive concerns with greater disordered eating (Fulton et al., 2012) as measured by the Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979; Garner et al., 1982), a measure of symptoms of anorexia. The current study is broadly in line with this work, as, in the current study, greater AS cognitive concerns were associated with less of a desire to eat. Thus, this specific sub-facet of AS may be more pertinent to the opposite end of the spectrum of eating behaviors (i.e., restricted eating vs. overconsumption). Contrary to our hypothesis, AS physical concerns were not related to any food cravings in the presence of shared variance among the other sub-facets. As such, it may be that fears related to physical consequences from the experience of anxiety (e.g., racing heart) may be less relevant for eating behaviors when accounting for other AS sub-facets. However, further work is needed to validate these constructs in the broad scheme of obesity-related maintenance, as AS physical concerns may be more pertinent to other obesity-related indicators (e.g., physical inactivity; DeWolfe et al., 2023).

There are several limitations worth noting. First, the current study was cross-sectional, thereby limiting our ability to examine temporal precedence. Second, the current study utilized self-report methods, and some of the observed relations may be a factor of shared method variance. Future work is needed to replicate and extend the model utilizing objective measures. For example, it may be beneficial to implement laboratory paradigms to assess objective eating behavior and determine if food cravings mediate the relationship between AS sub-facets and objective eating. Third, most of the sample identified as White females and were individuals who were invited to take part in the study on the basis of meeting initial eligibility criteria at the prescreen for obesity

and elevated anxiety sensitivity. Thus, future work would benefit from sampling from a more diverse group of individuals, including males, individuals from various racial and ethnic backgrounds, as well as individuals of varying BMI and anxiety sensitivity levels. Fourth, the FCQ-S was adjusted based on recommendations from previous work (Vander Wal et al., 2007). However, future work should validate this factor structure further. Finally, the current study controlled for a number of theoretically relevant covariates (e.g., age, sex). However, future work would benefit from examining the proposed model accounting for other potentially relevant confounding variables (e.g., depression, income).

Overall, the current study extends prior work (Salwa et al., 2022) on AS and food cravings. Specifically, the current study provides evidence for the role of AS social concerns and all food craving subscales. Moreover, the current study is broadly in line with previous work regarding AS cognitive concerns and desires to eat (Fulton et al., 2012). Future work is needed to extend this current model to determine the explanatory role of food cravings with AS and objective eating, examine potential interacting variables with AS social concerns (e.g., internalization of societal attitudes on body image norms), and explore these relations among other populations of interest (e.g., individuals utilizing Glucagon-Like Peptide-1).

Implications for Health Behavior Research

Knowledge from the current study can be leveraged in several important ways. First, through the identification of specific sub-facets of AS related to maladaptive eating cognitions and behaviors, this data can be used to provide greater precision medicine in the screening and treatment of these concerns. Specifically, rather than screening

and intervening on AS as a global construct when working to reduce food cravings, the current study highlights the importance of focusing on specific dimensions of AS. For example, if working with individuals on weight-related behaviors such as food cravings, it would be beneficial to screen for AS social concerns and, if needed, employ interoceptive exposure techniques aimed to elicit anxiety-related sensations in the presence of others. In terms of future directions in research, additional work is needed to determine if directly targeting AS social concerns results in reductions in food cravings via longitudinal work. Moreover, incorporating potential moderators (e.g., weight stigma) that may further enhance these relations would be important to consider. Finally, the current study sheds continued light on the role of fears of social judgment among this population and the importance of health care providers to take the necessary precautions to become aware of their own biases around weight-related behaviors, in order to not to reinforce social concerns/fears among this vulnerable population. This can be achieved through specific training to mitigate weight-related bias in clinical encounters.

Discussion Questions

Given that AS social concerns emerged as a predictor of food cravings, how might future interventions integrate techniques to reduce social concerns in order to improve eating-related outcomes?

Is it surprising that AS social concerns emerged as a significant predictor of food cravings, given the weight stigma frequently experienced by this population?

Funding: Research reported in this publication was supported by the National Institute on Minority Health and Health Disparities (NIMHD) of the National

Institutes of Health (NIH) to the University of Houston under Award Number U54MD015946. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Conflict of interest statement: The authors have no conflict of interest to declare.

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