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Relationship between trait suggestibility and eating-related behaviors in overweight and obesity

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Abstract

Differences in trait suggestibility among those with obesity may help explain differential responses to weight loss interventions. Ubiquitous advertising of unhealthy foods, weight-loss products that are not evidence-based, and myths regarding weight loss could be particularly sabotaging in individuals with high levels of suggestibility, with or at risk of developing obesity. This study explored relationships between suggestibility, body mass index (BMI), and self-reported eating-related behaviors that vary among those with obesity. A sample of ethnically diverse adults (N=73) with a BMI ≥ 25 completed the Short Suggestibility Scale (SSS), Palatable Eating Motives Scale (PEMS), Binge Eating Scale (BES), Dutch Eating Behavior Questionnaire-Restraint (DEBQ-R), and Barratt Impulsiveness Scale (BIS). Impulsiveness was controlled in analyses due to its strong association with suggestibility. Analyses revealed that BMI was not related to SSS scores, consistent with studies using hypnotic-suggestibility scales. However, SSS scores were positively associated with eating caloric food more frequently for Reward, Social, and Conformity motives, dieting behavior, and binge eating. Suggestibility was not related to eating for Coping motives or intent to diet. If supported by future replications, knowledge of these associations could potentially help inform and tailor weight-loss interventions to protect those that may be most susceptible to adopting invalid messages and products. Conversely, in those least suggestible, interventions might include ways of increasing trust in science-based recommendations from health professionals.

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Contributors

Mary Katherine Ray: Dr. Ray carried out and helped design the larger study that used the present data as part of the protocol, helped select the questionnaires that were used in the present study, conducted independent analyses to confirm Boggiano's, contributed manuscript text and references, provided critical review of drafts, co-prepared a revised manuscript, and approved the final revised manuscript as submitted.

Ashley E. Zachmann: Ms. Zachmann conceived of and conducted the factor analysis of the SSS included in the study, conducted literature searches, provided critical review of the manuscript, proofread final versions, and approved the final revised manuscript as submitted.

Caroline V. Caudill: Ms. Caudill conducted initial statistical analyses, performed literature searches, provided critical review of the manuscript, and approved the final revised manuscript submitted.

Mary M. Boggiano: Dr. Boggiano conceived of the study as lab PI, conducted the analyses, wrote the first draft of the manuscript, co-prepared a revised manuscript, and approved the final manuscript as submitted.

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Conflict of Interest

All the authors declared that they have no conflict of interest.

Keywords

eating behavior; weight-loss; suggestion; impulsiveness; binge eating; advertising

1. Introduction

Suggestibility is a personality trait wherein one is apt to believe and act on messages without considering information that would invalidate their veracity [1]. Hence, those with high suggestibility readily accept information, whereas those with low suggestibility think critically about the information and question its truth [1]. Little is known regarding the relationship between obesity and suggestibility. This is an important gap given the ubiquity of unvalidated products and messages aimed at weight loss [2] and the known difficulty of achieving and maintaining a healthy weight [3]. The few studies that explored the relationship found no correlation between obesity and suggestibility. However, these studies used a hypnosis suggestibility scale, examined only females, and compared scores to healthy-weight individuals published in other sources [4,5]. Hence, it remains unclear if suggestibility, especially when defined beyond hypnosis, is related to obesity.

Importantly, obesity is not characterized solely by a high body mass index (BMI). It entails particular eating-related behaviors that could contribute to positive energy balance that vary substantially among those with obesity. Examples of these behaviors include eating tasty foods in the absence of hunger for coping needs, social reasons, and the hedonic properties of the food itself [6]. Other behaviors include various degrees of binge-eating [7] and dieting [8–9]. While malleable, these tend to be habitual and attest to the behavioral heterogeneity that exists in obesity [7,10,11]. “Considering the eating-related heterogeneity that exists in obesity is critically important to the development and selection of optimal treatment [6–8, 12, 13].

If suggestibility were associated with these eating-related behaviors, it might pose particular challenges when individuals high in this trait attempt to lose weight. Suggestibility is a particular concern in the current environment, in which marketing and social media have increased exposure to advertisements of unhealthy foods and unvalidated or invalid weight-loss products [3, 14–17]. These messages also helped propagate myths about nutrition and weight loss [2]. Further, unhealthy food marketing is proposed to be a major driver of the obesity epidemic [18]. Logically, wide dissemination of this type of information is of greater concern to those high in suggestibility and with, or at risk for, obesity.

Knowing which habitual eating-related behaviors are associated with suggestibility could potentially be used to predict degree of success with weight management strategies and prevention of weight regain. It could also be used to tailor treatments to improve outcomes. For example, suggestible individuals could be made aware of their heightened vulnerability to act on food advertisements when not hungry and learn strategies to manage this tendency. One such treatment could involve media literacy strategies, i.e., teaching individuals to think critically about media messages [19]. These have been shown to improve body image, disordered eating, and eating-related attitudes [20]. The same strategies could potentially be incorporated into obesity interventions. Therefore, the purpose of this study was to

determine if suggestibility was associated not only with BMI, but with eating-related behaviors that can promote obesity.

2. Methods

2.1 Participants and Procedures

Data were collected from $N=73$ adults (59%F / 41%M) with a mean age of 19.9 , $SD=3.4$. The racial/ethnic breakdown of the sample was 29% Blacks, 48% non-Hispanic Whites, 15% Asian/Indians, and 8% individuals identifying as ‘Other.’ The participants served in a previous study at The University of Alabama at Birmingham (UAB) that tested the effect of treatment expectation on neuromodulation-induced suppression of food craving and eating using transcranial direct current stimulation (tDCS) [21]. In the present study, one case was omitted due to an outlying SSS score. Participants were not treatment-seeking and recruited from a pool of UAB students and employees via flyers and an online Introduction to Psychology recruitment system. Inclusion criteria included a BMI ≥ 25 with no current enrollment in a weight-loss program. Participants completed baseline questionnaires electronically prior to any of the tDCS procedures. The data described here were taken exclusively from baseline measurements.

2.2 Measures

2.2.1 Short Suggestibility Scale (SSS)—This 21-item scale measures the tendency to internalize and accept messages. The SSS is a subscale of the larger Multidimensional Iowa Suggestibility Scale (MISS) [1], and items relate to consumer and psychological suggestibility, persuasiveness, peer conformity, and physiological reactivity. For example, “I get a lot of good practical advice from magazines or TV.” Each item is rated from 1 (“Not at all or very slightly”) to 5 (“A lot”). The SSS score is the sum of the 21 items with a possible score range of 21–105 [1]. The MISS was validated across five stages in samples that included college students and community volunteers ($N=2,232$). The SSS subscale correlated 0.93 with the total suggestibility index and was found to be reliable in two different samples ($N = 712$; $N=638$) [1]. Previous studies have used the SSS [22–26], but to our knowledge, this is its first use in an obesity investigation. The SSS was chosen for its brevity and measure of general vs. hypnotic [27–29] and interrogative suggestibility [30]. Cronbach’s α in this sample was 0.83 .

2.2.2 Barratt Impulsiveness Scale-11 (BIS-11)—This 30-item scale assesses attentional, non-planning, and motor impulsiveness. Responses range from 1 (“Rarely/Never”) to 4 (“Always/Almost Always”). Higher scores represent greater reported impulsiveness [31]. Cronbach’s α in this sample = 0.79 . Impulsiveness was not a variable of interest but was measured because of its known positive relationship with overeating, binge-eating, higher BMI [32–34], and hypnotic suggestibility [35]. In this sample BIS-11 and SSS scores were also correlated ($r = 0.33$; $p = 0.004$) and, thus, were controlled in analyses.

2.2.3 Eating-Related Measures—Three standardized questionnaires were used that are validated to measure distinct aspects of eating behavior in obese, eating disorder, and healthy populations [8, 13, 36, 37].

1) *Palatable Eating Motives Scale (PEMS)*. This 20-item scale assesses frequency of consuming tasty foods and drinks for non-hunger motives including for Coping (e.g., “I consume these foods/drinks to forget my worries”), Reward Enhancement (Reward; e.g., “... because it gives me a pleasant feeling”), Social (e.g., “...because it helps me to enjoy a party”), and Conformity (e.g., “...to fit in with a group I like”) [13]. Responses range from 1 (“Never/Almost Never”) to 5 (“Always/Almost Always”) and are averaged for the subscale scores and summed for the total PEMS score [13]. Cronbach’s $\alpha = 0.91$ for the total PEMS.

2) *Binge Eating Scale (BES)*. This 16-item questionnaire assesses the presence and number of behaviors and feelings associated with binge eating. Each item has up to four unique response choices weighted from 0–3. The values are then summed for the final score with higher values denoting greater binge eating severity [36]. Cronbach’s $\alpha = 0.87$.

3) *Dutch Eating Behaviors Questionnaire-Restraint (DEBQ-R)*. This 10-item questionnaire yields two subscales, one measuring degree of intent to diet, and the other assessing the degree of actual dieting behavior, both for the purpose of losing weight. Responses range from 1 (“Never”) to 5 (“Very Often”) and are averaged for the final subscale scores [8]. Cronbach’s $\alpha = 0.90$.

2.2.4. Body mass index (BMI).—Body weight and height were taken barefoot in a private room using a calibrated scale and calibrated wall-mounted stadiometer. BMI was calculated as kg/meters².

2.3 Statistical Analyses

Distribution of scores on the measures were checked for normality using histograms, skewness, kurtosis z-values, and Shapiro-Wilk tests. There were no missing values. ANOVAs determined differences in SSS scores between sex and ethnicity. Pearson’s r (2-tailed and controlling for BIS-11 scores), tested associations between SSS scores, and age, BMI, and the eating-related measures. Data are reported as sample means (M) and standard deviations (SD). For all analyses, SPSS v. 25 was used and alpha was set at 0.05 for significance.

3. Results

3.1. Sample means on SSS and eating-related measures

Table 1 lists the sample’s mean SSS scores, BMI, and eating-related measures scores. SSS scores in the current sample ($M=44.97$, $SD=9.2$) were similar to those reported in a sample of college students ($M=53.80$, $SD=10.9$) and community volunteers ($M=44.29$, $SD=11.6$) [1]. Scores on the PEMS motives in the current sample ranked in the 75th percentile of scores from a $N=1,947$ sample of college students and were typical of those obtained in obesity vs. healthy BMI individuals [13]. The mean BES score indicated no binge eating; no binge eating range is (17) vs. mild-moderate (18–26) or severe (27) [37]. The mean DEBQ-R scores were similar to college students with non binge-eating disorder obesity [38].

3.2 Associations between suggestibility and demographics

SSS scores did not correlate with age and did not differ between males and females but differed between ethnic groups. Blacks scored lower than Whites ($M=40.3$, $SD=6.9$ vs. 47.5 , $SD=7.3$; $p=0.008$, respectively), and lower than Asian/Indians ($M=51.3$, $SD=11.5$; $p=0.002$). Individuals identifying as ‘Other’ scored lower than Whites ($M=34.8$, $SD=6.3$; $p=0.003$) and lower than Asian/Indians ($p=0.001$), but not differently from Blacks.

3.3 Correlations between suggestibility and eating-related behaviors

As shown in Table 1, BMI was unrelated to suggestibility. However, most of the PEMS motives, dieting behavior, and binge-eating were positively associated with SSS scores.

4. Discussion

This study revealed novel relationships between suggestibility and eating-related behaviors known to be associated with a higher BMI [6–9]. Namely they included eating tasty foods for reward, social, and conformity motives, active dieting, and binge-eating. All were positively associated with suggestibility scores. Interestingly, the PEMS Coping motive, unlike the other PEMS motives, was unrelated to suggestibility. Similarly, dieting behavior but not intent, as assessed by the DEBQ-R, was related to suggestibility. That some, but not all of the explored eating-related behaviors were associated with suggestibility provides some discriminative validity for the SSS in obesity research.

That suggestibility was related to some but not other eating-related behaviors may also provide clues for mediating factors. For example, the Social motive was most strongly associated with suggestibility. Hence, a candidate mediating factor may be one common in those who value, or need, interaction with others. Further, the association between the PEMS Conformity motive and suggestibility is perhaps not surprising given that both involve greater acquiescence with others. Future studies with samples that span BMI will be particularly valuable as the truncated BMI in the current study may have created a ceiling effect and obscured a correlation between suggestibility and BMI. Future studies will not only better determine if suggestibility and BMI are indeed unrelated, but may also provide clues concerning mediating factors. Specifically, if the eating behavior and suggestibility associations found here replicate across BMIs, other personality or psychological traits may mediate the link. However, if the association proves unique to obesity, the link may be mediated by factors found to be characteristic of obesity such as attenuated executive function [39, 40].

The study had limitations. It was exploratory, cross-sectional, and relied on self-report for the eating measures. Future studies in real-world settings and with treatment-seeking populations are needed to assess the clinical value of the findings. Nonetheless, the positive associations between habitual eating-related behaviors and suggestibility, even when controlling for impulsiveness, suggests that there may be an extra challenge for certain individuals with obesity whilst making food choices. For example, someone with high suggestibility *and* who habitually eats tasty foods for their rewarding properties might find it more difficult to resist believing that an advertised treat is indeed delicious, and more likely

to purchase and eat the food in the absence of hunger. On a positive note, awareness of these associations may prompt susceptible individuals to question messages and product efficacy and to plan for ways of dealing with vulnerable situations. Pending further investigations, clinicians could potentially use awareness of the associations to tailor obesity treatments for improved outcomes

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References

1. Kotov RI, Bellman SB, & Watson DB (2004). Multidimensional Iowa Suggestibility Scale (MISS) brief manual. <https://renaissance.stonybrookmedicine.edu/sites/default/files/MISSBriefManual.pdf>.
2. Casazza K, Brown A, Astrup A, Bertz F, Baum C, Brown MB, Dawson J, Durant N, Dutton G, Fields DA, Fontaine KR, Heymsfield S, Levitsky D, Mehta T, Menachemi N, Newby PK, Pate R, Raynor H, Rolls BJ, Sen B, Smith DLJ, Thomas D, Wansink B, & Allison DB (2015). Weighing the evidence of common beliefs in obesity research. *Critical Reviews in Food Science and Nutrition*, 55, 2014–2053, doi: 10.1080/10408398.2014.922044
3. Bray GA, Heisel WE, Afshin A, Jensen MD, Dietz WH, Long M, Kushner RF, Daniels SR, Wadden TA, Tsai AG, Hu FB, Jakicic JM, Ryan DH, Wolfe BM, & Inge TH (2018). The science of obesity management: An endocrine society scientific statement. *Endocrine Reviews*, 39, 79–132, doi: 10.1210/er.2017-00253. [PubMed: 29518206]
4. Deyoub PL (1978). Relation of suggestibility to obesity. *Psychological Reports*, 43, 175–180, doi:10.2466/pr0.1978.43.1.175 [PubMed: 704735]
5. Thorne DE, C. R, & A.G. F (1976). Are “fat-girls” more hypnotically susceptible? *Psychological Reports*, 38, 267–270, doi: 10.2466/pr0.1976.38.1.267 [PubMed: 1250925]
6. Burgess EE, Turan B, Lokken KL, Morse A, & Boggiano MM (2014). Profiling motives behind hedonic eating. Preliminary validation of the Palatable Eating Motives Scale. *Appetite*, 72, 66–72, 10.1016/j.appet.2013.09.016 [PubMed: 24076018]
7. Dalton M, Blundell J, & Finlayson GS (2013). Examination of food reward and energy intake under laboratory and free-living conditions in a trait binge eating subtype of obesity. *Frontiers in Psychology*, 4, 757. [PubMed: 24155732]
8. Van Strien T, Fritjers JER, Bergers GPA, & Defares PB (1986). Dutch Eating behaviour Questionnaire for assessment of restrained, emotional and external eating behaviour. *International Journal of Eating Disorders*, 20, 295–315, 10.1002/1098-108X(198602)5:2<295::AID-EAT2260050209>3.0.CO;2-T
9. Field AE, Manson JE, Taylor CB, Willett WC, & Colditz GA (2004). Association of weight change, weight control practices, and weight cycling among women in the Nurses’ Health Study II. *International Journal of Obesity and Related Metabolic Disorders*, 28, 1134–1142. [PubMed: 15263922]
10. Field AE, Inge TH, Belle SH, Johnson GS, Wahed AS, Pories WJ, Spaniolas K, Mitchell JE, Pomp A, Dakin GF, Wolfe B, & Courcoulas AP (2018). Association of obesity subtypes in the longitudinal assessment of bariatric surgery study and 3-year postoperative weight change. *Obesity*, 26, 1931–1937. 10.1002/oby.22287 [PubMed: 30421853]
11. Boutelle KN, Peterson CB, Crosby RD, Rydell SA, Zucker N, & Harnack L (2014). Overeating phenotypes in overweight and obese children. *Appetite*, 76, 95–100, doi: 10.1016/j.appet.2014.01.076 [PubMed: 24524975]
12. Shah M, Hurt RT, & Mundi MS (2017). Phenotypes of obesity: How it impacts management. *Current Gastroenterology Reports*, 19, 55 10.1007/s11894-017-0598-1 [PubMed: 28948512]

13. Boggiano MM (2016). Palatable Eating Motives Scale in a college population: Distribution of scores and scores associated with greater BMI and binge-eating. *Eating Behaviors*, 21, 95–98, doi: 10.1016/j.eatbeh.2016.01.001. [PubMed: 26826648]
14. Schwemmer C, & Ziewiecki S (2018). Social media sellout: The increasing role of product promotion on YouTube. *Social Media + Society*, 4, 1–20, 10.1177/2056305118786720
15. Moorhead SA, Hazlett DE, Hrrison L, Carroll JK, Irwin A, & C. H (2013). A new dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. *Journal of Medical Internet Research*, 15, e85, doi: 10.2196/jmir.1933 [PubMed: 23615206]
16. Whalen R, Harrold J, Child S, Halford J, & Boyland E (2018). The health halo trend in UK television food advertising viewed by children: The rise of implicit and explicit health messaging in the promotion of unhealthy foods. *International Journal of Environmental Research and Public Health*, 15, pii: E560, doi: 10.3390/ijerph15030560
17. Milani GP, Silano M, Pietrobelli A, & Agostoni C (2017). Junk food concept: seconds out. *International Journal Of Obesity*, 41, 669–671, doi: 10.1038/ijo.2017.18 [PubMed: 2811454]
18. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, & Gortmaker SL (2011). The global obesity pandemic: shaped by global drivers and local environments. *Lancet*, 378, 804–814, doi: 10.1016/S0140-6736(11)60813-1 [PubMed: 21872749]
19. Aufderheide P (1993). *Media Literacy. A Report of the National Leadership Conference on Media Literacy In Conference on Media Literacy*. Queenstown, MD: Aspen Institute.
20. McLean SA, Paxton SJ, & Wertheim EH (2016). The role of media literacy in body dissatisfaction and disordered eating: A systematic review. *Body Image*, 19, 9–23, doi: 10.1016/j.bodyim.2016.08.002 [PubMed: 27572000]
21. Ray MK, Sylvester MD, Helton A, Pittman BR, Wagstaff LE, McRae TR 3rd., Turan B, Fontaine KR, Amthor FR, & Boggiano MM (2019). The effect of expectation on transcranial direct current stimulation (tDCS) to suppress food craving and eating in individuals with overweight and obesity. *Appetite*, 136, 1–7, doi: 10.1016/j.appet.2018.12.044 [PubMed: 30611756]
22. Prete MI, Guido G, & Pichierrri M (2013). Consumer hypnotic-like suggestibility: possible mechanism in compulsive purchasing. *Psychological Reports*, 113, 1174–1186. [PubMed: 24340808]
23. Henry GK, Heilbronner RL, Suhr JG, Wagner E, & Drane DL (2018). Illness perceptions predict cognitive performance validity. *Journal of International Neuropsychological Society*, 24, 735–745, doi: 10.1017/S1355617718000218
24. Kaviani H, & Hatami N (2016). Link between mindfulness and personality-related factors including empathy, theory of mind, openness, pro-social behaviour and suggestibility. *Clinical Depression*, 2, 119, doi: 10.4172/2572-0791.1000119
25. Brüne M, Tas C, Wischniewski J, Welpinghus A, Heinisch C, & Newen A (2012). Hypnotic ingroup-outgroup suggestion influences economic decision-making in an ultimatum game. *Conscious and Cognition*, 21, 939–946, doi: 10.1016/j.concog.2012.02.009
26. Negut A, & Sárbescu P (2014). Problem music or problem stereotypes? The dynamics of stereotype activation in rock and hip-hop music. *Musicae Scientiae*, 18, 3–16, doi: 10.1177/1029864913499180
27. Shor RE, & Orne EC (1962). *Harvard Group Scale of Hypnotic Susceptibility, Form A*. Palo Alto, CA: Consulting Psychologists Press.
28. Weitzenhoffer AM, & Hilgard ER (1959). *Stanford hypnotic susceptibility scale*. Palo Alto, CA.: Consulting Psychologists Press.
29. Barber TX, & Wilson SC (1978–1979). The Barber Suggestibility Scale and the Creative Imagination Scale: Experimental and clinical applications. *American Journal of Clinical Hypnosis*, 21, 84–108, 10.1080/00029157.1978.10403966
30. Gudjonsson GH (1984). A new scale of interrogative suggestibility. *Personality and Individual Differences*, 5, 303–314, 10.1016/0191-8869(84)90069-2
31. Patton JH, Stanford MS, & Barratt ES (1995). Factor structure of the Barratt Impulsiveness Scale. *Journal of Clinical Psychology*, 51, 768–774, doi: 10.1002/1097-4679(199511)51:6<768::AID-JCLP2270510607>3.0.CO;2-1 [PubMed: 8778124]

32. Guerrieri R, Nederkoorn C, & Jansen A (2008). The interaction between impulsivity and a varied food environment: Its influence on food intake and overweight. *International Journal Of Obesity*, 32, 708–714, doi:10.1038/sj.ijo.0803770 [PubMed: 18059403]
33. Waxman SE (2009). A systematic review of impulsivity in eating disorders. *European Eating Disorders Reviews*, 17, 408–425, doi: 10.1002/erv.952
34. Meule A, & Blechert J (2017). Indirect effects of trait impulsivity on body mass. *Eating Behaviors*, 26, 66–69, doi: 10.1016/j.eatbeh.2017.01.012 [PubMed: 28167412]
35. Ludwig VU, Stelzel C, Krutiak H, Prunkl CE, Steimke R, Paschke LM, Kathmann N, & Walter H (2013). Impulsivity, self-control, and hypnotic suggestibility. *Consciousness and Cognition*, 22, 637–653, doi:10.1016/j.concog.2013.04.001 [PubMed: 23660477]
36. Gormally J, Black S, Daston S, & Rardin D (1982). The assessment of binge eating severity among obese persons. *Addictive Behaviors*, 7, 47–55, 10.1016/0306-4603(82)90024-7 [PubMed: 7080884]
37. Marcus MD, Wing RR, & Hopkins J (1988). Obese binge eaters: Affect, cognitions, and response to behavioral weight control. *Journal of Consulting and Clinical Psychology*, 56: 433, doi: 10.1037//0022-006x.56.3.433 [PubMed: 3397436]
38. Ray MK, Sylvester MD, Osborn L, Helms J, Turan B, Burgess EE, & Boggiano MM (2017). The critical role of cognitive-based trait differences in transcranial direct current stimulation (tDCS) suppression of food craving and eating in frank obesity. *Appetite*, 116, 568–574, doi: 10.1016/j.appet.2017.05.046 [PubMed: 28572072]
39. Olivio G, Gour S, & Schiöth HB (2019). Low neuroticism and cognitive performance are differently associated to overweight and obesity: A cross-sectional and longitudinal UK Biobank study. *Psychoneuroendocrinology*, 101:167–174, doi:10.1016/j.psyneuen.2018.11.014 [PubMed: 30469083]
40. Favieri F, Forte G, & Casagrande M (2019). The executive functions in overweight and besity: A systematic review of neuropsychological cross-sectional and longitudinal studies. *Frontiers in Psychology*, 10: 2126, doi: 10.3389/fpsyg.2019.02126 [PubMed: 31616340]

Highlights:

- Trait suggestibility and obesity-relevant behaviors were found to be associated
- Actual dieting, but not intent to diet, was related to greater suggestibility
- Binge eating was associated with suggestibility
- Reward, social, and conformity eating motives were related to higher suggestibility
- Eating for coping motives was not associated with suggestibility

Table 1.

Sample mean scores (SD) on SSS, BMI, and the eating-related measures, and correlations between each eating-related measure and the SSS.

Eating-Related Measures	Mean (SD)	Correlations with SSS ^a	
		<i>r</i> =	<i>p</i> =
BMI	31.89 (5.51)	0.12	0.321
SSS	44.97 (9.15)		
PEMS Coping	2.32 (0.95)	0.20	0.097
PEMS Reward	2.58 (0.80)	0.38	0.001
PEMS Social	2.65 (0.97)	0.51	<0.001
PEMS Conformity	1.43 (0.50)	0.39	0.001
BES	9.70 (6.7)	0.26	0.027
DEBQ-R Intent	2.53 (0.93)	0.16	0.181
DEBQ-R Behavior	2.60 (0.75)	0.28	0.015

^aControlling for Barratt Impulsiveness Scale-11 scores.

Body Mass Index = BMI; SSS= Short Suggestibility Scale; PEMS = Palatable Eating Motives Scale (with its 4 subscales shown); BES = Binge Eating Scale; DEBQ-R = Dutch Eating Behavior Questionnaire-Restraint (with its 2 subscales shown); significant *p* values are bolded.