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Personality and the Social Experience of Body Weight

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Abstract

Personality traits have been associated consistently with objective and subjective experiences of body weight. We examine whether this association extends to social attitudes and behaviors related to weight. Participants were mothers with children ($N=3,099$) who completed measures of personality and weight-related attitudes and social interactions. Higher Neuroticism and higher Extraversion were associated with more negative attitudes towards persons with obesity and engagement in fat talk with their friends and around their children. Higher Conscientiousness was associated with fewer negative attitudes and interactions but greater phobia towards obesity, whereas higher Openness and higher Agreeableness were generally associated with more positive attitudes and experiences. The associations for Conscientiousness, Openness, and Agreeableness held only for participants at relatively lower body mass index. Higher Neuroticism and lower Conscientiousness were further associated with the experience of weight discrimination. The present research indicates that in addition to measured weight and body image, personality traits are associated with the social experience of body weight.

Keywords

weight attitudes; stereotypes; five factor model; weight discrimination; fat talk

Personality has consistent associations with objective and subjective body weight. Individuals higher in Conscientiousness, for example, tend to weigh less (Sutin et al., 2011) and are at lower risk of obesity over time (Jokela et al., 2013). Neuroticism is likewise associated with objective weight outcomes (Armon et al., 2013). These traits are also implicated in the subjective experience of body weight. Individuals higher in Neuroticism, for example, tend to see themselves as heavier than they objectively measure (Allen et al., 2018; Sutin & Terracciano, 2016) and hold more negative attitudes toward their bodies (Allen & Walter, 2016). Less is known, however, about personality and the social experience of body weight, including attitudes, beliefs, and social interactions involving body weight.

Obesity elicits strong attitudes and stereotypes (Puhl & Heuer, 2009). Many individuals, for example, hold negative attitudes toward excessive body weight and believe that individuals with obesity are less happy, less sociable, and more ashamed and isolated than individuals without obesity (Allison, Basile, & Yunker, 1991). These attitudes stem, in part, from controllability beliefs: Individuals who believe that obesity is under one's control hold

stronger negative attitudes toward it (Hansson & Rasmussen, 2014). It is also common for individuals, particularly women, to engage in derogatory conversations about their own bodies, such as fat talk (Engeln-Maddox, Salk, & Miller, 2012), even around their children (Bauer, Bucchianeri, & Neumark-Sztainer, 2013). There has been interest in the demographic and body weight correlates of weight-related attitudes (e.g., Flint, Hudson, & Lavalley, 2015); less work has addressed the trait psychological correlates of these dimensions.

To that end, the purpose of this study is to examine whether Five Factor Model personality traits are associated with attitudes about obesity, fat phobia, implicit theories of weight, fat talk, and weight discrimination. Based on the literature on personality and the objective and subjective experience of body weight, we expect that higher Neuroticism and lower Conscientiousness will be associated with negative social experiences with weight, whereas Extraversion will be associated with positive attitudes and experiences. We expect Openness and Agreeableness to be associated with positive attitudes and experiences because individuals with these traits tend to hold less prejudice in general (Sibley & Duckitt, 2008).

Method

Participants and Procedure

A total of 3,099 women with children (Table 1) living in the United States reported on their personality and weight-related attitudes and behaviors (see below). Participants were recruited through Survey Sampling International and directed to a Qualtrics survey administered by the researchers. Informed consent was obtained before starting the survey.

Measures

Unless otherwise noted, items were rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Scales are scored in the direction of the label of the construct.

Personality.—Participants completed the Ten-Item Personality Inventory (TIPI), a brief measure with demonstrated retest reliability and predictive validity (Gosling, Rentfrow, & Swann, 2003). The TIPI measures each trait with two items: Neuroticism (anxious, easily upset), Extraversion (extraverted, enthusiastic), Openness (open to new experiences, complex), Agreeableness (sympathetic, warm), and Conscientiousness (dependable, self-disciplined).

Attitudes toward obesity.—Participants completed the Attitudes Toward Obese Persons scale (ATOP; Allison et al., 1991). This 20-item scale (e.g., “Obese workers cannot be as successful as other workers.”) measured attitudes toward individuals with obesity ($\alpha=.77$).

Fat phobia.—Fat phobia was measured with the 14-item Fat Phobia Scale (Bacon, Scheltema, & Robinson, 2001). Each item lists two adjectives (e.g., industrious versus lazy); participants indicated which adjective described their feelings and beliefs about people with obesity. Participants rated each pair from 1 (strong agreement with first adjective) to 5 (strong agreement with the second adjective) ($\alpha=.92$).

Implicit theories of obesity.—Participants completed the Implicit Theory of Weight measure (Burnette, 2010). This 6-item scale (e.g., “You have a certain body weight, and can’t really do much to change it.”) assessed beliefs in the ability to change weight (growth mindset) versus body weight as beyond control of the individual (fixed mindset) ($\alpha=.76$).

Negative body talk.—Participants completed the 13-item Negative Body Talk Scale (Engeln-Maddox et al., 2012). This scale measured the frequency individuals verbalize negative thoughts about their weight (e.g., frequency of saying to others, “This outfit makes me look fat.”). Items were rated from 1 (*never*) to 7 (*always*) ($\alpha=.97$).

Fat talk.—Participants completed the 14-item Fat Talk Questionnaire (Royal, Macdonald, & Dionne, 2013), which measured frequency of complaints about one’s body. Participants responded with respect to how often they complained about their weight around their child (e.g., “When my child could overhear, I have...complained that my stomach is fat.”) ($\alpha=.98$).

Weight discrimination.—Participants responded (yes/no) to the item, “Have you ever been treated unfairly because of your weight?”

Body mass index (BMI).—BMI was derived as kg/m^2 from reported height and weight.

Analytic Strategy

Linear regression was used to examine the association between personality traits and the weight-related outcomes (assumptions for linear regression were met). Each weight measure was predicted from personality, controlling for age, education, and race/ethnicity. Logistic regression was used for weight discrimination because it was a binary outcome. Finally, we tested for an interaction between mean-centered personality and mean-centered BMI to examine whether participant BMI moderated the associations.

Results

The association between personality and the weight-related outcomes is shown in Table 2 (full model in Table S1). Higher Neuroticism was associated with more negative attitudes toward obesity, greater fat phobia, more fat talk with friends and in the presence of their children, and weight discrimination. Neuroticism was unrelated to mindset. Participants higher in Extraversion also held more negative attitudes toward obesity and engaged in more fat talk; Extraversion was unrelated to weight discrimination. The association between Conscientiousness and the weight measures were mostly consistent with expectations: Conscientiousness was associated with fewer negative attitudes, less frequent fat talk, and lower risk of weight discrimination. The one exception was fat phobia: Participants higher in Conscientiousness had more phobia toward obesity. Finally, Openness and Agreeableness were associated with positive attitudes toward obesity, a more incremental mindset, and less engagement in fat talk; neither trait was related to discrimination.

The pattern of results was identical when participant BMI was included as an additional covariate. Participant BMI, however, moderated many of these associations (Table S2 and

Figures S1-S5). Most notably, the associations between Openness, Agreeableness, and Conscientiousness and fat phobia ($\beta_{\text{interaction}} = -.04$ [$p = .036$], $-.05$ [$p = .007$], and $-.06$ [$p = .001$], respectively for Openness, Agreeableness, and Conscientiousness), fixed mindset ($\beta_{\text{interaction}} = .04$ [$p = .046$], $.06$ [$p < .001$], and $.04$ [$p = .012$], respectively for Openness, Agreeableness, and Conscientiousness), negative body talk ($\beta_{\text{interaction}} = .09$ [$p < .001$], $.09$ [$p < .001$], and $.10$ [$p < .001$], respectively for Openness, Agreeableness, and Conscientiousness), and fat talk ($\beta_{\text{interaction}} = .08$ [$p < .001$], $.11$ [$p < .001$], and $.13$ [$p < .001$], respectively for Openness, Agreeableness, and Conscientiousness) were stronger at relatively lower BMI than higher BMI. Weight discrimination was also less likely to occur at lower BMI for individuals lower in Openness ($OR_{\text{interaction}} = 1.02$, 95% CI = 1.01–1.03), Agreeableness ($OR_{\text{interaction}} = 1.03$, 95% CI = 1.02–1.05), and Conscientiousness ($OR_{\text{interaction}} = 1.02$, 95% CI = 1.01–1.03), whereas these traits were unrelated to discrimination at higher BMI. Likewise, the positive association between Extraversion and attitudes toward obesity and fat talk was stronger at lower BMI ($\beta_{\text{interaction}} = -.05$, $p = .015$ and $-.04$, $p = .025$, respectively). Finally, the association between Neuroticism and attitudes toward obesity was stronger at higher participant BMI ($\beta_{\text{interaction}} = .06$, $p < .001$).

Discussion

The present research examined the association between Five Factor Model personality traits and the social experience of body weight. Consistent with the literature on Neuroticism and body image, this trait was associated with negative attitudes and behavior toward obesity and weight. Individuals who score high in Neuroticism are less satisfied with their body (Frederick, Sandhu, Morse, & Swami, 2016), appreciate their body less (Swami et al., 2013), and perceive their body as larger (Hartmann & Siegrist, 2015). The present research suggests that these negative attitudes extend beyond the self to judgments of people with obesity more generally. In addition, individuals high in Neuroticism also tend to talk more negatively about their weight, even in the presence of their children. This behavior may be one way in which mothers shape the attitudes of their children toward body weight. These associations were apparent across the BMI spectrum, with only the association with negative attitudes toward obesity relatively stronger at higher BMI. The lack of significant association between Neuroticism and a fixed mindset suggests that the negative attitudes toward obesity among individuals high in Neuroticism are unlikely to be driven by implicit theories. The association between Extraversion and attitudes and behaviors around weight were similar to Neuroticism. This pattern was surprising because, in contrast to Neuroticism, individuals high in Extraversion tend to be more satisfied with their bodies and report having a more positive body image overall (Allen & Walter, 2016). This positive attitude toward one's own body apparently does not extend to either attitudes toward obesity or how individuals talk about their weight with other people.

Conscientiousness was associated with a less negative attitude toward obesity and with less engagement in fat talk, both with their friends and around their child. This association is consistent with previous findings that conscientious individuals tend to hold more positive images of their body (Allen & Walter, 2016). Individuals high in Conscientiousness also tend to have lower BMI (Sutin et al., 2011) that may contribute to less need to regulate their feelings about weight through verbalizing it. These individuals were also more likely to

endorse an incremental mindset towards body weight – they believe their weight is under their own control through diet and exercise. These beliefs may be one mechanism through which individuals high in Conscientiousness are able to manage their weight. Conscientiousness was, however, also associated with greater endorsement of fat phobia. This association was surprising given that this trait tends to be associated with more positive weight-related attitudes and beliefs. Individuals high in Conscientiousness, however, are known as rule followers and tend to adhere to the beliefs of their society (Costa & McCrae, 1992). Their endorsement of obesity stereotypes may be consistent with their need to fit with beliefs held by society more broadly.

Participant BMI moderated the relation between three traits (Openness, Agreeableness, Conscientiousness) and five of the six weight-related measures (fat phobia, fixed mindset, negative body talk, fat talk, and weight discrimination): Each of these traits was only related to these measures at relatively lower BMI and were unrelated at higher BMI. BMI is a predictor of attitudes and experiences with body weight (Scott & Rosen, 2015), and it appears that the effect of BMI on these dimensions overwhelms individual differences in personality at higher weights. These traits may only shape attitudes and social behaviors when the individual is at a relatively lower BMI, whereas associations for a trait like Neuroticism extend to the full BMI continuum.

The present research had several strengths, including a large and relatively diverse sample. Limitations included that the sample only included women who had children because the parent study was on mother characteristics and attitudes toward their child's weight (Sutin et al., 2018) and that the data were cross-sectional. Future research could examine whether these associations extend to men and women without children and whether personality is related to change in attitudes and behavior over time. Still, the present research indicates that personality traits are associated with social experiences with body weight.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Descriptive Statistics for all Study Variables

Variable	Mean (SD) or %
Age (years)	35.36 (9.05)
Education ^a	3.36 (1.18)
Race/ethnicity (white)	63%
Race/ethnicity (African American)	19%
Race/ethnicity (Hispanic)	10%
Race/ethnicity (Asian)	4%
Race/ethnicity (multiracial)	3%
Race/ethnicity (other/unknown)	1%
Body mass index (kg/m ²)	26.79 (7.16)
Weight-related outcomes	
Attitudes toward obesity	2.94 (.47)
Fat phobia	3.42 (.79)
Fixed Mindset	2.32 (.79)
Negative body talk	2.06 (1.09)
Fat Talk	1.91 (1.06)
Weight discrimination	35%
Personality	
Neuroticism	2.71 (.91)
Extraversion	2.99 (.97)
Openness	3.52 (.85)
Agreeableness	3.65 (.81)
Conscientiousness	3.81 (.85)

Note. $N=3,099$.

^aEducation was reported on a scale from

1 (less than high school) to 6 (professional/advanced degree;

3 corresponds to an associate's degree).

Table 2

Association between Personality and Measures of Social Experiences with Body Weight

Trait	Negative attitudes	Fat phobia	Fixed mindset	Negative body talk	Fat talk	Weight Discrimination
Neuroticism	.05 *	.13 **	-.02	.11 **	.08 **	1.30 (1.18–1.44) **
Extraversion	.06 **	-.07 **	.02	.13 **	.10 **	.98 (.90–1.06)
Openness	-.13 **	.03	-.15 **	-.09 **	-.10 **	1.07 (.96–1.19)
Agreeableness	-.12 **	.03	-.12 **	-.08 **	-.11 **	.95 (.84–1.06)
Conscientiousness	-.06 **	.18 **	-.22 **	-.22 **	-.24 **	.77 (.70–.86) **
R ² Change	.06	.04	.12	.12	.14	.03

Note. $N=3,099$. Coefficients are standardized beta coefficients or odds ratios (95% Confidence Intervals) for each trait controlling for age, education, and race/ethnicity and the other four traits. R² Change is the variance explained by personality after the variance explained by the demographic factors.

* $p < .05$.

** $p < .01$.