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Attitudes toward health and taste of food among women with bulimia nervosa and women of a non-clinical sample



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ABSTRACT

Taste preferences and health concerns play important roles in determining eating attitudes, thus influencing food choices. Disordered eating attitudes are common among women, and can lead to the development and maintenance of eating disorders (ED). Attitudes toward health and taste of food among ED patients and its comparison with non-clinical women are not well known, and this knowledge could improve eating interventions. In this study, we compared taste preferences and health concerns in 27 women with diagnosis of bulimia nervosa (BN) and 216 women of a non-clinical sample. All participants completed the Health and Taste Attitude Scale (HTAS). Using analysis of covariance we compared the HTAS scores of the BN patients with those of the college students. Risk behaviors for ED (assessed by the Eating Attitudes Test) were identified in 54 (25%) of the non-clinical sample, all of whom were therefore excluded in comparison of BN patients. Non-clinical sample, compared to patients, scored higher on the HTAS Taste domain (p < 0.001) and its pleasure subscale (p < 0.001), whereas patients scored higher on the HTAS Health domain (p < 0.05) and its light product interest subscale (p < 0.05). Based on our data, eating attitudes of women of non-clinical sample are related to taste and pleasure, whereas women with BN are concerned with adopting a diet regarded as healthy, thus increasing their interest in "light" products. Therefore, the taste and health concerns must be considered in nutrition interventions for women in general, and prevention and treatment of ED as determinants of food choice.

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1. Introduction

Eating disorders (ED) are relatively rare among the general population, but they have an important impact in life of suffers and they have an elevated mortality risk (APA, 2013 Smink, van Hoeken, & Hoek, 2012). ED constitutes an extreme example of the consequences of disordered eating attitudes and the treatment is considered expensive (Simon, Schimidt, & Pilling, 2005). Bulimia nervosa (BN) is an ED characterized by chaotic eating patterns governed by a cycle of restriction/binge eating/purging (APA, 2013; Alvarenga et al., 2014). Nevertheless women typically have heightened concerns about the effects that eating might have on their body shape and weight, and are more likely than men to have a poor body image and disordered eating attitudes, thus being more susceptible to developing an ED (Neighbors & Sobal, 2007; Rozin, Fischler, Imada, Sarubin, & Wrzesniewski, 1999). Despite this

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knowledge, the determinants of food choice in ED and its comparison with non-clinical women are not explored.

Eating attitudes, which include beliefs, thoughts, feelings, and behaviors related to food (Alvarenga et al., 2010), are influenced by biological, psychological, anthropological, and sociocultural factors, as well as by the interactions among them (Fischler & Masson, 2008; Jomori, Proença, & Calvo, 2008; Steptoe, Pollard, & Wardle, 1995), ultimately influencing food choices. The contemporary food culture is experiencing a crisis of traditional food codes and meanings, in which individuals seek rules that might apply to their diet (Fischler, 1979; Goldenberg, 2011). Concern for health could be one of these rules, although health is defined as not only the absence of disease and disability, but also good physical performance, functionality, and capacity (Almeida Filho, 2011). Therefore, if healthy eating is defined as the sum of nutrients and reduced to a means of preventing or curing disease, it reflects the "medicalization" and rationalization of consumption (Kraemer, Prado, Ferreira, & Carvalho, 2014; Poulain, 2001) and could also be governed by concerns about body image (Fischler & Masson, 2008), as occurs in ED (APA, 2006).

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The ability to perceive the taste of food is inherent in humans (Birch, 1999), and the taste itself - derived from a set of sensory characteristics and large responsible for the pleasure of eating - is said to be an important role in food choice, dietary behaviors and intake (Kourouniotis et al., 2016) or to be the main determinant of the selection of specific foods for consumption (Eertmans, Bayeens, & Van den Bergh, 2001; Jacquier, Bonthoux, Baciu, & Ruffieux, 2012). Nevertheless, the taste of foods currently has a troubled, almost antithetical relationship with health, and the pleasure derived from eating is commonly perceived as incompatible with healthy eating habits (Jallinoja, Pajara, & Absetz, 2010).

Some people have more positive attitudes toward the taste of foods and the pleasure of eating, whereas the eating attitudes of others are guided mostly by health concerns (Rozin et al., 1999).

Taste preferences and health concerns play important roles in determining eating attitudes, and recognizing the importance of the dichotomy between the taste of foods and health concerns facilitates the understanding of why people eat what they eat. So, this study want to know if eating attitudes related to health concern or taste of food is different or similar in women with BN compared to a non-clinical sample — and to test if body dissatisfaction is a predictor of these attitudes. Such knowledge can inform decisions regarding the development of effective nutrition education programs, as well as those regarding the prevention and treatment of disordered eating attitudes and EDs.

2. Material and methods

2.1. Participants and procedures

In this study, we evaluated women with diagnosis of BN and women of a non-clinical sample. All participants were between 18 and 40 years of age.

Women of non-clinical sample were recruited from those enrolled in specific undergraduate courses at the University of São Paulo, in the city of São Paulo, Brazil: medicine, nursing, education, physical education, and public health. We asked each respective course coordinator to recommend a class from which the participants would be recruited. We excluded those enrolled in the nutrition sciences course, because studies have indicated that there is a high incidence of disordered eating attitudes in that population (Fiates & Salles, 2001; Korinth, Schiess, & Westenhoefer, 2010).

The BN group comprised women who had been diagnosed with BN or with a bulimia-like "eating disorder not otherwise specified" (when the frequency of binge-eating or purging episodes is lower than that established for a diagnosis of BN) and had been under specialized nutritional treatment for ED for no more than 30 days. All diagnoses had been established by a psychiatrist, in accordance with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (APA, 1994), which was still in effect at the time of data collection. The patients were recruited from the four main facilities specializing in the treatment of EDs in Brazil, all of which are in the state of São Paulo. Patients with psychosis, severe depression, or substance dependence were excluded.

2.2. Instruments

Attitudes toward health and the taste of foods were evaluated by the Health and Taste Attitude Scale (HTAS), developed by Roininen, Lähteenmäki, and Tuorila (1999). The Health domain of the HTAS, which has been translated to Portuguese and adapted for use in Brazil (Soares, Deliza, & Gonçalves, 2006), comprises three subscales *-general health interest*, light product interest, and natural product interest - and is related to concern regarding the adoption of a diet typically considered healthy, as well as to the consumption of

"light", organic, and additive-free foods. The *Taste* domain of the HTAS also comprises three subscales - *craving for sweet foods, using food as a reward*, and *pleasure* - and is related to the importance of taste and pleasure in eating (Roininen et al., 1999). However, in the adapted Portuguese-language version of the HTAS for use in Brazil (Koritar, Philippi, Alvarenga, & Santos, 2014), the Confirmatory Factor Analysis found a Comparative Fit Index (CFI) of 0.824 and Root Mean Squared Error Approximation (RMSEA) of 0.103, justifying an Exploratory Factor Analysis that indicated the division of the *craving for sweet foods* subscale into *personal craving* and *the cravings of others*. After new Confirmatory Factor Analysis, CFI of 0.907 and RMSEA of 0.076 were obtained (Koritar et al., 2014).

Body dissatisfaction was assessed using the Brazilian Silhouettes Scale for adult females, which consists of 15 silhouettes (Kakeshita, Silva, Zanatta, & Almeida, 2009). The degree of body dissatisfaction was calculated by determining the difference between the number of figure the participants selected as representing their body at present and the number of figure they selected as representing the body they would like to have (Kakeshita et al., 2009).

The HTAS, like any self-report scale, evaluates "declared practices", which are subject to transformation, deformation, and the consequences of cognitive phenomena such as semantic restructuring, forgetfulness, and denial (Poulain & Proença, 2003). Therefore, to determine whether the declared practices correspond in some way to reality and were consistent with immediate food choices, the women of non-clinical sample were offered an apple (a fruit that is popular in Brazil) or a chocolate candy as a thank-you gift for participating in the survey. They were asked to choose between the two before delivering the completed scale, and their choice was noted.

ED risk behavior was evaluated among the women of non-clinical sample by the 26-item Eating Attitudes Test (EAT-26), developed by Garner, Olmsted, Bohr, and Garfinkel (1982), translated and adapted for use in Brazil (Bighetti, Santos, Santos, & Ribeiro, 2004). A score \geq 21 on the EAT-26 indicates ED risk. Those who had an EAT-26 score \geq 21 were therefore excluded from the comparisons with the patients, but were compared with the women of non-clinical sample who exhibited no ED risk behaviors.

The weight and height of each participant was measured according to standard protocols (WHO, 1995) in which weight was measured with minimal clothes using an electronic scale +/-0.01kd (SANNY, Brazil) and height was measured without shoes using a stadiometer (SANNY, Brazil). Weight status was determined using the body mass index (BMI), weight divided by the square of the height (kg/m²) categories established by the World Health Organization (2006) - underweight (<18.5 kg/m²); normal range (18.5–24.99 kg/m²); overweight (25.0–29.99 kg/m²); and obesity (\geq 30.0 kg/m²).

2.3. Statistical analyses

The sample size calculation was based on the HTAS scores obtained in a pilot study involving 51 women of non-clinical sample and 18 patients with diagnosis of BN. We determined that the ideal ratio of women of non-clinical sample to patients would be 3:1 (e.g., 75 women of non-clinical sample to 25 patients). To compensate for potential losses, we added 10% to the *N*. The final sample comprised 27 BN patients and 216 women of non-clinical sample.

The normality of the variables was tested by the one-sample Kolmogorov-Smirnov test. To compare the mean HTAS domain and subscale scores between groups (non-clinical sample without ED risk with BN patients; and non-clinical sample without and with ED risk), we used analysis of covariance (adjusted for age and BMI) for the variables with normal distribution; for the remaining

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