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Psychometric properties of the intuitive eating scale-2 (IES-2) in a culturally diverse Hispanic American sample

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ABSTRACT

Background: Intuitive eating is an adaptive eating tendency consistently associated with positive physical and mental health outcomes, including lower risk for obesity and eating disorders (EDs). Obesity rates are disproportionately high in Hispanic American populations, yet the properties of intuitive eating remain to be examined in such samples.

Method: The current study examined the psychometric properties of the Intuitive Eating Scale-2 (IES-2) in a Hispanic American sample of adult college students (N = 482), and related IES-2 scores to levels of disordered eating, body mass index (BMI), fruit and vegetable consumption, and body shape satisfaction.

Results: The final confirmatory factor analysis supported a three factor, 11 item measure with the subscales of Eating for Physical Rather Than Emotional Reasons, Reliance on Hunger and Satiety Cues, and Body Food Choice Congruence. The Unconditional Permission to Eat subscale could not be replicated in the current sample. As predicted, scores on the revised measure differed by BMI category and body shape satisfaction, and correlated with disordered eating tendencies and fruit and vegetable consumption.

Conclusion: The current findings demonstrate that the modified IES-2 is better tailored to assess the cultural nuances influencing intuitive eating and can advance understanding how intuitive eating is understood and practiced in Hispanic Americans, compared to the original measure.

1. Introduction

Intuitive eating is a flexible eating behavior grounded in attunement to, trust in, and adequate responses to physiological hunger and satiety cues (Tylka, 2006). In contrast, responding to external motives and pressures in place of internal appetite cues is associated with weight gain (Franko et al., 2012). Intuitive eating tendencies are related to emotional, psychological, and physical well-being across adulthood (Augustus-Horvath & Tylka, 2011). Higher levels of intuitive eating are associated with greater levels of enjoyment and positive associations with food, and reduced levels of food anxieties and dieting behaviors (Smith & Hawks, 2006). Intuitive eating is related to lower levels of cholesterol, cardiovascular risk, and body mass index (BMI) (Hawks, Madanat, Hawks, & Harris, 2005; Van Dyck, Herbert, Happ, Kleveman, & Vögele, 2016), is inversely associated with disordered eating behavior (Tylka & Wilcox, 2006), and is more sustainable long-term than dieting (Bacon, Stern, Van Loan, & Keim, 2005). In a longitudinal study comparing the physical and mental health benefits of intuitive eating to those of dietary restraint, Bacon and colleagues found that the health gains and weight loss associated with intuitive eating persisted for two years, whereas dieters showed improvement initially yet eventually regained the lost weight. The psychological correlates of intuitive eating are numerous. When examined in cross-sectional, single-time point research designs, higher levels of intuitive eating are related to higher levels of self-compassion (Schoenefeld & Webb, 2013), body appreciation (Avalos & Tylka, 2006), and lower levels of appearance-related social comparison (Andrew, Tiggemann, & Clark, 2015; Van Dyke & Drinkwater, 2014). While reported levels of intuitive eating tend to be higher in men as compared to women (Tylka & Van Diest, 2013), the benefits of intuitive eating hold true across genders (Smith & Hawks, 2006).

Given the strong relationship between intuitive eating and positive physical and mental health indicators, and the suggestion that interventions featuring intuitive eating principles have the potential to reduce obesity and ED risk and prevalence (Schaefer & Magnuson, 2014), it is important to understand how intuitive eating practices are

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conceptualized in culturally diverse populations in which food attitudes may differ from those in which intuitive eating has been quantified to date. Latino and Hispanic American adult populations[a] are disproportionately affected by obesity (42.5% among Latinos compared to 32.6% in non-Hispanic whites) (Ogden, Carroll, Kit, & Flegal, 2014). While attitudes towards obesity and healthy eating tend towards similarity with those seen in other racial and ethnic groups, a sample of highly acculturated Latino adults also report unique perspectives regarding the relationship of food in maintaining psychological and physical health (Corsino et al., 2016). These differences may emerge in childhood. Research with Latina mothers identifies a disconnect among the role of parent behavioral modeling, the messages parents deliver about food, and the use of feeding strategies that promote the development of adaptive eating outcomes (Gomel & Zamora, 2007). The feeding patterns established by Latino families have a lasting impact, with the majority of mothers acknowledging a willingness to meet family food preferences over and above fostering healthy food patterns (Sussner, Lindsay, Greaney, & Peterson, 2008). Latino mothers are also less likely than mothers from other racial and ethnic groups to limit consumption of certain foods or to institute rules regarding food (Kaiser, Melgar-Quiñonez, Lamp, Johns, & Harwood, 2001), instead promoting indulgent parenting styles and food practices (Olvera & Power, 2010). These parenting styles are associated with higher child weight status (Hughes, Power, Fisher, Mueller, & Nicklas, 2005).

In late adolescence and emerging adulthood, rates of disordered eating are thought to be equivalent or higher in Hispanic American female populations than non-Hispanic American White populations (Austin et al., 2011; Croll, Neumark-Sztainer, Story, & Ireland, 2002), with Hispanic American samples reporting higher shape, eating, and weight concerns than other racial and ethnic groups (Franko et al., 2012). Anorexia nervosa is thought to be less prevalent in Hispanic American and Latino populations than non-Hispanic American White populations, with Bulimia nervosa and Binge Eating Disorder (BED) occurring with equal or greater frequency in Hispanic Americans than in other ethnic groups (Perez, Ohrt, & Hoek, 2016). Prior research has highlighted unique psychosocial risk factors for the development of disordered eating and ED tendencies in the Hispanic American population (Franko et al., 2012). Critically, the pathway towards the development of BED is thought to differ for Hispanic American and other racial and ethnic groups. Dieting typically precedes binge eating for non-Hispanic American White and Black patients, whereas binge eating is often found to precede dieting for Hispanic Americans (Lydecker & Grilo, 2016). Greater binge eating tendencies, along with higher levels of body dissatisfaction and thin-ideal internalization are found in Hispanic American individuals who have spent the majority of their lifetime in the United States compared to Hispanics who have recently emigrated (Doris et al., 2015). Thus, it is important to consider not only the ethnic and cultural context in which an individual is situated, but also his or her acculturation status.

While many measures have been developed and validated to best quantify eating and mood disorders in Hispanic American populations (Perez & Warren, 2013; Wiebe, Sauceda, & Lara, 2013), to date, no measure of adaptive eating behaviors has been validated in this minority group. According to Perez and Warren (Perez & Warren, 2013), it is imperative that researchers examine the cross-cultural equivalence of psychometric assessments used to evaluate eating behavior in Hispanic Americans. Given the strong association between intuitive eating and other indices of psychological and physical well-being, as well as the high rates of eating pathology and obesity seen in the Hispanic American population, accurately measuring intuitive eating in Hispanic Americans is critical in assessing long-term success of symptom change in weight loss interventions and identifying factors to protect against the development of disordered eating tendencies in this group. Intuitive eating has been highlighted as a potential disordered eating prevention and intervention mechanism, and pilot data supports the use of intuitive eating training to improve ED treatment outcomes (Richards, Crowton, Berrett, Smith, & Passmore, 2017). We must understand how Hispanic-American identifying individuals conceptualize, understand, and implement intuitive eating practices to best meet the needs of this fast-growing ethnic minority group when designing forthcoming obesity and ED prevention and intervention programs. First, we must determine if the existing, validated measures to quantify intuitive eating tendencies are valid and reliable in this sample.

The original Intuitive Eating Scale (IES) (Tylka, 2006) was developed to quantitatively capture three components of the construct of intuitive eating: (1) unconditional permission to eat (i.e. eating both when hungry and what food is desired), (2) reliance on hunger and satiety cues (i.e. trusting internal, physiological signals to guide eating behavior), and (3) eating for physical reasons (i.e. only using food to meet a physical need, rather than an emotional one). Tylka and Kroon van Diest (Tylka & Van Diest, 2013) revised the initial measure to include a fourth dimension of intuitive eating: body-food choice congruence. This dimension aligns with the idea of integrating *gentle nutrition* practices into one's everyday food choices (Tribole & Resch, 2003) by flexibly considering how to simultaneously honor one's preferences and physical needs.

The IES-2 total scores negatively relate to eating disorder (ED) symptomology, body shame, interoceptive awareness deficits, thin-ideal internalization, negative affect, body surveillance, and BMI, and positively relate to body appreciation, self-esteem, and positive affect (Tylka & Van Diest, 2013). The revised measure and its subscales were invariant across male and female predominantly White, U.S. college-aged samples, meaning both gender groups responded to the instrument items in similar ways (Vandenberg & Lance, 2000). The factor structure of this measure has been found to vary in German (Van Dyck et al., 2016), French (Camilleri et al., 2015), and French-Canadian (Carbonneau et al., 2016) adult samples. The established differences in cultural attitudes towards weight and food support the need to examine the factor structure of the IES-2 in a culturally diverse, Hispanic-American sample as well. Given the established correlates to both intuitive eating in other samples, and the behaviors expected to compound obesity, ED risk, and ED symptomology, the current study had two main goals. The first aim was to validate the factor structure of the IES-2 in a sample of male and female Hispanic American college students born and living in the United States. We predicted that the published factor structure of the IES-2 (Tylka & Van Diest, 2013) would not be observed in the Hispanic American sample, given the differences that have been observed in feeding and eating practices. Second, we assessed the measure's external validation by then examining the relationships between intuitive eating and disordered eating, fruit and vegetable consumption, body shape satisfaction, and BMI using the newly validated intuitive eating measure. We also examined gender differences in intuitive eating practices. Based on prior findings (Avalos & Tylka, 2006; Smith & Hawks, 2006), we predicted a significant negative relationship between intuitive and disordered eating, and a positive significant relationship between intuitive eating and both fruit and vegetable consumption and body shape satisfaction. Finally, we predicted group-level differences across the BMI and gender categories in our sample. Specifically, we anticipated that males and those with a normal BMI would report the highest levels of intuitive eating.

2. Method

The data are a part of a larger unpublished, on-going cross-sectional study examining correlates to health behaviors and attitudes in university students. After learning about the study requirements and

[a] While there has been debate regarding the terms Hispanic and Latino, in the geographic region where the study took place the majority of residents—including survey participants—generally self- identify as Hispanic, thus we use this term in reference to our sample and Latino/Latina when that is how the sample is referred to in other studies (Stephens, Fernández, & Richman, 2012).