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German version of the intuitive eating scale: Psychometric evaluation and application to an eating disordered population

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ABSTRACT

Intuitive eating has been described to represent an adaptive eating behaviour that is characterised by eating in response to physiological hunger and satiety cues, rather than situational and emotional stimuli. The Intuitive Eating Scale-2 (IES-2) has been developed to measure such attitudes and behaviours on four subscales: unconditional permission to eat (UPE), eating for physical rather than emotional reasons (EPR), reliance on internal hunger and satiety cues (RHSC), and body-food choice congruence (B-FCC). The present study aimed at validating the psychometric properties of the German translation of the IES-2 in a large German-speaking sample. A second objective was to assess levels of intuitive eating in participants with an eating disorder diagnosis (anorexia nervosa, bulimia nervosa, or binge eating disorder). The proposed factor structure of the IES-2 could be confirmed for the German translation of the questionnaire. The total score and most subscale scores were negatively related to eating disorder symptomatology, problems in appetite and emotional awareness, body dissatisfaction, and self-objectification. Women with eating disorders had significantly lower values on all IES-2 subscale scores and the total score than women without an eating disorder diagnosis. Women with a binge eating disorder (BED) diagnosis had higher scores on the UPE subscale compared to participants with anorexia nervosa (AN) or bulimia nervosa (BN), and those diagnosed with AN had higher scores on the EPR subscale than individuals with BN or BED. We conclude that the German IES-2 constitutes a useful self-report instrument for the assessment of intuitive eating in German-speaking samples. Further studies are warranted to evaluate psychometric properties of the IES-2 in different samples, and to investigate its application in a clinical setting.

1. Introduction

Research on eating behaviours has traditionally focused on understanding maladaptive eating behaviours, such as dietary restriction and binge eating (e.g., Fairburn et al., 1998; Polivy & Herman, 2002; Stice, 2001, 2002; Vanderlinden et al., 2004), while largely neglecting people's strengths and their areas of resilience (Avalos & Tylka, 2006). Some studies have addressed positive eating behaviours as part of the eating disorders continuum (Mintz & Betz, 1988; Tylka & Subich, 2004); however, they tend to conceptualise these behaviours as the mere absence of eating disorder symptoms (cf., Tylka, 2006). It has been argued that adaptive eating represents more than just low levels of disordered eating behaviours, demonstrating that it predicted psychological well-being beyond the variance accounted for by eating disorder symptomatology (Tylka & Wilcox, 2006). The identification of such unique components has important implications for interventions, as they may foster and maintain healthy eating behaviours alongside preventing and treating maladaptive eating (Tylka & Wilcox, 2006; Tylka, 2006).

One adaptive form of eating that has recently attracted attention is the concept of "intuitive eating", defined as a strong awareness of, and eating in response to physiological hunger and satiety cues, combined with a low preoccupation with food (Tribole & Resch, 1995; Tylka, 2006). Individuals who eat intuitively neither eat for

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emotional or external reasons, nor do they rely on diet plans that instruct them what, when and how much to eat. They are attentive to how their body responds to certain foods and they make food choices that promote their health and body functioning, while at the same time tasting good (Tylka & Kroon Van Diest, 2013). Cross-sectional studies have found intuitive eating to be associated with lower body mass index (BMI; Denny, Loth, Eisenberg, & Neumark-Sztainer, 2013; Gast, Campbell Nielson, Hunt, & Leiker, 2015; Herbert, Blechert, Hautzinger, Matthias, & Herbert, 2013; Tylka & Kroon Van Diest, 2013; Tylka & Wilcox, 2006), lower triglyceride levels and cardiovascular risk (Hawks, Madanat, Hawks, & Harris, 2005), reduced eating disorder symptomatology (Denny et al., 2013; Tylka & Kroon Van Diest, 2013; Tylka, 2006), and increased self-esteem and reduced negative affect (Tylka & Wilcox, 2006). Furthermore, interventions based on intuitive eating principles have been shown to have a positive impact on psychological health outcomes and eating behaviours, such as body image, self-esteem, interoceptive awareness, and anti-dieting attitudes, while decreasing dietary restraint, drive for thinness, depressive symptoms, and disinhibited eating (Bacon, Stern, Van Loan, & Keim, 2005; Cole & Horacek, 2010; Hawks, Madanat, Smith, & De La Cruz, 2008). At a metabolic level, there is evidence that intuitive eating interventions decrease blood lipids, and systolic blood pressure (Bacon et al., 2002).

Intuitive eating is typically assessed using self-report questionnaires. The first instrument measuring intuitive eating has been developed by Hawks, Merrill, and Madanat (2004) and consists of 27 items clustered into four dimensions: intrinsic eating, extrinsic eating, anti-dieting, and self-care. Two years later, Tylka published the initial "Intuitive Eating Scale" (IES-1; Tylka, 2006), which was developed based on the ten principles of intuitive eating by Tribole and Resch (1995). These principles were combined into three separate, but interrelated factors (c.f., Tylka, 2006): (a) unconditional permission to eat (UPE; i.e., readiness to eat in response to internal physiological hunger signals and what food is desired at the moment), (b) eating for physical rather than emotional reasons (EPR; i.e., using food to satisfy physiological hunger drives rather than as a coping mechanism for emotional distress), and (c) reliance on internal hunger and satiety cues to determine when and how much to eat (RHSC; i.e., awareness and use of physiological hunger and satiety cues to guide one's food intake).

Although the IES-1 demonstrated good psychometric properties in a sample of college women (Tylka, 2006), a revised version was developed (IES-2; Tylka & Kroon Van Diest, 2013) in order to address some limitations of the IES-1. The IES-2 comprises more positively scored items to assess the presence, rather than the absence of intuitive eating attitudes. In addition, a fourth dimension called "body-food choice congruence" (B-FCC) was added, measuring the inclination to make food choices according to one's body's needs. The B-FCC subscale was developed according to the component of "gentle nutrition" as articulated by Tribole and Resch (2003), referring to the tendency to choose foods that honour health and body functioning, while at the same time eating palatable foods (Tylka & Kroon Van Diest, 2013). Similar to its precursor, the IES-2 yields good psychometric properties and construct validity (Tylka & Kroon Van Diest, 2013). Exploratory and second-order confirmatory factor analyses confirmed its four-factor structure in both female and male college students. IES-2 scores showed good to excellent internal consistency reliabilities and proved to be stable over a 3-week period. Several studies supported the construct validity of the IES-2 in both men and women, showing that overall intuitive eating and most subscale scores were linked with other eating, body-related, and well-being measures (Camilleri et al., 2015; Tylka, Calogero, & Daníelsdóttir, 2015; Tylka & Kroon Van Diest, 2013). The IES-1 and the IES-2 total and subscale scores were highly correlated, indicating a considerable construct overlap (Tylka & Kroon Van Diest, 2013). Furthermore, the IES-2 has been shown to be sensitive to the detection of treatment-related changes (Schaefer, 2015).

Although these results are very promising, studies included primarily small female student samples, raising questions concerning the generalizability to other populations. Only few studies have investigated intuitive eating principles in other samples than North American college students (e.g., Camilleri et al., 2015; Madden, Leong, Gray, & Horwath, 2012). It seems mandatory, therefore, to further investigate intuitive eating principles and their associations with eating- and body-related constructs in different cultures, in the general public, and in clinical samples.

To our knowledge, there is no measure to assess intuitive eating in German-speaking samples. European countries share a number of important sociocultural factors related to eating and weight with the USA; nevertheless, important differences exist between the US and Europe concerning languages, traditions, and eating patterns (Lõpez-Guimerà et al., 2013). Hence, psychometric properties and norms reported for North American college students do not necessarily apply to European populations. Indeed, using a French adaptation of the IES-2, Camilleri et al. (2015) were unable to replicate the four-factor structure reported for the original scale and did not maintain the newly developed B-FCC subscale. Therefore, it is of upmost importance to adapt the IES-2 to the German context and investigate its psychometric properties before using it in a different cultural context.

Furthermore, no studies have yet measured levels of intuitive eating in individuals with an eating disorder diagnosis. The fundamental assumption behind intuitive eating is that, if listened to, the body "tells us" when, what and how much to eat to maintain both nutritional health and an appropriate weight (Gast & Hawks, 1998). Intuitive eaters utilise this internal bodily information to guide food choices, rather than following external rules, such as restrictive food intake to adhere to a culturally imposed thin-ideal stereotype (Augustus-Horvath & Tylka, 2011; Avalos & Tylka, 2006). Individuals with eating disorders, on the contrary, often rely on diet plans or emotional cues to guide their eating behaviour. Accordingly, there is evidence suggesting the prominence of disturbed perception of internal bodily signals in individuals with eating disorders, both using self-report questionnaires (Fassino, Pierò, Gramaglia, & Abbate-Daga, 2004; Garner, Olmsted, & Polivy, 1983), and objective measures of the perception and processing of bodily signals (Klabunde, Acheson, Boutelle, Matthews, & Kaye, 2013; Pollatos et al., 2008). Hence, lower intuitive eating scores are expected in individuals diagnosed with an eating disorder compared to healthy controls.

1.1. The present study

The primary aim of the present study was to validate a German version of the IES-2 in a large sample including both men and women. This included the investigation of its factor structure, internal consistencies, and construct validity. We hypothesized that the German IES-2 would adhere to the four-factor structure observed for the original scale. To increase comparability with the original English version, convergent validity was assessed via correlations with similar constructs as those used in previous studies (Avalos & Tylka, 2006; Tylka & Hill, 2004; Tylka & Kroon Van Diest, 2013). Hence, the German IES-2 total and subscale scores were hypothesized to be inversely related to eating disorder symptomatology, body dissatisfaction, poor awareness of internal bodily sensations, self-objectification, anxiety, and BMI. Each of these relationships has been demonstrated using the English version of the IES-2, wherefore they were expected to hold for the German