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Empirical research

Assessment of the body Image-Acceptance and Action Questionnaire in a female residential eating disorder treatment facility

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ABSTRACT

Objective: The purpose of this study was to examine the psychometric properties of the Body Image-Acceptance and Action Questionnaire in a severe eating disorder population, as previous validation has occurred only with nonclinical samples.

Method: Data on body image psychological flexibility, general psychological flexibility, eating disorder severity, and other related constructs were gathered from 72 adolescent and 60 adult female, residential patients diagnosed with an eating disorder. Psychometrics were examined through the use of exploratory and confirmatory factor analyses, Cronbach's alpha, correlations, and hierarchical multiple regressions to assess model fit, reliability, and validity.

Results: The BI-AAQ demonstrated excellent convergent, discriminant, and incremental validity as well as excellent internal reliability, however, factor analyses resulted in overall poor model fit. Removal of item 6 from the BI-AAQ resulted in improved psychometric properties in all regards, yet still demonstrated overall poor model fit.

Discussion: This study suggests that the BI-AAQ is psychometrically sound in many areas and provides some clinical utility; however, it may be somewhat problematic when used in severe eating disorder populations. When using the measure in clinical settings, removal of item 6 is recommend. Recommendations for future measurement and utilization of body image flexibility are discussed.

1. Introduction

Eating disorders are a severe mental health condition that tend to be highly comorbid with other conditions (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011), follow a persistent course (Strober, Freeman, & Morrell, 1997), are difficult to treat (Fairburn et al., 1995; McIntosh et al., 2005), and are associated with high rates of mortality (Arcelus, Mitchell, Wales, & Nielsen, 2011) and suicide (Pompili, Mancinelli, Girardi, Ruberto, & Tatarelli, 2004). Body image is the psychological experience of one's physical appearance, comprising cognitive, affective, and behavioral dimensions (Cash, 2011). Body image disturbance is a diagnostic feature of both anorexia nervosa and bulimia nervosa (American Psychiatric Association, 2013) and comprises at least two main dimensions: perceptual distortions in body size and body dissatisfaction. Research has shown that body dissatisfaction in particular is a robust predictor of disordered eating (Brannan & Petrie, 2008; Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Johnson & Wardle, 2005; Stice & Shaw, 2002; Stice, 2002). Despite the importance of body image to disordered eating, however, nearly half of women in the United States experience negative evaluations related to their body size and shape (Cash & Henry, 1995), and up to 80% of adolescent girls are dissatisfied with their weight (Chamay-Weber, Narring, & Michaud, 2005); nevertheless, eating disorders remain relatively rare (Qian et al., 2013). This suggests that additional factors may play a role in the relationship between body image dissatisfaction and eating disorders.

According to Cash (2011), the cognitive-behavioral model of body image identifies three coping strategies in which individuals who experience distressing body-related cognitions and emotions commonly engage. These include: (1) *experiential avoidance*, or attempts to avoid distressing body image cognitions, emotions, and situations; (2) *appearance fixing*, or efforts aimed at correcting or concealing one's perceived physical flaws; and (3) *positive rational acceptance*, or behaviors such as self-care and positive self-talk that focus on the

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acceptance of one's experiences. Data from Cash, Santos, and Williams (2005) revealed that those who engaged in more body image experiential avoidance also experienced greater body image dissatisfaction and dysphoria and lower body image quality of life. Indeed, the attempt to escape, avoid, or otherwise change the frequency or content of unpleasant thoughts, emotions, or sensations, when such attempts result in additional problems for the individual, has been linked to a number of psychological disorders and pathological behaviors (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Therefore, rather than attempt to change the content of distressing body image related cognitions and emotions themselves, an alternative approach is to focus on the *relationship* with these experiences. *Body image flexibility* is the ability to openly experience body image dissatisfaction and related experiences in a way that promotes adaptive life functioning and values-consistent behavior (Sandoz, Wilson, Merwin, & Kellum, 2013).

Body image flexibility has been assessed using the Body Image Acceptance and Action Questionnaire (BI-AAQ; Sandoz et al., 2013). The BI-AAQ is a domain-specific measure of psychological flexibility, based on the more general measure of psychological flexibility, the Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011). The BI-AAQ consists of 12 items measured on a 7-point Likert scale. Items assess the degree to which negative thoughts or feelings about the body are avoided and interfere with living in a manner consistent with one's chosen values. The measure includes statements such as: “Worrying about my weight makes it difficult for me to live a life that I value,” “I shut down when I feel bad about my body shape or weight,” and “Feeling fat causes problems in my life.” It is worth noting that all the items of the BI-AAQ are the negatively worded, and items are reverse scored to produce a body image flexibility score. Because of this, the construct validity of the BI-AAQ generally, and as a measure of body image flexibility as opposed to body image inflexibility, has been criticized (Webb, Wood-Barcalow, & Tylka, 2015).

The BI-AAQ was originally developed and validated using three nonclinical samples of undergraduate psychology students (Sandoz et al., 2013). Using a sample of 182 participants, the final 12 items loaded on a single factor with loadings above .60. The BI-AAQ demonstrated excellent internal consistency (α=.92), good convergent validity, and incremental validity in the prediction of disordered eating. A second study examined test administrations over a two-week period, resulting in good test-retest reliability (N =234, r =.80). At each administration, internal consistency was excellent (αs=.92 and .93, respectively). However, during the second administration, item 6 (“If I start to feel fat, I try to think of something else”) had an item-total correlation of .39, compared to correlations of .62 or above for the other items. Finally, a third study was conducted in order to replicate the results of study one using a sample of 288 participants. Internal consistency was excellent (α=.93), and findings related to factor structure and concurrent and incremental validity were replicated. In addition, the BI-AAQ was able to discriminate those participants who were classified as at-risk for eating disorders.

Further validation of the BI-AAQ was provided by Timko, Juarascio, Martin, Faherty, and Kalodner (2014) in three consecutive studies with nonclinical female samples. In studies 1 and 2 (N =109 and N =272, respectively), women who identified as dieting to lose weight had significantly lower body image flexibility and higher levels of body dissatisfaction, drive for thinness, internalization of the thin ideal, and bulimia symptoms than those who were either dieting to maintain weight or not dieting. The BI-AAQ partially mediated the relationship between body dissatisfaction and disordered eating in both studies. Internal consistency in the full sample was excellent (α=.91), and the BI-AAQ was positively correlated with the AAQ-II (r =.55; in this study the BI-AAQ was not reverse scored, resulting in a measure of body image experiential avoidance). Incremental validity was demonstrated in all three studies, as the BI-AAQ accounted for variability above and beyond body dissatisfaction and general psychological flexibility after controlling for BMI (studies 1 and 2) and above and beyond body dissatisfaction, BMI, and the Body Image Avoidance Questionnaire (BIAQ; Rosen, Srebnik, Saltzberg, & Wendt, 1991) (study 3; N =163) in the prediction of bulimic symptoms and drive for thinness. Also in a nonclinical female sample, the BI-AAQ fully mediated the relationship between body image evaluation and experientially avoidant body image coping strategies.(Mancuso, 2016).

The BI-AAQ was translated and adapted into Portuguese by Ferreira, Pinto-Gouveia, and Duarte (2011), who validated their version on a Portuguese community sample of 679 males and females. The single factor structure resulted in an overall good fit with the data. The Portuguese BI-AAQ demonstrated convergent and divergent validity and excellent internal consistency (α=.95). Test-retest reliability over a 3- to 4-week period was excellent (N =62, r =.82). Using a clinical sample of 46 patients recruited from a hospital and private clinics in Portugal, the BI-AAQ successfully discriminated individuals with diagnosed eating disorders from a subsample of 51 selected from the original sample. Further psychometrics in the clinical sample were not reported. Combining the clinical sample with the full nonclinical sample (N =725), BI-AAQ scores predicted drive for thinness after controlling for BMI and body image dissatisfaction. In addition, BI-AAQ was a significant moderator of the relationship between body image dissatisfaction and drive for thinness, with those low in body image flexibility showing a greater drive for thinness when body image dissatisfaction was high than those with medium or high body image flexibility (Ferreira et al., 2011).

The BI-AAQ was also used in a naturalistic study of 88 women in residential eating disorder treatment (Butryn et al., 2013). The authors found that lower scores on the BI-AAQ were significantly related to higher eating disorder symptomatology at pre-treatment, and changes in BI-AAQ scores from pre- to post-treatment were significantly associated with changes in eating disorder symptoms from pre to post. This study provides evidence for the predictive validity of the BI-AAQ in a clinical sample.

Both the original BI-AAQ and the Portuguese version have shown strong internal consistency, test-retest reliability, convergent and discriminant validity, and incremental validity within nonclinical student or community samples. The two studies that used the BI-AAQ in clinical samples (Butryn et al., 2013; Ferreira et al., 2011), while helping to establish its predictive validity, have not reported psychometric data supporting factor structure or reliability and have not provided robust evidence of construct validity. Although disordered eating occurs in subclinical populations and can cause functional impairments for these individuals (Chamay-Weber et al., 2005; Sandoz et al., 2013), it would be useful to further validate the BI-AAQ in a clinical sample. Given the high prevalence of body dissatisfaction in the general female public (Cash & Henry, 1995; Chamay-Weber et al., 2005) and the low prevalence of diagnosed eating disorders (Qian et al., 2013), it is possible that these two populations may differ in theoretically important ways. As previous research has shown, body image psychological flexibility can both mediate (Mancuso, 2016; Timko et al., 2014) and moderate (Ferreira et al., 2011) the relationship between body dissatisfaction and other theoretically important constructs. Hence, it is important to determine whether the BI-AAQ is appropriate for use in clinical studies and, if so, to explore the relationship of body image flexibility to disordered eating in these populations.

The aim of the current study was to examine the BI-AAQ in a clinical sample in an attempt to further and more comprehensively validate the measure and expand its utility. We predicted that the single facture structure of the BI-AAQ would perform well in this population. With regard to construct validity, we predicted that the BI-AAQ would moderately to strongly correlate with measures of psychological flexibility, depression, anxiety, quality of life, and eating disorder risk. Additionally, we predicted that the “act with awareness,” “nonjudgment,” and “nonreact” subscales of the FFMQ mindfulness