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Validation of the Spanish version of the body image acceptance and action questionnaire (BI-AAQ-Spanish): Measurement invariance across cultures

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ABSTRACT

The purpose of this study was to assess the psychometric properties of a Spanish version of the Body Image Acceptance and Action Questionnaire (BI-AAQ) and its recently developed 5-item version, the BI-AAQ-5. The BI-AAQ measures psychological flexibility/inflexibility regarding body image. A sample of Spanish adults (n = 938) completed the BI-AAQ and a battery of measures (including body mass index, psychological flexibility, exposure to and internalization of sociocultural body image expectations, body dissatisfaction, and eating disorder symptoms). Measurement invariance was tested against a U.S. American adult sample (n = 866) that completed the English version of the BI-AAQ. The unidimensional factor structure of the BI-AAQ and BI-AAQ-5 was replicated in both samples using confirmatory factor analysis, with model fit indexes ranging from adequate (e.g., CFI = 0.95) to excellent (e.g., CFI = 0.99). Internal consistency was good for both instruments across samples (α = 0.90 to 0.97). Measurement invariance analyses confirmed full configural and metric invariance and scalar partial invariance. The Spanish BI-AAQ and BI-AAQ-5 showed clear evidence of convergent and incremental construct validity. Both instruments' scores correlated substantively with theoretically related variables. In addition, the results of a conditional process analysis showed that body-image psychological flexibility measured with either instrument moderated the mediated effect of pressure to conform to cultural ideals of body image on disordered eating through internalization of body image ideals and body dissatisfaction. We concluded both instruments are likely suitable for conducting cross-cultural research with Spanish and English-speaking samples.

Body image is a complex construct that comprises the perception of one's physical appearance, body size, weight, shape, and self-evaluations or attitudes toward it (Cash, 2004). Body image is key to the conformation of self-concept and self-esteem, particularly during adolescence and early adulthood (Lowery et al., 2005; Wertheim & Paxton, 2011; Williams & Currie, 2000). A positive body image and an appreciation of one's body and its functionality positively predict life satisfaction and may protect against the development of eating disorders (Alleva & Tylka, 2021; Tylka & Wood-Barcalow, 2015). Conversely, body-image dissatisfaction plays a key role in the emergence and maintenance of eating disorders (Stice & Shaw, 2002).

Although body dissatisfaction is highly prevalent, particularly among female adolescents and young women (Fiske et al., 2014; Wang et al., 2019), the majority of individuals with body-image dissatisfaction do not develop an eating disorder. For instance, whereas prevalence rates for body image dissatisfaction in Spain fluctuate around 32.0% for adult women and 10.2% for adult men (Román et al., 2018), eating disorder prevalence rates among Spanish adults rest below 3.0%, with an upper range of about 5.0% for female adolescents and young women (Peláez-Fernández et al., 2010). Thus, while body dissatisfaction seems key in the development of disordered eating, other factors interact or combine with body dissatisfaction in the etiology of eating disorders.

Among the multiple, complex factors that may contribute to the development of eating disorders, it has been suggested that responding in a psychologically flexible way to body-related cognitions and emotions may minimize, or protect against, the effects of body image dissatisfaction (Koushiou et al., 2021; Mancuso, 2016; Wendell et al., 2012). Psychological flexibility is the core cognitive-behavioral construct addressed by Acceptance and Commitment Therapy (ACT; Hayes et al., 1999; 2012). It refers to the ability to be present and open to

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experiencing the full range of our emotions, physical sensations, and thoughts while engaging in behavior aligned with our personal values, rather than with short-term wants and needs dictated by such private events (e.g., Hayes et al., 2006). Conversely, psychological inflexibility is characterized by a rigid behavioral pattern of cognitive fusion, persistent avoidance, and unbending control of unwanted urges, thoughts, feelings, sensations, and the situations that occasion them (Hayes et al., 2006). Psychological flexibility is associated with well-being and life satisfaction, and psychological inflexibility is related to distress and poor mental health (Gloster et al., 2011; Hernández-López, 2021; Kashdan & Rottenberg, 2010; Levin et al., 2014; Marshall & Brockman, 2016). Applied to body image, psychological flexibility has been defined as, "The capacity to experience the ongoing perceptions, sensations, feelings, thoughts, and beliefs associated with one's body fully and intentionally while pursuing chosen values" (Sandoz et al., 2013, p. 41). Body image flexibility consistently correlates with life satisfaction, well-being, and body appreciation, and body image inflexibility correlates with eating disorder symptoms (Lucena-Santos et al., 2017; Rogers et al., 2018; Timko et al., 2014; Webb, 2015).

According to a recent systematic review (Rogers et al., 2018), the Body Image Acceptance and Action Questionnaire (BI-AAQ; Sandoz et al., 2013) is the most frequently used measure in research that addresses the link between body-image flexibility and mental health and eating disorder outcomes. The BI-AAQ, a 12-item measure, was developed to assess psychological flexibility/inflexibility related to worries about body size and weight (Sandoz et al., 2013). The BI-AAQ has a unidimensional structure and has consistently yielded reliable scores across a relatively wide range of populations. Internal consistency estimates have fluctuated around 0.90 to 0.95 across samples of college students, men, women, and participants clinically diagnosed with an eating disorder (e.g., Lee et al., 2017; Linardon et al., 2019, 2020; Sandoz et al., 2013; Timko et al., 2014). The BI-AAQ has also passed several tests of convergent and incremental construct validity, with BI-AAQ total scores consistently emerging as a unique predictor of general psychological flexibility/inflexibility, body image, and eating disorder symptoms (Linardon et al., 2020; Sandoz et al., 2013; Timko et al., 2014).

The BI-AAQ has become a widely accepted measure, with promise for cross-cultural research. As evidence of its rising acceptance, we note that from 2018 to 2022 Google Scholar attributed to the BI-AAQ an average of over 50 citations per year. The BI-AAQ has been translated and validated into at least three languages: Portuguese, both in Portugal (Ferreira et al., 2011) and Brazil (Lucena-Santos et al., 2017), Greek (Karekla et al., 2020) and Chinese (He et al., 2021). Overall, the unidimensional factor structure of the BI-AAQ has held, not perfectly, but reasonably well across a diversity of samples that include college students (Sandoz et al., 2013), male and female adults (Linardon et al., 2020), heterosexual women and women with other sexual orientations (Soulliard & Vander Wal, 2022), and participants with eating disorders (e.g., Lee et al., 2017; Linardon et al., 2019). The most common findings across studies that examine the psychometric properties of the BI-AAQ are that the one-factor structure is supported by adequate to excellent fit indices (e.g., Ferreira et al., 2011; Sandoz et al., 2013; He et al., 2020), that in many instances eliminating "item 6" substantively improves fit (e.g., Linardon et al., 2019, 2020; Lucena-Santos et al., 2017), and that multi-group analyses often find weak to strong measurement invariance across disparate samples (e.g., Linardon et al., 2019, 2020; Lucena-Santos et al., 2017).

Recently, Basarkod et al. (2018) proposed a shorter, 5-item version of the BI-AAQ. The BI-AAQ-5 was developed through the application of a fully automated robust machine-learning procedure or "genetic algorithm." Genetic algorithms use natural selection principles to solve optimization problems (Whitley & Sutton, 2012). In the present case, the computational framework was used to efficiently derive a short version of the BI-AAQ while maximizing the preservation of the reliability, validity, and variance of a data set obtained with the 12-item BI-AAQ (Basarkod et al., 2018). Subsequently, other investigators have cross-validated the BI-AAQ-5 by showing its item scores fit a unidimensional factor structure and its totaled scores correlate with relevant psychological constructs such as body-image satisfaction and mental-health indicators (He et al., 2021; Linardon et al., 2019, 2020; Soulliard & Vander Wal, 2022). The BI-AAQ-5 appears to display measurement invariance across diverse populations, as suggested by successful tests comparing male vs. female (e.g., Linardon et al., 2020), and clinical vs. non-clinical (e.g., Linardon et al., 2019) samples.

Although non-English versions of the BI-AAQ have been created and validated, a Spanish version of the BI-AAQ has not been psychometrically validated nor published in a peer-reviewed journal. This is a relevant research gap as Spanish is the second most widely spoken language worldwide (Instituto Cervantes, 2022), with an estimated 500 million native speakers across 21 countries and four continents. As noted earlier, body image dissatisfaction is pervasive among Spaniards at levels comparable to those reported for Americans (see Fallon et al., 2014). In addition, as reflected within primary care records from the Spanish National Health System, annual prevalence rates for eating disorders are relatively high in Spain and comparable to those found in other developed countries, including the US; for Spaniards between 15 and 29 years of age, eating-disorder annual prevalence rates hover around 0.6% for men and 5.0% for women (Ministerio de SanidadSubdirección General de Información Sanitaria, 2021; see Hudson et al., 2007). In addition, body-image concerns, binge eating, and obesity rates are already areas of increasingly high concern in several Spanish-speaking Latin American countries (Kolar et al., 2016; Moreno-Domínguez et al., 2019; Ugarte Pérez et al., 2023). Since body image psychological flexibility may play a key role in buffering the impact of unwanted body-related cognitions and emotions, protecting against the development of problematic forms of eating behavior (Koushiou et al., 2021; Mancuso, 2016; Wendell et al., 2012), we found it necessary to avail researchers and clinicians of a body image flexibility measure in Spanish. Accordingly, this study aimed to develop and validate Spanish versions of the BI-AAQ and BI-AAQ-5. To achieve our aim, we tested the measures' one-factor structure, measurement invariance across a Spanish and an American sample, and convergent and incremental construct validity.

1. Methods

1.1. Participants

1.1.1. Spanish sample

Spanish participants were recruited and participated voluntarily without compensation in the Spring of 2021. Using a snowballing strategy, the survey was first distributed to undergraduate students enrolled at the Universidad de Jaén through a link posted through social media. Participants accessed a Google Forms survey, provided informed consent, and proceeded to complete the survey. Following survey completion, participants were asked to kindly repost the announcements on their own social media pages and ask their friends and family to participate. We followed the recommendations described by Goldammer et al. (2020) to detect and assess the impact of careless responses in the data set. Although we identified 14 participants with potentially careless response patterns in at least three of the five measures they completed, their inclusion or exclusion in the analyses had no impact on the results. Throughout this paper, we present the results from all 938 adult respondents who completed the survey. Their average age was $M = 23.65$ ($SD = 5.81$). Most participants self-identified as female ($n = 820$; 87.4%), with considerably fewer males ($n = 112$; 11.9%) and only six (0.63%) non-binary participants. The majority of participants (87.6%) reported a level of education beyond the high school degree. Of these, most were current undergraduate students (60.0%), followed by those with a college degree (16.0%) and those with a professional degree (11.6%). The sample's average body mass index (BMI = kg/m^2) was

within the "healthy" weight range ($M = 23.55$; $SD = 4.59$).

1.1.2. American sample

The American data was obtained from an unpublished master's thesis conducted to evaluate and compare smokers and vapers across a range of variables (Pomichter, 2021). Participants were recruited online using Amazon *MTurk* workers in the Fall of 2018. Given that participation was compensated, the survey included attention and data quality checks necessary to screen out bots, non-English speakers, and careless responders (see Kennedy et al., 2018). Of the 1106 American participants who completed the survey, 240 failed data quality checks and were excluded from further analysis. The remaining 866 American participants had an average age of 36.9 ($SD = 11.0$), participants were equally distributed across male ($n = 435$; 50.2%) and female ($n = 425$; 49.1%) genders, with only six gender non-binary participants (0.7%). Regarding race, most American participants reported being White (68.8%), followed by Black (22.1%), and Asian American (3.9%). Very few participants self-identified as Native American or "other" (<1.8% combined). Regardless of race, nearly one-fourth of the participants self-identified as Hispanic (23.9%). Most participants reported having at least a college degree (76.7%). The average BMI for the American sample was within the overweight range ($M = 26.14$; $SD = 7.41$).

1.1.3. Data collection

The data collection and data management protocols for the two data sets were presented to and approved by the IRBs of the authors' two home institutions. Both data collection protocols consisted of participants voluntarily completing anonymous, unidentifiable online surveys after reading and signing an informed consent form. All data, analysis code, and research materials are available from the corresponding author upon request. This study's design and its analyses were not preregistered.

1.2. Measures

1.2.1. Spanish and American samples

Body image Acceptance and Action Questionnaire (BI-AAQ; Sandoz et al., 2013). The BI-AAQ is a 12-item, unidimensional, self-report measure that assesses psychological inflexibility/flexibility regarding body image. Items are rated on a 7-point Likert scale from 1 (never true) to 7 (always true). To ease interpretation, we reversed-coded and summed the items so that higher scores would indicate higher body-image psychological flexibility (as opposed to inflexibility). The BI-AAQ was adapted from English to Spanish using recommended best practices that included back-translation, reconciliation, and pilot-testing methods (e.g., Cepeda-Benito et al., 2000; Cepeda-Benito & Reig-Ferrer, 2004); Wild et al., 2005). Items were first translated from English into Spanish by a team of bilingual, English/-Spanish speakers from Spain and the US. The Spanish version was then back-translated into English by a masters-level American translator (bilingual in English and Spanish), and two American investigators compared the original and back-translated versions and verified their semantic equivalence. Before collecting data for the current study, the resulting Spanish version was extensively assessed for readability and understanding by seeking feedback from various small samples of Spanish undergraduate students. The Spanish adaptation was used with the Spanish sample and the original English version with the American sample. The BI-AAQ-5 is composed of BI-AAQ items 1, 3, 4, 8 and 10. Both original versions of the BI-AAQ and BI-AAQ-5 yielded high internal consistency (Cronbach $\alpha = 0.93$) and evidenced construct validity (Basarkod et al., 2018; Sandoz et al., 2013). The Spanish translation of the BI-AAQ is presented in the Appendix.

1.2.2. Spanish sample

Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011). The AAQ-II, a 7-item questionnaire, is the most commonly used measure of general psychological inflexibility/flexibility (i.e., willingness to experience unwanted thoughts and emotions, and ability to be in the present moment and behave according to values-directed actions when unwanted cognitions and emotions are present). Items are rated on a 7-point Likert scale from 1 (never true) to 7 (always true). As with the BI-AAQ, we reversed-coded and summed the items so that higher scores indicated higher psychological flexibility. The AAQ-II has shown good psychometric properties in both clinical and non-clinical samples (Bond et al., 2011; Fledderus et al., 2012; Ong et al., 2019), including the validated Spanish version used in the present study, which yielded good internal consistency (Cronbach $\alpha = 0.88$) and construct validity (Ruiz et al., 2013). In the current study, the AAQ-II also yielded high internal consistency (Cronbach $\alpha = 0.94$).

Body Shape Questionnaire (BSQ; Cooper et al., 1987). The BSQ is a 34-item, self-report questionnaire that assesses body image dissatisfaction. Items are answered on a 6-point Likert scale (1 never, 6 always). Higher scores indicate higher body image dissatisfaction. The BSQ has been translated and successfully validated with Spanish samples (e.g., Raich et al., 1996; Warren et al., 2008), showing high internal consistency (Cronbach $\alpha > 0.95$) and ample evidence of construct validity (Raich et al., 1996; Warren et al., 2008). In the current sample, the BSQ also yielded very high internal consistency (Cronbach $\alpha = 0.97$).

Eating Attitudes Test-40 (EAT-40; Garner et al., 1982). The EAT-40 is a 40-item questionnaire that assesses symptoms of eating disorders (anorexia and bulimia nervosa). Each statement is answered on a 6-point Likert scale, but only the three anchors denoting the highest symptom frequency (often = 1, usually = 2, and always = 3) contribute to the total score. The EAT-40 has been validated in Spanish and has consistently yielded high internally consistent scores (Cronbach $\alpha = 0.93$) and evidence of construct validity (e.g., Castro et al., 1991). In the current sample, the EAT-40 also yielded very high internal consistency (Cronbach $\alpha = 0.93$).

Sociocultural Attitudes Towards Appearance Questionnaire- 4 (SATAQ-4; Schaefer et al., 2015). The SATAQ-4 is a 22-item self-report questionnaire with five subscales, three of them measure pressure to accept sociocultural ideals of body appearance from three sources (peers, family, and the media) and two subscales measure internalization of two ideals (muscularity and thinness). Items are rated on a 5-point Likert-type scale (1–5) from "completely disagree" to "completely agree." We used the Spanish version of the SATAQ-4 (Llorente et al., 2015), and summed the totaled scores from the three pressure scales and from the two internalization scales to respectively obtain overall total scores for pressure to conform to (SATAQ-4-PC) and for internalization of (SATAQ-4-Int) sociocultural ideals of body appearance. Llorente et al. (2015) reported excellent internal consistency for the SATAQ-4 subscale scores (Cronbach $\alpha = 0.93$), as well as compelling evidence of construct validity. The present study produced reliable scores for SATAQ-4-PC and SATAQ-4-Int scores (Cronbach $\alpha = 0.89$ for both).

1.3. Data analysis

1.3.1. Multigroup confirmatory factor analyses (MG-CFA)

Initial Confirmatory Factor Analyses (CFA) determined the fit of the one-factor structure in both, the BI-AAQ and BI-AAQ-5 in both Spanish and English. Factor analyses were conducted using the *lavaan* package in *R* version 1.2.1335 and used Maximum Likelihood with robust standard errors (MLR) for estimation to account for non-normality. For all factor analyses, the goodness of fit indices referenced included: root mean square error of approximation (RMSEA), comparative fit index (CFI), and Tucker-Lewis Index (TLI). Model fit was determined by considering commonly recommended cutoffs (e.g., Putnick & Bornstein, 2016): for RMSEA (≤ 0.05 = excellent fit, ≤ 0.08 adequate fit, and >0.10 unacceptable fit), for CFI/TLI (≥ 0.97 excellent fit, ≥ 0.95 adequate fit). Only 14 of 1841 (866 + 975) participants did not complete all items of the BI-AAQ, thus missing data were handled with listwise deletion.

Measurement Invariance. To test for factorial invariance across the Spanish and American samples, we applied a sequence of multi-sample, "stacked" (MG-CFA) that tested for measurement invariance across the two samples progressing from the least restrictive to the most restrictive model (e.g., Bollen, 1989; Byrne et al., 1989). The least restrictive model, configural invariance, restricts items to the same factors (one in the present case) but allows all model parameters to vary freely across groups. Metric invariance constrains factor loadings across groups and scalar invariance constrains both factor loadings and item intercepts. To establish measurement invariance as additional constraints are imposed, we used commonly recommended cutoffs for change in absolute fit (ΔRMSEA $\geq$0.015) and incremental fit (ΔCFI/TLI ≤ -0.01). Evidence of measurement invariance was examined using a backward, sequential method to release one by one the parameter constraints that contributed the most to the lack of invariance until we obtained evidence of partial measurement invariance (Yoon & Kim, 2014).

1.3.2. Construct Validity

Convergent Validity. To establish the convergent validity of the Spanish versions of BI-AAQ and BI-AAQ-5, we examined whether BI-AAQ and BI-AAQ-5 scores correlated in the expected direction with measures related to body image dissatisfaction, eating disorder symptoms, and psychological flexibility. In particular, we expected that body-image psychological flexibility would correlate strongly but negatively with SATAQ-4-PC, SATAQ-4-Int, BSQ, and EAT-40 scores. We also expected that body image psychological flexibility as measured by the BI-AAQ and BI-AAQ-5 would correlate strongly and positively with AAQ-II scores.

Incremental Validity. To examine the incremental validity of the BI-AAQ and BI-AAQ-5 we carried out a conditional process analysis that tested a modified version of the Tripartite influence model of body dissatisfaction and eating disturbance (see Keery et al., 2004). We hypothesized that pressure to conform to cultural standards of idealized physical appearance would contribute to the internalization of the standards, which in turn would contribute to the development of body image dissatisfaction, and that both internalization of the ideal and body image dissatisfaction would contribute to the development of eating disorder symptoms (see Fig. 1). Based on the thesis that body image psychological flexibility protects against the development of eating disorder symptoms (e.g., Koushiou et al., 2021), we postulated BI-AAQ scores as a moderator of the mediation paths from internalization of idealized standards of physical appearance and from body image dissatisfaction to eating disorder symptoms (see Fig. 1). More specifically, we predicted that higher psychological flexibility would lessen the regression weights of SATAQ-4-Int and BSQ scores predicting EAT-40 scores. All analyses were conducted while controlling for gender, age, BMI, and psychological flexibility (AAQ-II; see Fig. 1). These analyses were conducted twice, first with the BI-AAQ and then with the BI-AAQ-5.

Missing data were rare, and all analyses were carried out using listwise deletion. Gender was coded as a dichotomous variable that grouped together female and non-binary participants (nonmale = 0, male = 1). Correlation and conditional process analyses were conducted using SPSS v27 and PROCESS v4.2 (A. F. Hayes, 2022).

2. Results

2.1. Initial confirmatory factor analysis

2.1.1. Spanish sample

The one-factor model for the BI-AAQ produced adequate fits (RMSEA = 0.087; CFI = 0.96, TLI = 0.95), as well as high internal consistency ($\alpha = 0.95$). The fit for the BI-AAQ-5 was adequate (RMSEA = 0.079) to excellent (CFI = 0.99, TLI = 0.98); and the internal consistency of the scores was also high ($\alpha = 0.90$). All standardized factor loadings were significant and exceeded 0.5 in both analyses.

2.1.2. American sample

Fits and internal consistency for the BI-AAQ (RMSEA = 0.046, CFI = 0.99, TLI = 0.99; $\alpha = 0.97$) and BI-AAQ-5 (RMSEA = 0.032, CFI = 0.99, TLI = 0.99; $\alpha = 0.94$) in the American sample were excellent. All standardized factor loadings were significant and exceeded 0.5 in both analyses.

2.1.3. Measurement invariance

Table 1 displays fit indices and changes in fit indices at each level of

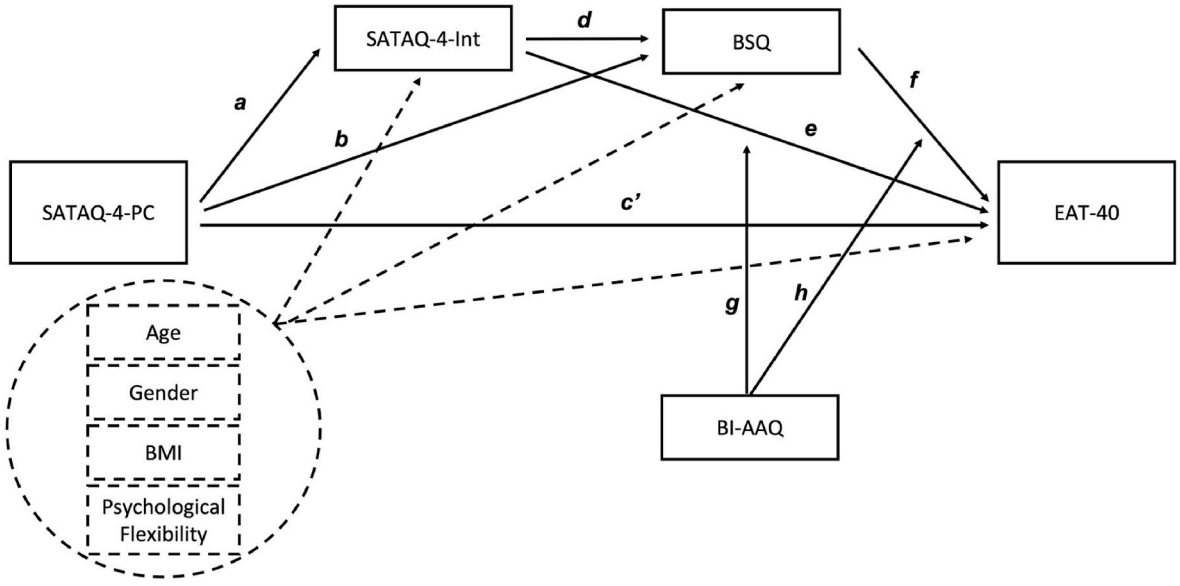

Fig. 1. BI-AAQ Moderated Tripartite Influence Model

Note. SATAQ-4-PC (Antecedent) = Pressure to Conform to Idealized Standards of Physical Appearance; **SATAQ-4-Int** (Mediator 1) = Internalized Standards of Physical Appearance; **BSQ** (Mediator 2) = Body Image Dissatisfaction; **EAT-40** (Outcome) = Eating Disorder Symptoms; **BI-AAQ** (Moderator) = Body image Flexibility (full version); **Age** (Covariate 1); **Gender** (Covariate 2; nonmale = 0, male = 1); **BMI** (Covariate 3) = Body Mass Index; **AAQ-II** (Covariate 4) = Psychological flexibility.

Table 1
Fit indices and changes in fit indices at each level of invariance constraints for both the 12-item and 5-item versions of the BI-AAQ.

BI-AAQ	χ^2	*df*	RMSEA	CFI	TLI	ΔRMSEA	ΔCFI	ΔTLI
Configural Model	417.31	108	0.071	0.98	0.97			
Metric Model	477.98	120	0.070	0.97	0.97	−0.010	0.00	0.00
Scalar Model	1018.36	132	0.104	0.94	0.94	0.034	−0.03	−0.03
Item 8 freed	788.92	131	0.093	0.95	0.95	0.023	−0.02	−0.02
Item 2 freed	626.77	130	0.082	0.96	0.96	0.012	−0.01	−0.01
BI-AAQ-5	χ^2	***df***	**RMSEA**	**CFI**	**TLI**	**ΔRMSEA**	**ΔCFI**	**ΔTLI**
Configural Model	32.91	10	0.061	0.99	0.99			
Metric Model	49.80	15	0.056	0.99	0.99	−0.005	0.00	0.00
Scalar Model	302.10	20	0.136	0.95	0.95	0.080	−0.04	−0.04
Item 8 freed	129.90	19	0.093	0.98	0.98	0.043	−0.01	−0.01
Item 10 freed	122.38	18	0.053	0.99	0.99	−0.003	0	0

Note. BI-AAQ = Full version of Body Image Acceptance and Action Questionnaire; **BI-AAQ-5** = Brief version of BI-AAQ. Change in fit by subtracting Configural from Metric, and Metric from Scalar.

invariance constraints for both the BI-AAQ and BI-AAQ-5. Both analyses showed clear evidence of measurement invariance at the configural and metric but not the scalar level. That is, the change in absolute fit from metric to scalar restrictions surpassed the recommended thresholds for significant decrements in fit (ΔRMSEA ≥0.015; ΔCFI/TLI ≤ −0.01).

There is no consensus regarding the impact of partial invariance and the most effective methods to assess it (Putnick & Bornstein, 2016). We opted to use a backward, sequential method and released one by one the intercept constraints that contributed the most to the observed lack of scalar invariance until we obtained evidence of partial measurement invariance (Yoon & Kim, 2014). To this end, we used the *lavTestScore* function within *lavaan*, which provides absolute Chi-square change and Standardized Expected Parameter Change (SEPC) fit estimates associated with each item's scalar constraint. In addition, for each item, we examined the direction and absolute difference of intercepts between the two groups. Only items 8 and 2 had lower intercepts in the Spanish than the American sample, and these two items also yielded the highest Chi-square, SEPC scores, and absolute item intercept differences.

In the BI-AAQ, we first released the constraints for item 8 ("I will have better control over my life if I can control my negative thoughts about my body"), which contributed most to fit decrement from metric to scalar invariance (intercept difference = 0.767; Chi^2 = 229.4; Spanish SEPC = −0.326, American SEPC = 0.165). Releasing item 8 improved overall fit virtually to adequate levels for CFI (0.949) and TLI (0.945) and considerably for RMSEA (0.093). Freeing the intercept constraint of item 2, "I care too much about my weight and body shape" (intercept difference = 0.373; Chi^2 = 162.2; Spanish SEPC = −0.192, American SEPC = 0.185), improved the fit to near the "adequate" threshold also for RMSEA (0.085) and to the clearly "adequate" threshold for CFI (0.96) and TLI (0.96). Table 1 shows that freeing the intercepts of items 8 and 2 reached the thresholds to claim evidence of partial invariance (ΔRMSEA = 0.012; ΔCFI/TLI = −0.01). At this point we concluded we had achieved partial invariance at the scalar level and stopped releasing constraints.

In the BI-AAQ-5, freeing item 8 (Chi^2 = 172.2; Spanish SEPC = −0.274, American SEPC = 0.168) drastically improved fit for CFI and TLI (RMSEA = 0.093, CFI = 98, TLI = 0.98). Item 2 was not included in the short version of the BI-AAQ. Table 1 shows that freeing the intercept of item 8 reached the threshold to claim evidence of partial invariance for the incremental fit indices (ΔCFI/TLI = −0.01) but not the absolute fit index (ΔRMSEA = 0.043). Additionally freeing item 10 (Chi^2 = 126.4; Spanish SEPC = 0.163, American SEPC = −0.149) intercepts achieved partial scalar invariance (RMSEA = 0.058, CFI = 0.992, TLI = 0.991; ΔRMSEA = −0.003, ΔCFI/TLI = 0).

To explore the potential impact of partial measurement invariance in research studies that might compare mean score differences between Spanish vs. American samples or groups, we compared Spanish vs. American differences in BI-AAQ total scores calculated with and without the noninvariant items (items 2 and 8) (see recommendations by Cheung & Rensvold, 1998). Because even trivial mean differences may be significant with very large sample sizes, we assumed a medium effect size (d = 0.5) and then carried out the analyses by selecting at random an underpowered (n = 60, β = 0.60), and a sufficiently powered (d = 0.5, n = 120, β = 0.80) sample with equal numbers of Spanish and American participants per subsample.

We repeated these analyses using the BI-AAQ-5 with the exception that we removed item 8 but not item 10 to obtain a fully invariant version of the BI-AAQ-5 (item 2 is not in the BI-AAQ-5). Note also that items 2 and 8 were the only items with lower intercepts in the Spanish than American data, but item 10 had a higher intercept in the Spanish than the American data. In addition, item 10 was invariant in the BI-AAQ, and invariant in the BI-AAQ-5 using the ΔCFI/TLI ≤ −0.01 threshold but not the ΔRMSEA ≥0.015. Finally, removing item 10 would have reduced the likelihood of finding different results between the partially invariant vs. invariant versions of the BI-AAQ-5. Thus, we felt that by not removing item 10 produced a more rigorous test of the potential impact of partial invariance in cross-cultural research using the BI-AAQ-5.

Table 2 presents the results of ANOVAS conducted to test mean, BI-AAQ-12, BI-AAQ-10, BI-AAQ-5, and BI-AAQ-4 total score differences between randomly selected subgroups of Spanish and American participants. The results clearly show that regardless of BI-AAQ version and sample size, there were no significant differences between Spanish and American participants. Thus, partial scalar invariance did not appear to produce spurious effects in the hypothetical, cross-cultural research scenarios we created.

2.2. Construct Validity

2.2.1. Convergent Validity

Table 3 shows the correlation table for all the variables included in the conditional mediation model conducted with the Spanish data set. Providing evidence of convergent validity, total scores for both the BI-AAQ and BI-AAQ-5 correlated strongly and negatively with EAT-40, BSQ, SATAQ-4-PC, and SATAQ-4-Int scores (r = −0.54 to −0.87), and also strongly but positively with AAQ-II scores (r = 0.57 for both BI-AAQ and BI-AAQ-5).

2.2.2. Incremental Validity

The conditional process model is depicted in Fig. 1, and the results are presented in Table 4 (BI-AAQ) and Table 5 (BI-AAQ-5). Tables 4 and 5 present the unstandardized coefficient, associated p-value, and 95% confidence interval (CI) for each covariate, mediated path, and moderated path. After controlling for age, gender, BMI, and AAQ-II scores, the statistically significant, "total" effect of the regression association between SATAQ-4-PC and EAT-40 scores (b = 0.652, p < 0.001) was fully conditionally mediated by SATAQ-4-Int, BSQ, and the interaction of BI-AAQ (or BI-AAQ-5) scores with each of these two variables. That is, the

Table 2
One-Way ANOVAs Comparing Spanish vs American Participants Using Underpowered (N = 60) and Adequately Powered (N = 120), Randomly Selected Sample Sizes.

Underpowered Comparison (Spanish N = 30; American N = 30)						
	Spanish M (SD)	American M (SD)	F (1, 59)	*p*	Eta-squared	Cohen's *d*
BI-AAQ	41.27 (13.80)	41.53 (23.53)	0.003	0.957	0.000	0.014
BI-AAQ-10	36.90 (11.81)	34.70 (19.80)	0.273	0.603	0.005	−0.135
BI-AAQ-5	16.47 (6.15)	17.00 (10.26)	0.060	0.808	0.001	0.063
BI-AAQ-4	14.50 (5.13)	13.57 (8.31)	0.274	0.603	0.005	−0.135
Adequately Powered Comparison (Spanish N = 60; American N = 60)						
	Spanish M (SD)	American M (SD)	F (1, 119)	*p*	Eta-squared	Cohen's *d*
BI-AAQ	44.03 (21.63)	42.37 (21.23)	0.224	0.637	0.002	−0.086
BI-AAQ-10	38.65 (18.20)	36.22 (18.00)	0.542	0.463	0.005	−0.134
BI-AAQ-5	17.65 (9.86)	18.15 (9.44)	0.092	0.763	0.001	0.055
BI-AAQ-4	14.67 (8.10)	14.98 (7.68)	0.048	0.827	0.000	0.040

Note. BI-AAQ = Full version of Body Image Acceptance and Action Questionnaire; **BI-AAQ-10** = BI-AAQ minus items 8 & 2; **BI-AAQ-5** = Brief version of BI-AAQ; **BI-AAQ-4** = BI-AAQ-5 minus item 8.

Table 3
Correlations between conditional mediation model variables.

	1. BI-AAQ	2. BI-AAQ-5	3. Age	4. Gender	5. BMI	6. AAQ-II	7. EAT-40	8. BSQ	9. SATAQ-4-PC	10. SATAQ-4-Int
1		0.975***	0.185***	0.146***	−0.333***	0.572***	−0.663***	−0.876***	−0.591***	−0.541***
2			0.203***	0.145***	−0.340***	0.570***	−0.625***	−0.850***	−0.577***	−0.494***
3				0.143***	0.158***	0.221***	−0.117***	−0.153***	−0.037	−0.110**
4					0.131***	0.110**	−0.100*	−0.211***	−0.157***	−0.014
5						−0.062	0.070*	0.340***	0.394***	0.061
6							−0.432***	−0.505***	−0.332***	−0.669***
7								0.661***	0.349***	0.502***
8									0.612***	0.539***
9										0.337***

Notes. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; **BI-AAQ** & **BI-AAQ-5** = Body image Flexibility (full & short versions); **Gender** (nonmale = 0, male = 1); **BMI** = Body Mass Index; **AAQ-II** = Psychological flexibility; **BSQ** = Body Image Dissatisfaction; **SATAQ-4-PC** = Pressure to Conform to Idealized Standards of Physical Appearance; **SATAQ-4-Int** = Internalized Standards of Physical Appearance.

Table 4
Unstandardized Regression Coefficients (*Coeff*) with Lower Limit (LL) and Upper Limit (UL) 95% Confidence Intervals (CIs): Conditional Mediation Model using the BI-AAQ.

	SATAQ-4-Int				BSQ				EAT-40			
	$R^2 = 0.153$, F (5, 932) = 33.63, $p < 0.001$				$R^2 = 0.617$, F (6, 931) = 358.17, $p < 0.001$				$R^2 = 0.624$, F (10, 927) = 89.16, $p < 0.001$			
	Path	*Coeff*	*p*	*95% CI*	*Path*	*Coeff*	*p*	*95% CI*	*Path*	*Coeff*	*p*	*95% CI*
SATAQ-4-PC	***a***	0.280	<0.001	(0.218, 0.342)	***b***	1.240	<0.001	(1.010, 1.471)	***c'***	−0.095	0.094	(-0.206, 0.016)
Age		−0.089	0.042	(-0.176, −0.003)		−0.399	0.012	(-0.711, −0.088)		0.073	0.194	(-0.037, 0.182)
Gender		1.926	0.015	(0.379, 3.472)		−18.94	<0.001	(-0.23.99, −13.90		1.502	0.284	(-1.250, 4.254)
BMI		−0.137	0.052	(-0.276, 0.001)		1.869	<0.001	(1.375, 2.363)		−0.581	<0.001	(-0.837, −0.325)
AAQ-II		−0.118	<0.001	(-0.169, −0.068)		−0.961	<0.001	(-1.131, −0.792)		−0.088	0.026	(-0.166, −0.011)
SATAQ-4-Int					***d***	1.657	<0.001	(1.428, 1.886)	***e***	0.321	<0.001	(0.192, 0.451)
BSQ									***f***	0.186	<0.001	(0.141, 0.230)
BI-AAQ										−0.146	0.002	(-0.238, −0.053)
Moderator 1									***g***	−0.010	0.005	(-0.017, −0.003)
Moderator 2									***h***	−0.006	<0.001	(-0.008, −0.004)

Note. SATAQ-4-PC = Pressure to Conform to Idealized Standards of Physical Appearance; **Gender** (nonmale = 0, male = 1); **BMI** = Body Mass Index; **AAQ-II** = Psychological flexibility; **SATAQ-4-Int** = Internalized Standards of Physical Appearance**; BSQ** = Body Image Dissatisfaction; **BI-AAQ** = Body image Flexibility (full version); **Moderator 1** = BI-AAQ x SATAQ-4-Int; **Moderator 2** = BI-AAQ x BSQ; Paths ***a*** through ***h*** are depicted in Fig. 1.

direct effect of SATAQ-4-PC scores on EAT-40 scores (path ***c'*** in Fig. 1) became statistically nonsignificant in both conditional process analyses (with BI-AAQ: $b = -0.095$, $p = 0.094$; with BI-AAQ-5: $b = -0.077$, $p = 0.183$; see Table 4 and 5). In addition, the moderated indirect effects through SATAQ-4-Int scores (paths *a, e, & g*), through BSQ scores (paths *b, f, & h*), and sequentially through SATAQ-4-Int scores first and then through BSQ scores (paths *a, d, f, g & h*) were all statistically significant with BI-AAQ (Table 4) and with the BI-AAQ-5 (Table 5) as the moderator. Table 6 presents coefficients with 95% CIs for the effects obtained with the BI-AAQ and the BI-AAQ-5, showing that the results obtained with either measure were virtually identical. Fig. 2 represents the significant moderated effects of the BI-AAQ scores interacting with SATAQ-4-Int and BSQ scores to predict EAT-40 scores. EAT-40 scores are plotted along the vertical axis, with SATAQ-4-Int (Fig. 2A) and BSQ scores (Fig. 2B) plotted at −1, 0, and +1 SD of their respective means along the horizontal axis. The three regression lines correspond to participants scoring at −1, 0, and +1 SD of the BI-AAQ mean. Fig. 2 shows that both, the internalization of the idealized standards of physical appearance (SATAQ-4-Int) and body dissatisfaction (BSQ) were positively associated with eating disorder symptoms (EAT-40 scores). However, Fig. 2 also shows that these associations were considerably less pronounced for participants with higher body image flexibility (a figure representing the BI-AAQ-5 interactions would be identical to Fig. 2).

Table 5
Unstandardized Regression Coefficients (*Coeff*) with Lower Limit (LL) and Upper Limit (UL) 95% Confidence Intervals (CIs): Conditional Mediation Model using the BI-AAQ-5.

	EAT-40			
	$R^2 = 0.611$, F (10, 927) = 85.58, $p < 0.001$			
	Path	*Coeff*	*p*	*95% CI (LL, UL)*
SATAQ-4-PC	***c'***	−0.077	0.183	(-0.191, 0.036)
Age		0.076	0.182	(-0.036, 0.188)
Gender		1.643	0.266	(-1.257, 4.543)
BMI		−0.607	<0.001	(-0.871, −0.346)
AAQ-II		−0.097	0.013	(-0.174, −0.020)
SATAQ-4-Int	***e***	0.333	<0.001	(0.206, 0.461)
BSQ	***f***	0.201	<0.001	(0.157, 0.245)
BI-AAQ-5		−0.246	0.005	(-0.413, −0.074)
Moderator 1	***g***	−0.021	0.005	(-0.036, −0.007)
Moderator 2	***h***	−0.014	<0.001	(-0.017, −0.010)

Note. Regression coefficients for paths leading to **SATAQ-4** and **BSQ** scores are not presented as they are the same as those presented in Table 4**. SATAQ-4-PC** = Pressure to Conform to Idealized Standards of Physical Appearance; **Gender** (nonmale = 0, male = 1); **BMI** = Body Mass Index; **AAQ-II** = Psychological flexibility; **SATAQ-4-Int** = Internalized Standards of Physical Appearance**; BSQ** = Body Image Dissatisfaction; **BI-AAQ-5** = Body image Flexibility (brief version); **Moderator 1** = BI-AAQ-5 x SATAQ-4-Int; **Moderator 2** = BI-AAQ-5 x BSQ; Paths ***a*** through ***h*** are depicted in Fig. 1.

Table 6
Conditional Effects of SATAQ-4-Int and BSQ scores Predicting EAT-40 scores at −1, 0, and +1 Standard Deviations (SD) of the Mean for BI-AAQ-12 and BI-AAQ-5 scores.

SATAQ-4-Int	Effect	95% CI	SATAQ-4-Int	Effect	95% CI
−1 SD BI-AAQ	0.518[a]	(0.280, 0.755)	−1 SD BI-AAQ-5	0.520[a]	(0.291, 0.749)
0 SD BI-AAQ	0.321[a, b]	(0.192, 0.451)	0 SD BI-AAQ-5	0.333[a, b]	(0.206, 0.461)
+1 SD BI-AAQ	0.125[b]	(0.002, 0.248)	+1 SD BI-AAQ-5	0.146[b]	(0.030, 0.263)
BSQ	**Effect**	**95% CI**	**BSQ**	**Effect**	**95% CI**
−1 SD BI-AAQ	0.304[a]	(0.235, 0.373)	−1 SD BI-AAQ-5	0.319[a]	(0.253, 0.385)
0 SD BI-AAQ	0.186[b]	(0.141, 0.230)	0 SD BI-AAQ-5	0.201[b]	(0.157, 0.245)
+1 SD BI-AAQ	0.067[c]	(0.027, 0.108)	+1 SD BI-AAQ-5	0.083[c]	(0.044, 0.121)

Note. SATAQ-4-Int = Internalized Standards of Physical Appearance**; BSQ** = Body Image Dissatisfaction; **BI-AAQ & BI-AAQ-5** = Body image Flexibility (full version & brief version); All 95% **CI** were statistically significant, as none straddled over zero; Within each focal predictor (i.e., SATAQ-4-Int & BSQ), and moderator (i.e., BI-AAQ & BI-AAQ-5), effects with different superscripts are significantly different with each other (i.e., their 95% CIs do not overlap).

3. Discussion

Our main aim was to test the psychometric properties of the Spanish version of the BI-AAQ, an instrument that has proved useful for the assessment of body image flexibility across different cultures and languages but lacked a validated version in Spanish, the second spoken language worldwide. To accomplish our goal, we tested the unidimensional factor structure of the Spanish version of the BI-AAQ using CFA and then tested its measurement invariance versus a data set collected in the US using the original, English version. Scores obtained with the BI-AAQ had high internal consistency and all the CFA fit indexes supported the unidimensional structure of both the Spanish and English versions of the BI-AAQ. Moreover, measurement invariance analyses confirmed the presence of measurement invariance at the configural (number of factors) and metric (item loadings) levels. Although full-scalar invariance (at the item intercept level) was not achieved, releasing the constraints of 2 of the 12 items (items 8 and 2) was sufficient to obtain evidence of partial invariance in the full and short versions.

Demonstrating measurement invariance across multiple groups is important when a researcher compares statistics related to these groups. For example, when invariance is established for both the factor loading and intercept levels, the scores from different groups share the same measurement scale (i.e., factor loadings) and the same starting points (i.e., intercepts), making it possible to compare factor means across these groups (see Chen, 2008). However, requiring full measurement invariance in comparative research may keep significant, informative research from ever being published (Putnick & Bornstain, 2015). Researchers have proposed that a factor can be considered partially invariant when most of the items on the factor are invariant (Vandenberg & Lance, 2000), and that partial scalar invariance has a low likelihood of producing biased results when fewer than 20% of the items lack invariance (Schmitt & Kuljanin, 2008). In our analyses of the BI-AAQ, most of the items were invariant (10 of 12) and only 17% were noninvariant (2 of 12). In the BI-AAQ-5, most of the items were invariant (3 of 5), but a large proportion were noninvariant (40%). As noted earlier, the outlook of the BI-AAQ-5 would improve if we declared item 10 invariant on the basis that it met the $\Delta CFI/TLI \leq -0.01$ threshold (4 of 5 items invariant, 20% noninvariant). Thus, on the whole, our results support the use of the BI-AAQ and BI-AAQ-5 in cross-cultural research on body image flexibility.

The two items that lacked invariance in the BI-AAQ were the only two items in which Spanish participants produced lower body image flexibility intercepts than American participants. The most different was Item 8, "I will have better control over my life if I can control my negative thoughts about my body," followed by Item 2, "I care too much about my weight and body shape." These are the only items of the BI-AAQ that open with a qualifying, comparative assertion (Item 8: "I will have 'better' control …," Item 2 "I care 'too much' …"). In addition, both items are unusually complex or double-barreled when translated into Spanish. Thus, although we followed recommended guidelines and successful past practices to adapt the BI-AAQ to Spanish, the comparative nature and complexity of the items may render them less semantically equivalent than the rest, and thus "behave" differently in Spanish and English.

To assess the impact of partial scalar invariance, we compared Spanish vs American BI-AAQ and BI-AAQ-5 total scores calculated with and without noninvariant items (see also Chen, 2008; Cheung & Rensvold, 1998). To this end, we randomly selected underpowered and adequately powered samples and tested for Spanish vs. American mean differences in body image flexibility. We found that both the BI-AAQ and BI-AAQ-5, with and without the problematic noninvariant items, yielded virtually identical results, which suggests that partial invariance did not impact the results. Overall, the results bode well for future investigations that may compare or contrast BI-AAQ (or BI-AAQ-5) scores between Spanish and American participants.

In addition to finding support for the unidimensional structure of the BI-AAQ and BI-AAQ-5, we found ample evidence of convergent construct validity for both instruments. On the one hand, BI-AAQ scores correlated substantively with theoretically relevant variables, including BMI, psychological flexibility (AAQ-II), pressure to conform to cultural standards of physical appearance (SATAQ-4-PC), internalization of physical appearance standards (SATAQ-4-Int), body image dissatisfaction (BSQ), and eating disorder symptoms (EAT-40). Moreover, the conditional process analyses provided strong evidence of incremental validity, as both versions of the BI-AAQ predicted eating disorder symptoms above and beyond gender, age, BMI, AAQ-II, SATAQ-4-PC, SATAQ-4-Int, and BSQ scores. Most importantly, the BI-AAQ interacted with SATAQ-4-Int and BSQ scores to predict EAT-40 scores. The interaction was congruent with our prediction that high body image flexibility would reduce hypothesized relationships of internalization of societal ideals of body image and body image dissatisfaction with eating

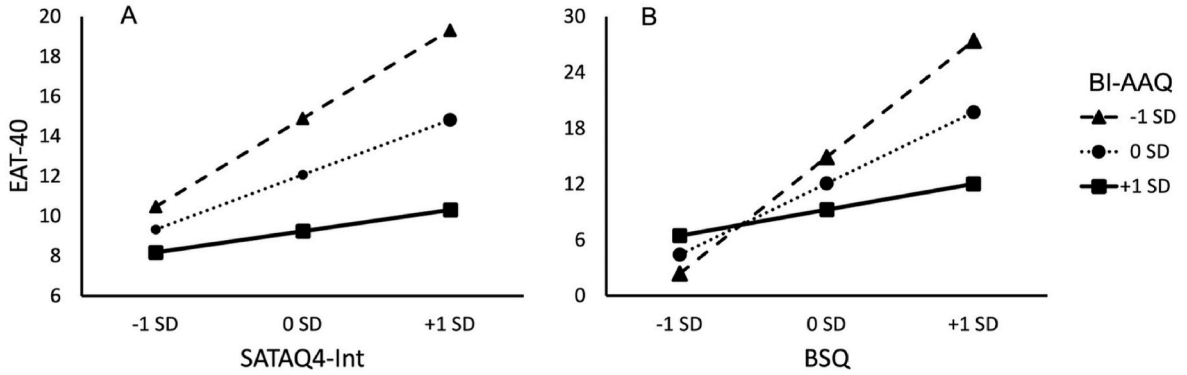

Fig. 2. Visualization of Body-Image Flexibility (BI-AAQ) Moderating the Mediation Effects of the Internalization of Idealized Standards of Female Appearance (SATAQ-4-Int) and Body-Image Dissatisfaction (BSQ).
Note. The analyses and figures using the BI-AAQ-5 are virtually identical to those depicted here for the BI-AAQ.

disorder symptoms (see also Keery et al., 2004; Wendell et al., 2012). Since both the full BI-AAQ and the BI-AAQ-5 performed similarly, the BI-AAQ-5 stands as a suitable alternative to the full BI-AAQ (Basarkod et al., 2018).

Our results replicate and extend previous findings about the hypothetical roles of body-image flexibility and other risk factors for disordered eating (Ferreira et al., 2011; Sandoz et al., 2013; Timko et al., 2014). We conducted analyses that considered the role of psychological flexibility in the context of the Tripartite influence model of body dissatisfaction (Keery et al., 2004), a widely researched cognitive-behavioral model of disordered eating. Cognitive-behavioral models of body image and eating disorders typically hypothesize that negative thoughts, feelings, and emotions about one's body result from comparison with societal standards of beauty, attractiveness, and success pushed by different sources of influence, such as family, peers, and the media, and assume a key role for these private events in the etiology of eating disorders (e.g., Stice & Whitenton, 2002). We replicated the finding that body image flexibility interacts with body image dissatisfaction to predict disordered eating (Ferreira et al., 2011; Sandoz et al., 2013), but we additionally report that body image flexibility also interacts with internalized societal expectations for body image to predict disordered eating. Thus, our results suggest that the degree to which an individual can be open to experiencing body-related thoughts and emotions without acting on them may determine whether these experiences become associated with eating disorder symptoms. In our sample, individuals who experienced social pressures to be unrealistically fit and thin (high SATAQ-4-PC scores) appeared to be more likely to buy into the idea that being fit and thin is highly important (high SATAQ-4-Int scores) and to be dissatisfied with their body image (high BSQ scores). However, those who reported being able to fully experience their internalized ideals of physical appearance and their feelings of body image dissatisfaction in a detached way, as simply thoughts and feelings (high BI-AAQ scores), rather than as something that needs to be controlled or suppressed (low BI-AAQ scores), appeared able to maintain a healthy relationship with their body and food and not engage in disordered eating (low EAT-40 scores). Thus, our findings are in line with clinical approaches that, rather than focusing on disputing problematic body-related cognitions and reducing body-related distress, place their emphasis on the present-moment awareness and acceptance of body-related internal experiences in an effort to increase behaviors aligned with personal life values (e.g., Fogelkvist et al., 2020; Juarascio et al., 2013).

In spite of the study's contribution, we note that the correlational and cross-sectional nature of the data precludes us from knowing the temporal relationships between the variables. We can allude to the congruence of the results with theory-driven hypotheses but not infer causality. Future experimental and longitudinal studies might provide a deeper understanding of the role of body-image flexibility in the development of eating disorders, as well as what factors may impact body-image psychological flexibility. For example, Hernández-López et al. (2021) found that changes in psychological flexibility from the beginning of the COVID-19 epidemic through a two-month-long, nationwide lockdown predicted changes in mental health. Thus, future investigations could examine longitudinally, through periods associated with exposure to new life challenges, such as the transition from high school to college, whether baseline body image psychological flexibility changes over time to impact disordered eating.

The study also has limitations related to the generalizability of the findings. First, although the characteristics of the Spanish sample were highly relevant for investigations of body image and eating disorders, our sample was somewhat homogenous in terms of age, gender, and educational attainment. Regrettably, no data were collected for this sample about race/ethnicity. Future validation studies should include more diverse Spanish samples to better represent the Spanish general population. In addition, it would be important that future studies analyze the BI-AAQ with Spanish clinical samples to examine the extent to which body-image flexibility is predictive of eating disorder severity and treatment outcomes (see Pellizzer et al., 2018). Although our results support the use of the Spanish version of the BI-AAQ in cross-cultural research, further studies should examine this measure with other Spanish-speaking populations. Finally, it is worth noting that there were procedural differences regarding participant recruitment across the Spanish and American samples that resulted in substantially different sociodemographic compositions across the two samples. Despite these differences between the samples, we still found evidence of partial measurement invariance, as well as evidence that comparisons between randomly selected subsamples yielded the same results regardless of whether or not we included the two noninvariant items in the analyses. That is the procedural differences and demographic differences between the two groups do not undermine our conclusion that the BI-AAQ is adequate for conducting cross-cultural research.

In conclusion, this study constitutes a first and successful step in validating Spanish versions of the BI-AAQ and BI-AAQ-5. We found both instruments were psychometrically sound and likely appropriate for use in cross-cultural research on body image and psychological flexibility. The study provides further insight into the moderating role of body-image flexibility on the impact of internalization of body-image ideals and body dissatisfaction on disordered eating by demonstrating that body-image flexibility may protect against the development of eating disorder symptoms. This latter inference points to body image psychological flexibility/inflexibility as an intervention target in the treatment of body-image-related disorders.

Declaration of conflicts of interest

None.

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Appendix

BI-AAQ-Spanish and BI-AAQ-5 (*italicized items)

Abajo encontrarás una serie de frases. Por favor, indica cómo de cierta es cada una de estas frases aplicadas a ti. Usa la siguiente escala para hacer tus elecciones.						
Nunca es cierto	Muy raramente es cierto	Raramente es cierto	A veces es cierto	Frecuentemente es cierto	Casi siempre es cierto	Siempre es cierto
1	2	3	4	5	6	7
*1. *Preocuparme por mi peso me hace difícil vivir una vida que yo valore.*						
2. Me importan demasiado mi peso y la forma de mi cuerpo.						
*3. *Me desconecto cuando me siento mal por la forma de mi cuerpo o por mi peso.*						
*4. *Mis pensamientos y sentimientos sobre mi peso y la forma de mi cuerpo deberían cambiar antes de que yo pueda dar pasos importantes en mi vida.*						
5. Preocuparme por mi cuerpo consume gran parte de mi tiempo.						
6. Si empiezo a sentirme gordo/a intento pensar en otra cosa.						
7. Antes de hacer ningún plan serio tengo que sentirme mejor con mi cuerpo.						
*8. *Tendré un mejor control de mi vida si logro controlar mis pensamientos negativos sobre mi cuerpo.*						
9. Para controlar mi vida necesito controlar mi peso.						
*10. *Sentirme gordo/a me causa problemas en la vida.*						
11. Cuando empiezo a pensar en el tamaño y la forma de mi cuerpo es duro hacer cualquier otra cosa.						
12. Mis relaciones personales serían mejores si mi peso o la forma de mi cuerpo no me molestasen.						

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