Brief research report

Evaluating the psychometric properties of the Polish version of the Body Appreciation Scale-2

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ABSTRACT

This study aimed to investigate the factor structure and psychometric properties of a Polish version of the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015). Data were collected from 721 individuals residing in various regions of Poland. There were two subsamples ($n = 336$, age $M = 34.95$, $SD = 10.83$; and $n = 385$, age $M = 35.38$, $SD = 10.83$). Both principal-axis and confirmatory factor analyses supported the one-dimensional structure of BAS-2 scores. Moreover, full scalar invariance of the BAS-2 in Poland across sex was demonstrated. Scores on the Polish BAS-2 had adequate internal consistency. Convergent validity was demonstrated through significant correlations between BAS-2 scores and variables related to body image (body and appearance self-conscious emotions), well-being (self-esteem, positive affect, and positive orientation), and body mass index. These results indicate that the Polish BAS-2 is an appropriate and psychometrically-sound measure of body appreciation.

1. Introduction

A growing interest in positive body image, which cannot be treated as simply the opposite of negative body image or a lack of body dissatisfaction, has been recently observed in the literature (Webb, Wood-Barcalow, & Tylka, 2015). One of the most widely-studied aspects of positive body image is *body appreciation*, defined as respect and approval for one's own body, regardless of its weight, shape, and imperfections (Tylka & Wood-Barcalow, 2015). An individual who appreciates their own body accepts it, holds favourable opinions toward their body, pays attention to its needs, takes care of it by engaging in health-promoting behaviours, and rejects unrealistic body ideals presented in the media (Tylka & Wood-Barcalow, 2015; Webb et al., 2015).

To assess body appreciation, the Body Appreciation Scale (BAS) was developed by Avalos, Tylka, and Wood-Barcalow (2005). The BAS includes 13 items and scores in female college samples in the United States (U.S.) were found to have a unidimensional structure and adequate construct validity, internal consistency, and test-retest reliability. The unidimensionality of the scale was also supported in certain samples outside of the U.S., including in Spain (Jáuregui Lobera & Bolaños Ríos, 2011) and Austria

(Swami, Stieger, Haubner, & Voracek, 2008), but a two-factor model has been reported in some cultural contexts, including in Poland (Taylor, Szpakowska, & Swami, 2013) and Brazil (Swami et al., 2011). Considering this lack of cross-cultural equivalence and problematic psychometric properties of some items, as well as advances in body appreciation conceptualisation, Tylka and Wood-Barcalow (2015) developed the 10-item Body Appreciation Scale-2 (BAS-2) — an updated and refined version of the BAS. Both exploratory (EFA) and confirmatory factor analyses (CFA) performed within the U.S. community and college samples demonstrated the unidimensionality of BAS-2 scores. Adequate internal consistency, good test-retest reliability, and the construct validity of BAS-2 scores were supported (Tylka & Wood-Barcalow, 2015). In addition, the factor structure and psychometric properties of the scale have been examined in various countries and linguistic groups. Studies in China (both with Cantonese and Standard Chinese translations; Swami & Ng, 2015; Swami, Ng, & Barron, 2016), Iran (Atari, 2016), the Netherlands (Alleva, Martijn, Veldhuis, & Tylka, 2016), Serbia (Jovic, Sforza, Jovanovic, & Jovic, 2016), Iceland (Pálmarsdóttir & Karlsdóttir, 2016), France (Kertechian & Swami, 2017), and Spain (Swami, García, & Barron, 2017) have found that BAS-2 scores reduce to a single dimension with adequate internal consistency coefficients.

Here, we examined the psychometric properties of BAS-2 scores in Poland for several reasons. First, Poland provides a useful context

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to examine body appreciation, since it has experienced rapid socio-cultural changes over the past several decades. As previous research using the BAS has indicated (Taylor et al., 2013), modernisation of the country and the influence of Western media in promoting a beauty ideal may result in a lower positive body image in Polish women. Second, there are no studies on body appreciation in Polish men, which makes it important to investigate the psychometrics of the BAS-2 in men. Third, the adaptation of the BAS-2 to another language will extend the scope of cross-cultural research.

Through both EFA and CFA, we expected that scores on a Polish version of the BAS-2 would demonstrate a one-factor structure. Furthermore, in line with several studies (Kertechian & Swami, 2017; Swami et al., 2016, 2017; Tylka & Wood-Barcalow, 2015), we predicted that BAS-2 scores would be invariant across sex. Although the literature on sex differences in body appreciation is equivocal, and some studies indicate no significant differences (Swami et al., 2016, 2017), we anticipated lower scores in women as consistent with most previous reports (Atari, 2016; Kertechian & Swami, 2017; Swami & Ng, 2015; Tylka & Wood-Barcalow, 2015). In terms of convergent validity, we predicted that Polish BAS-2 scores would be significantly and positively correlated with scores on measures of well-being (self-esteem, positive affect, and positive orientation) and negatively correlated with body mass index (BMI), as demonstrated by previous validations of the scale (Alleva et al., 2016; Atari, 2016; Swami et al., 2017; Swami & Ng, 2015; Tylka & Wood-Barcalow, 2015). To extend an analysis of the BAS-2 convergent validity, we examined associations of body appreciation with body and appearance self-conscious emotions. We anticipated that BAS-2 scores would be positively correlated with body-related hubristic and authentic pride, yet negatively correlated with body-related shame and guilt.

2. Method

2.1. Participants

The study involved two subsamples that varied in demographic backgrounds, but were homogenous in terms of nationality and ethnicity (all participants were Polish and White). Data from the first subsample were used to examine the factor structure of the BAS-2 using a principal-axis factor analysis. This subsample consisted of 336 individuals from various geographic areas of Poland (171 women) and ranging in age from 19–56 years ($M = 34.95$, $SD = 10.83$). Participants' BMI, based on self-reported weight and height, ranged from 15.46 to 39.86 kg/m^2 ($M = 24.31$, $SD = 3.78$). Data from the second subsample were used to examine the fit of a one-factor model of BAS-2 scores, to test measurement invariance across sex, as well as to investigate internal consistency and convergent validity of BAS-2 scores. The second subsample consisted of 385 individuals (212 women) ranging in age from 18–57 years ($M = 35.38$, $SD = 10.83$). Their BMI ranged from 16.53 to 38.87 kg/m^2 ($M = 23.91$, $SD = 3.72$).

2.2. Measures

2.2.1. Body appreciation

A Polish translation of the BAS-2 (Tylka & Wood-Barcalow, 2015) was used (see Appendix for link to online Supplementary Materials). The scale comprises 10 items rated on a 5-point scale, ranging from 1 (*Never)* to 5 (*Always*).

2.2.2. Self-esteem

We used the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), adapted in Polish by Łaguna, Lachowicz-Tabaczek, and Dzwonkowska (2007). Items were rated on a 4-point scale, ranging from 1 (*Strongly agree*) to 4 (*Strongly disagree*). An overall score was computed as the mean of all 10 items. Higher scores reflect high levels of self-esteem. The Polish version of the RSES has been shown to have an adequate internal consistency and construct validity (Łaguna et al., 2007). In the present study, Cronbach α was .85.

2.2.3. Body-related emotions

Participants completed the Body and Appearance Self-Conscious Emotions Scale (BASES; Castonguay, Sabiston, Crocker, & Mack, 2014; Polish translation: Stachyra, Razmus, & Razmus, 2017), which measures four body-related emotions: shame, guilt, hubristic pride, and authentic pride.[1] Each subscale includes 4 items rated on a 5-point scale, ranging from 1 (*Never*) to 5 (*Always*). Scores were averaged, with higher scores indicating greater intensity of the above-mentioned emotions. Here, the BASES demonstrated adequate internal consistency ($\alpha = .87$ for Shame, $\alpha = .81$ for Guilt, $\alpha = .91$ for Hubristic pride, and $\alpha = .91$ for Authentic pride).[2]

2.2.4. Positive affect

Positive affect was measured with the Positive and Negative Affect Schedule — Expanded Form (PANAS-X; Watson & Clark, 1994; Polish translation: Fajkowska & Marszał-Wiśniewska, 2009). The 10-item General Positive Affect scale was used. Respondents were asked to assess the extent to which they had felt in a particular way within the last week, using a 5-point scale, ranging from 1 (*Very slightly*) to 5 (*Very much*). The scores were averaged, with higher results demonstrating the greater intensity of positive affect. Validation of the Polish version of the PANAS-X provided evidence for adequate convergent and discriminate validity, as well as adequate internal consistency and good test-retest reliability (Fajkowska & Marszał-Wiśniewska, 2009). Here, Cronbach α was .87.

2.2.5. Positive orientation

The Positivity Scale (P Scale; Caprara et al., 2012; Polish translation: Łaguna et al., 2011) was used. The participants' task was to rate the extent to which they agree with each statement on a 5-point scale, ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Scores on all 8 items were computed by averaging; higher results represent higher levels of positive orientation. Scores on the Polish P Scale showed a one-factor solution with good fit indices, adequate convergent validity, and internal consistency (Łaguna et al., 2011). Here, Cronbach α was .87.

2.2.6. Demographic items

Demographic items included participants' sex, age, height, and weight.

2.3. Procedure

The BAS-2 was translated into Polish by three professional translators. The translations were compared and discussed by the

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[1] Factorial validity of the Polish BASES was analysed using CFA on data from a sample of 325 participants (54% women) aged 20–28, $M_{age} = 22.45$; $SD_{age} = 1.30$. The model had acceptable fit, $\chi^2(96) = 302.278$, $p < .001$, $\chi^2_{normed} = 3.149$; RMSEA = .081 with 90% CI = .071–.092; CFI = .944; SRMR = .073. All factor loadings were significant and high (from .64 to .93), and the composite reliabilities exceeded .60 (from .84 to .91) (Stachyra et al., 2017).

[2] In the present study, we examined model fit of the BASES scores using data from the second subsample. The hypothesized four-factor model with two error covariances (between Items 11 and 13; and Items 2 and 9) provided an adequate fit to the data, $\chi^2(96) = 301.312$, $p < .001$, $\chi^2_{normed} = 3.139$; RMSEA = .075 with 90% CI = .065–.084; CFI = .952; SRMR = .048 (see Statistical analysis section for details about the model evaluation). The factor loadings of the items related to the same underlying construct were all high (from .61 to .89).