Body Acceptance by Others: Refinement of the Construct, and Development and
Psychometric Evaluation of a Revised Measure – the Body Acceptance by Others Scale-2

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Abstract

The Body Acceptance by Others Scale (BAOS) measures the degree to which individuals perceive body acceptance by others, but its factor structure is questionable. Here, we developed a revision of the BAOS (i.e., the BAOS-2) by designing novel items reflective of generalised perceptions of body acceptance by others. In three studies, we examined the psychometrics of the 13-item BAOS-2. Study 1, with United Kingdom adults ($N = 601$), led to the extraction of a unidimensional model of BAOS-2 scores and provided evidence of 4-week test-retest reliability. Study 2, with United Kingdom adults ($N = 423$), indicated that the unidimensional model of BAOS-2 scores had adequate fit and that scores were invariant across gender. Study 2 also provided evidence of convergent, construct, criterion, discriminant, and incremental validity. Study 3 cross-validated the fit of the unidimensional model in adults from the United State ($N = 503$) and provided evidence of invariance across gender and national group. Internal consistency coefficients of BAOS-2 scores were adequate across all three studies. There were no significant gender differences in BAOS-2 scores and a significant national difference had a negligible effect size. Thus, the BAOS-2 is a psychometrically-sound measure that can be utilised in future research.

Keywords: Body acceptance by others; Scale development; Psychometrics; Positive body image; Measurement invariance

1. Introduction

Positive body image refers to an "overarching love and respect for the body" that includes appreciation of the body and its functions, acceptance of the body despite its imperfections, and body-protective behaviours (Tylka, 2018, p. 9). In this view, positive body image is a multidimensional construct that is distinct from negative body image (Tylka, 2011, 2018; Tylka & Wood-Barcalow, 2015a). Consistent with this perspective, studies have shown that facets of positive body image are uniquely associated with a range of physical and psychological outcomes over-and-above negative body image (for reviews, see Daniels et al., 2018; Tylka & Piran, 2019). Such outcomes include greater emotional, psychological, and social well-being (e.g., Davis et al., 2020; Swami et al., 2018), positive self-care health behaviours (e.g., Andrew et al., 2016a; Gillen, 2015), and adaptive eating styles that are associated with lower body mass indices and weight stability (e.g., Tylka et al., 2015, 2020). As such, a consideration of positive body image is important for the further development and provision of intervention strategies aimed at promoting embodiment-related well-being.

In tandem with the emphasis on positive body image, scholars have also called for an enhanced focus on the way in which internal bodily experiences are reciprocally entwined with external relationships and systems (e.g., Tiggemann, 2011, 2019; Waring & Kelly, 2020; Wood-Barcalow et al., 2010). For example, according to the Attuned Representation Model of Self (Cook-Cottone, 2006, 2015a), the way in which individuals perceive and experience their bodies involves interdependent, mutually influential, and co-regulated relationships between their inner bodily experiences and their environment (e.g., family, close friends, and intimate partners, communities, and the broader culture). In this view, embodiment and positive body image are more likely to occur, develop, and flourish when individuals are able to nurture their inner experiences, while feeling supported by their environment (Cook-Cottone, 2015a, 2015b, 2018).

One important environmental factor that has an influence on positive body image is *body acceptance by others* (for a review, see Tiggemann, 2019), which refers to the degree to which an individual perceives acceptance for their bodies by others (Avalos & Tylka, 2006). According to the *acceptance model of intuitive eating* (Avalos & Tylka, 2006), social support and body acceptance by others are important factors that lead to more positive body image, as they allow for greater resistance of self-objectification and facilitate greater appreciation of how the body feels and functions, rather than what it looks like. Consistent with this perspective, researchers have documented significant and positive associations between greater body acceptance by others and facets of positive body image including body functionality, body appreciation, body pride, and body image flexibility (Andrew et al., 2016b; Augustus-Horvath & Tylka, 2011; Avalos & Tylka, 2006; Swami et al., 2017, 2018; Tylka & Homan, 2015; Waring & Kelly, 2020; see also Frisén & Holmqvist, 2010; Holmqvist Gattario & Frisén, 2019). Body acceptance by others has also been found to be significantly associated with other body image-related outcomes, including greater functional exercise motives (Tylka & Homan, 2015) and lower weight concern (Logel et al., 2014).

1.1. Refining the Definition of Body Acceptance by Others

While the available research highlights the importance of body acceptance by others, a number of conceptual and methodological issues limit scholarly understanding of the construct. First, the concept of body acceptance by others itself could be more clearly defined – that is, there is a need to more carefully define how any latent construct manifests in observable variables (Cronbach & Meehl, 1955). To wit, although the construct was originally defined as acceptance by others of one's body shape and size (Avalos & Tylka, 2006; Webb et al., 2015), the focus on body shape and size specifically may provide a limited understanding of the ways in which individuals experience or perceive bodily acceptance. For instance, focusing on body shape and weight may mean that the construct is less relevant

when considered in relation to men, for whom perceived acceptance of muscularity or body build may be more pertinent (e.g., Grogan & Richards, 2002; Jones & Crawford, 2006; Ridgeway & Tylka, 2005). More generally, body acceptance by others is likely to also include broader physical characteristics that play a role in interpersonal perceptions, such as skin tone, height, and hair colour (Reno & McNamee, 2015; Swami & Furnham, 2008; Thompson & Zaitchik, 2012). Another example: as Tiggemann (2015) has discussed, body acceptance by others may be a critical factor leading to positive body image for individuals with a visible difference, but acceptance for these individuals is likely to include characteristics beyond body shape and weight.

A second conceptual issue that could be refined further is the distinction between perceived and enacted (or received, objective, or actual) body acceptance by others. For example, in their original description of the construct, Avalos and Tylka (2006) described body acceptance by others as both the perception that others accept one's body, as well acknowledgement of others' opinions about one's body (i.e., through receiving messages of body acceptance) (see also Webb et al., 2015). However, as first posited by social interactionists (Cooley, 1902; Mead, 1934), acceptance by others is not necessarily an objective property of social interactions (see Cohen & Syme, 1985; Kenny, 1994; MacGeorge et al., 2011). For example, it is possible to conceive of instances where an individual receives messages of body acceptance from, say, an intimate partner and yet *perceives* their partner as *not* being accepting of their body (e.g., because of their partner's broader behaviour or demeanour, an unwillingness to accept positive messages, or a lack of confidence in the truthfulness of messages; see Sarason et al., 1990). Conversely, given the multiple channels through which acceptance could be enacted (e.g., Barrera, 1986; Tardy, 1985), it is also possible to conceive of instances where an individual does *not* receive explicit messages of body acceptance from, say, their partner and yet still perceives their

partner as being accepting of their body. Indeed, in some social identity groups (e.g., older women), it is the absence of critical appearance commentary that indirectly communicates body acceptance by close others (Patterson et al., 2019).

As such, there may be greater value in focusing on subjective appraisals of body acceptance by others, irrespective of enacted body acceptance by others. Indeed, this line of reasoning is consistent with findings from research on social support, where it has been noted that perceived and enacted social support are only weakly associated (for a meta-analysis, see Haber et al., 2007), that enacted social support does not necessarily indicate that support needs are being met (e.g., Helgeson, 1993), and that perceived support is more important than enacted support for physical and psychological health outcomes (e.g., Cohen & Wills, 1985; McDowell & Serovich, 2007; Wethington & Kessler, 1986). In consideration of these issues, we propose a refined definition of *body acceptance by others* as a sense that one's body and its physical characteristics are valued, respected, and unconditionally accepted by important others. It is a relatively stable evaluative perception of general acceptance of one's body and its physical characteristics by others, separately and irrespective of what others or social domains actually offer at any particular time. Finally, and consistent with both the theoretical perspective of Avalos and Tylka (2006), as well as the results of qualitative research (Frisén & Holmqvist, 2010; Holmqvist Gattario & Frisén, 2019; Wood-Barcalow et al., 2010), we maintain that body acceptance by others is a contributor to, rather than a facet of, positive body image specifically and social acceptance more generally.

1.2. Refining How Body Acceptance by Others is Measured

In light of the conceptual refinement above, it is also necessary to reconsider how body acceptance by others is operationalised. Specifically, the construct is typically measured using the Body Acceptance by Others Scale (BAOS), a 10-item instrument in which respondents are asked to rate the perceived acceptance of their body shape and weight, and

the degree to which they receive messages that their body shape and weight are "fine," from

five sources (i.e., friends, family, dating partners, mass media, and society). In a pilot study

with college women from the United States ($N = 66$), Avalos and Tylka (2006) reported that a

unidimensional model of BAOS scores had adequate internal consistency (Cronbach's $\alpha =$

.91), adequate test-retest reliability over a 3-week period ($r = .85$), and adequate construct

validity (via a negative association with pressure for thinness, $r = -.69$, and a non-significant

relationship with impression management, $r = .07$). Since its development, the BAOS has

been used in a wide range of social identity and national groups (e.g., Andrew et al., 2015,

2016b; Homan & Cavanaugh, 2013; Oh et al., 2012; Swami, 2019; Swami et al., 2019).

Despite its wide usage, the BAOS has rarely been subjected to comprehensive

analyses of factorial validity, and scholars have typically assumed that BAOS scores are

unidimensional based on adequate internal consistency coefficients. However, internal

consistency in and of itself is not a useful index of score dimensionality (e.g., Green et al.,

1977) and, where studies have examined the factor structure of BAOS scores, there have

been difficulties confirming the fit of the 1-dimensional model. For example, one study using

confirmatory factor analysis (CFA) with data from adults from the United Kingdom indicated

that a unidimensional model of BAOS scores had very poor fit (Swami, Furnham et al.,

2020). Similarly, and also using data from United Kingdom respondents, a second study

using exploratory factor analysis (EFA) indicated that BAOS scores reduced to two

dimensions in women (although only a 6-item factor measuring body acceptance from

friends, family, and dating partners was internally consistent) and a single dimension (with all

10 items) in men (Swami, Todd et al., 2020). Yet, both models had poor fit when examined

using CFA, suggestive of underlying problems with the dimensionality of BAOS scores.

Beyond issues of factorial validity, the way the BAOS is scored may also be a

limiting factor because it conflates perceived body acceptance by others with enacted body

acceptance (i.e., receiving messages indicative of body acceptance by others). As we discussed above, there are good reasons to focus on perceptions of body acceptance by others, separately to enacted body acceptance by others, whether in the form of messages or other forms of enactment. Second, while the distinction between different sources in the BAOS (i.e., friends, family, dating partners, mass media, and society) may sometimes be useful (e.g., see Kroon Van Diest & Tylka, 2010; Waring & Kelly, 2020), it provides little practical value given that scholars do not commonly distinguish between the different sources when scoring the BAOS. This is particularly important given that there may be discrepancies between generalised perceptions of acceptance by others and perceptions of how specific others see the self (cf. Malloy & Cillessen, 2008). That is, an individual may have a fairly accurate impression of the extent to which their body is accepted by others (e.g., their family members in general), but still be mistaken about whether specific others accept their body (e.g., their mother; i.e., a question of dyadic perception accuracy) (Malloy et al., 2007). In addition, the BAOS does not consider the likely value that individuals differentially place on various sources of body acceptance; that is, individuals are more likely to value and internalise body acceptance from others when the relationship to the source is close or meaningful and when the source can be easily personified (as opposed to abstract sources like mass media and society) (see Baldwin, 1992; Sullivan, 1953).

1.3. The Present Studies

In light of the refined definition of body acceptance by others and the aforementioned limitations of the BAOS, we followed best-practice guidelines in scale construction (Hinkin, 1992; McCoach et al., 2017; Spector, 1992; see Section 2.1) to develop a revised version of the instrument, which we henceforth refer to as the BAOS-2. Specifically, the BAOS-2 was designed to provide a measure of generalised perceptions of body acceptance by others. Here, we report on three studies pertaining to the development and psychometric evaluation of the

BAOS-2. In Study 1, we describe the development of the BAOS-2 and report the results of an initial EFA with BAOS-2 data from United Kingdom adults, as well as an examination of test-retest reliability. In Study 2, we report on the results of a CFA assessing fit of the BAOS-2 model derived from Study 1, provide evidence of construct validity, and examine invariance across gender in a sample of adults from the United Kingdom. Finally, in Study 3, we cross-validated the factor structure of BAOS-2 scores in a sample of adults from the United States and report on the results of invariance testing of BAOS-2 scores across nations (i.e., across the United Kingdom and United States). In short, these steps allowed us to assess the extent to which our newly developed measure could be considered a psychometrically sound measure for use in future research.

2. Study 1: Scale Development and Exploratory Factor Analysis

The purpose of Study 1 was, firstly, to develop the BAOS-2 through an iterative and consensual process of consultation between experts in positive body image and psychometricians. This was an important step as relying on psychometric properties is unlikely to be sufficient to develop valid questionnaires (Goretzko, Pargent et al., 2020). Specifically, we aimed to produce a generalist measure of the perceived body acceptance by others; that is, the BAOS-2 does not refer to specific sources, but instead includes items that tap the perception of body acceptance by others in a general sense. In addition, in Study 1, we also explored the factor structure of the item set derived from our development process using EFA. This provided us with an initial accounting of the factor structure of BAOS-2 items (see Swami & Barron, 2019; Worthington & Whittaker, 2006), alongside indicators of internal consistency. Finally, in Study 1, we also conducted an examination of test-retest reliability of BAOS-2 scores and conducted a preliminary examination of construct validity.

2.1. Scale Development

In developing the BAOS-2, we began by refining the definition of body acceptance by others (see Section 1.1.). To do so, we drew primarily on the extant interactionist research documenting differences between perceived and enacted social support, as well as the broader literature on social acceptance (see Sarason et al., 1990). Once we arrived at a draft definition, we iteratively and inductively developed a novel pool of items reflective of body acceptance by others (Hinkin, 1981; Spector, 1992). Here, the first author (with expertise in psychometrics and positive body image) initially reviewed items from other relevant measures – including the Perceived Acceptance Scale (Brock et al., 1998) and the Social Connectedness Scale-Revised (Lee et al., 2001) – alongside the BAOS. Based on this review, a total of 20 novel items were generated so as to be generic statements that described the target construct (DeVellis, 2016). Four authors (the first author, two psychometricians, and an expert on positive body image) then reviewed the initial item pool, with a view to assessing the degree to which the items comprehensively assessed body acceptance by others, the totality of the item pool (i.e., whether the set of items collectively represent the entire construct) (Straub et al., 2004), and refining item wording for semantic and conceptual clarity. This was an iterative process that resulted in several items being revised, items being excluded because they did not adequately capture our draft definition of body acceptance by others, and two new items being generated (item pool = 11 retained items, 11 discarded items). At this stage, we also drafted response options and instructions to participants, where we highlighted that items pertained to "important others" (which we defined as "important people, groups, or communities in your life") presented alongside exemplars ("members of your family, close friends, intimate partner(s)/spouse, groups you belong to, and online communities").

Next, we sent our draft definition, the retained and discarded items, the instructions to participants, and the item anchors to nine experts in positive body image. The expert panel

were asked to comment on the appropriateness of our definition of body acceptance by others, the comprehensiveness of our retained item pool, whether any discarded items should in fact be retained, and the suitability of the item anchors (Haynes et al., 1995). Based on the expert commentary, several revisions were made: (1) the definition of body acceptance by others was expanded to include a focus on the body and its physical characteristics (rather than body size and shape specifically); (2) instructions to participants were reworded to improve clarity and to include additional exemplars of "important others" (i.e., teachers, coaches, peers, and co-workers); (3) instructions to participants were revised to include a request to nominate 1-3 "important others" using an open-ended question; (4) one item that experts identified as being unclear was substantively revised; (5) one item that experts indicated might be difficult to translate beyond English was revised to remove an idiomatic description; (6) one item generated and suggested by an expert was included in the retained item pool; and (7) one item that was initially discarded was returned to the retained item pool.

Following these revisions, we sent the revised definition of body acceptance by others, the instructions to participants, item response options, and the retained pool of 13 items back to the expert panel. The panel were again asked to assess the items for comprehensiveness, but were additionally asked to comment on the suitability of the broader definition of body acceptance by others, the necessity of requesting that participants nominate important others, and whether the omission of specific sources (e.g., close friends, family, mass media) from the BAOS-2 items was acceptable. Based on the further commentary from the expert panel, we: (1) concluded that it was important to include the broader definition of body acceptance by others so as to facilitate use of the instrument in diverse social identity groups; (2) omitted the request to participants to nominate important others (because of potential methodological limitations, such as respondents being unable to nominate important

others); and (3) retained all 13 draft items for analyses along with the originally-proposed item response options.

2.2. Examining the Psychometrics of the BAOS-2

To examine the BAOS-2's factor structure, we subjected data from an online sample of adults from the United Kingdom to EFA. This is an important first step in validating new measures as it allowed us to examine the best-fitting model of BAOS-2 scores for our sample without any constraints in terms of modelling (Worthington & Whittaker, 2006). Given that all items were designed to tap the same underlying construct, we expected that the BAOS-2 items would reduce to a single factor and BAOS-2 scores would demonstrate adequate internal consistency. In Study 1, we also conducted a preliminary examination of the construct validity of BAOS-2 scores through associations with body mass index (BMI; based on previous studies showing that body acceptance by others is negatively associated with BMI; Augustus-Horvath & Tylka, 2011) and BAOS scores. Evidence of construct validity would be provided insofar as BAOS-2 scores are strongly correlated with BAOS scores and weakly-to-moderately correlated with BMI. Finally, we hypothesised that BAOS-2 scores would be stable over a 4-week period, providing evidence of test-retest reliability.

2.2.1. Method

2.2.1.1. Participants.

Participants of Study 1 were an online sample of 601 adults (women $n = 300$, men $n = 301$) from the United Kingdom. Participants ranged in age from 18 to 74 years ($M = 36.47$, $SD = 14.07$) and in self-reported BMI from 15.00 to 48.85 kg/m^2 ($M = 26.82$, $SD = 6.35$). The majority of participants were White (87.4%; Asian = 7.3%; Black = 2.5%; mixed race = 2.3%; other = 0.5%) and heterosexual (86.9%; bisexual = 6.2%; gay/lesbian = 4.0%; pansexual = 1.2%; asexual = 0.8%; other = 1.0%). In terms of relationship status, 29.0% were single, 11.3% were partnered but not cohabiting, 23.0% were partnered and cohabiting,

31.4% were married, and the remainder had some other status. In terms of educational qualifications, 16.3% had completed their General Certificates of Secondary Education (GCSEs), 28.2% had an Advanced-Level (A-Level) qualification, 34.4% had an undergraduate degree, 19.0% had a postgraduate degree, 0.5% were in full-time education, and 1.5% had some other qualification.

Test-retest data were gathered from 197 participants (98 women, 99 men) after four weeks. These participants ranged in age from 18 to 74 years ($M = 40.43$, $SD = 14.10$) and in self-reported BMI from 15.00 to 48.85 kg/m^2 ($M = 27.62$, $SD = 6.94$). The majority of participants were White (89.3%; Asian = 7.1%; Black = 2.0%; mixed race = 1.0%; other = 0.5%) and heterosexual (88.3%; bisexual = 5.6%; gay/lesbian = 4.1%; asexual = 0.5%; other = 1.5%). In terms of relationship status, 30.5% were single, 8.6% were partnered but not cohabiting, 19.3% were partnered and cohabiting, 35.5% were married, and the remainder had some other status. In terms of educational qualifications, 19.8% had completed their GCSEs, 25.4% had an A-Level qualification, 33.5% had an undergraduate degree, 19.3% had a postgraduate degree, and the remainder had some other qualification.

2.2.1.2. Measures.

Participants were asked to complete the 13-item version of the BAOS-2 as described in Section 2.1. All items were rated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). Instructions to participants that accompanied these items are presented in Appendix 1. In addition, the survey package included the 10-item BAOS (Avalos & Tylka, 2006), which measures an individual's perception of acceptance for, and receipt of messages reflecting acceptance of, their body shape and weight from friends, family, dating partners, society, and the media. Participants rated the frequency of these experiences using a 5-point scale, ranging from 1 (*never*) to 5 (*always*). Although the factor structure of BAOS scores has been problematised (Swami, Furnham et al., 2020; Swami, Todd et al., 2020), for reasons of

parsimony and expediency, we treated BAOS scores as unidimensional, which is consistent with its theorised dimensionality (Avalos & Tylka, 2006). In the present study, McDonald's ω for BAOS scores was .91 (95% CI = .89, .92). Participants were also asked to provide their demographic details consisting of gender identity, sexual orientation, relationship status, highest educational qualification, age, race, height, and weight. Height and weight data were used to compute self-reported BMI as kg/m^2.

2.2.1.3. Procedures.

Ethics approval for this and all subsequent studies was obtained from the School ethics committee at Anglia Ruskin University. All data were collected via the Prolific website, a crowdsourcing Internet marketplace that allows individuals to complete academic surveys for monetary compensation, on June 17, 2020. The project was advertised as a study on "attitudes toward the body" and included an estimated duration. Participation was limited to citizens and residents of the United Kingdom, those of adult age, and those fluent in English, so as to recruit a nationally homogeneous sample. Given the brief survey, no attention check item was included. Prolific ID codes and IP addresses were examined to ensure that no participant took the survey more than once. After providing digital informed consent, participants were asked to complete the BAOS-2 and BAOS, which were presented in a counter-balanced order to control for order effects. Demographic items were completed last. The questionnaire was anonymous and, in exchange for completion, participants were paid £0.52. All participants received debriefing information at the end of the survey.

Four weeks after completing the initial survey, all 601 participants were invited to complete a retest survey consisting of the BAOS-2. Recruitment was stopped once 200 participants had responded. Yet, three of these participants failed to complete the BAOS-2, so were excluded from analyses. For all remaining participants, Prolific ID codes were used to link test and retest data (destroyed prior to analyses to ensure anonymity). All retest

participants took part on a voluntary basis and were paid £0.33. At the end of this survey,

retest participants were provided with debriefing information about this portion of the project.

2.2.1.4. Analytic strategy.

There were no missing BAOS-2 or BAOS data, but 66 participants were missing height

and/or weight data or had improbable BMI values (< 12 or > 50 kg/m^2). Following Swami

and colleagues (2018), BMIs for these participants were treated as missing values and were

replaced using the mean replacement method. In order to assess the factor structure of

BAOS-2 scores, we computed a principal-axis EFA using the *psych* package (Revelle, 2019)

in *R* (*R* development Core Team, 2014) separately for women and men. These subsample

sizes satisfied Worthington and Whittaker's (2006) item-communality requirements, as well

as assumptions for EFA based on item distributions, average item correlations, and item-total

correlations (Clark & Watson, 1995). Data factorability was assessed using the Kaiser-

Meyer-Olkin (KMO) measure of sampling adequacy (which should ideally be $\geq .80$) and

Bartlett's test of sphericity (which should be significant) (Hair et al., 2009). Principal-axis

factoring was used for the EFAs as it yields results similar to commonly used maximum

likelihood estimation without assuming multivariate normality (Fabrigar et al., 1999;

Goretzko, Pham et al., 2020). Given the expectation of a single orthogonal factor, a

quartimax rotation was applied (Pedhazur & Schmelkin, 1991).

To estimate the number of factors to extract and factor structure adequacy, we

examined fit statistics using commonly used fit indices (Finch, 2020). Specifically, we used

the normed model chi-square (χ^2/df; values < 3.0 considered indicative of good fit), the

Steiger-Lind root mean square error of approximation (RMSEA) and its 90% CI (values close

to .06 considered to be indicative of good fit and up to .08 indicative of adequate fit), the

standardised root mean square residual (SRMR; values $< .09$ indicative of good fit), and the

Tucker-Lewis index (TLI; values close to or $> .95$ indicative of good fit), and the

comparative fit index (CFI; values close to or > .95 indicative of adequate fit) (Hu & Bentler, 1999; Steiger, 2007). Corrections to fit indices were not required as EFA is robust to violations of univariate and multivariate normality (Curran et al., 1996). Item retention was based on the recommendation that items with "fair" loadings and above (i.e., ≥ .33) and with low inter-item correlations (suggestive of low item redundancy) as indicated by the anti-image correlation matrix should be retained (Comrey & Lee, 1992; Tabachnick & Fidell, 2013). We also assessed the degree of factor similarity across women and men using Tucker's (1951) congruence coefficient, with values between .85 and .94 corresponding to fair similarity across groups and values ≥ .95 suggesting that factor structures can be considered equal across groups (Lorenzo-Seva & ten Berge, 2006).

Internal consistency was assessed using McDonald's ω and its associated 95% CI, with values greater than .70 reflecting adequate internal reliability (Dunn et al., 2014). Specifically, we computed hierarhical ω using the *semTools* package for *R* (Jorgensen et al., 2018), which allows for models that do not fit the data perfectly (Kelley & Pornprasertmanit, 2016). McDonald's ω was selected as a measure of internal consistency because of known problems with the use of Cronbach's α (e.g., McNeish, 2018) and because ω does not suffer from the same limitations (Dunn et al., 2014). Construct validity was assessed using bivariate correlations between BAOS scores, BMI, and BAOS-2 scores, with effect sizes interpreted based on Cohen's (1992) standards. Finally, intraclass correlation coefficients (ICCs; with higher values preferred; Charter & Feldt, 2001; Shrout, 1998) and a paired-samples *t*-test to estimate the test-retest stability of BAOS-2 scores after four weeks.

2.2.2. Results and Discussion

2.2.2.1. Factor analysis with women.

For women, Bartlett's test of sphericity, $\chi^2(78) = 2791.1$, $p < .001$, and the KMO (.96) indicated that the BAOS-2 items had adequate common variance for factor analysis. The results of the EFA revealed a single factor with $\lambda > 1.0$ ($\lambda_1 = 7.97$, $\lambda_2 = 0.79$). As such, we

retained one factor, which explained 58.2% of the common variance. The fit indices for this model were adequate: $\chi^2(65) = 209.99$, $p < .001$, $\chi^2_{normed} = 3.23$, CFI = .947, TLI = .936, RMSEA = .086 (90% CI = .073, .100), SRMR = .04. All 13 items loaded strongly onto the extracted factor (item-factor loadings $\geq$ .62; see Table 1) and all items had relatively low inter-item correlations as indicated by the anti-image correlation matrix ($\leq$ .39).

2.2.2.2. Factor analysis with men.

For men, Bartlett's test of sphericity, $\chi^2(78) = 2634.6$, $p < .001$, and KMO (.95) again indicated that the BAOS-2 items had adequate common variance for factor analysis. The results of the EFA revealed one factor with $\lambda > 1.0$ ($\lambda_1 = 7.63$, $\lambda_2 = 0.91$), which explained 55.3% of the common variance. The fit indices for this model were adequate: $\chi^2(65) = 261.82$, $p < .001$, $\chi^2_{normed} = 4.03$, CFI = .923, TLI = .907, RMSEA = .100 (90% CI = .088, .113), SRMR = .05. All 13 items loaded strongly onto the extracted factor (item-factor loadings $\geq$ .64; see Table 1) and all items had low inter-item correlations as indicated by the anti-image correlation matrix ($\leq$ .36).

2.2.2.3. Item trimming considerations and factor structure congruence.

We considered whether any items of the BAOS-2 could be trimmed, but none of the items met commonly used item trimming recommendations (e.g., Henson & Roberts, 2006; Park et al., 2002). Next, we examined factor structure congruence between women and men. The factor loadings reported in Table 1 for women and men separately suggest strong similarity across factor structures. Indeed, Tucker's congruence coefficient (.99) indicated that there was factor structure equivalence across the models for women and men.

2.2.2.4. Internal consistency and construct validity.

Mean BAOS-2 scores were 3.60 ($SD = 0.84$) in women and 3.41 ($SD = 0.87$) in men. McDonald's ω was adequate in women (.95, 95% CI = .94, .96), men (.94, 95% CI = .93, .95), and the total sample (.95, 95% CI = .94, .95). In women, BAOS-2 scores were significantly and positively correlated with BAOS scores ($r = .66$, $p < .001$) and negatively

with BMI (r = -.27, $p < .001$). Likewise, BAOS-2 scores in men were significantly and

positively correlated with BAOS scores ($r = .64$, $p < .001$) and negatively with BMI (r = -.25,

$p < .001$).

2.2.2.5. Test-retest reliability.

Retest participants did not differ significantly from the main sample on any demographics (all

ps $\geq .097$). The ICCs between the BAOS-2 scores at the first and second administration were

.87 for women and .88 for men. In addition, BAOS-2 scores were not significantly different

over time in women, $t(97) = 0.97$, $p = .334$, and men, $t(98)$, $= 0.18$, $p = .859$. These findings

support the test-retest reliability of BAOS-2 scores over a 4-week period.

2.2.2.6. Discussion.

The results of Study 1 indicate that scores on the BAOS-2 are unidimensional, with all 13

items being retained for both women and men. In addition, internal consistency coefficients

were adequate for both women and men. Taken together, these results suggest that all 13

items tap the same underlying construct, with no indication of item redundancy, and that the

unidimensional factor structure of BAOS-2 scores is equivalent across gender. The results

also indicate that BAOS-2 scores have adequate test-retest reliability up to 4 weeks. Finally,

the results also provide preliminary evidence of construct validity, insofar as BAOS-2 scores

were positively correlated with BAOS scores to a strong degree, as well as inversely

correlated with self-reported BMI to a small-to-moderate degree.

3. Study 2: Confirmatory Factor Analysis and Construct Validity

The aim of Study 2 was to use CFA with the 13-item BAOS-2 to determine the extent

to which the results of Study 1 would be confirmed in a new sample of adults from the

United Kingdom. Here, we hypothesised that all BAOS-2 items would load onto one latent

factor and that this model would provide acceptable fit to the data. We also tested for

measurement invariance across gender to confirm that the BAOS-2 assesses the same

construct for women and men. We expected to be able to demonstrate full measurement invariance (at the configural, metric, and scalar levels), which would also allow us to examine gender differences in BAOS-2 scores. We also conducted a fuller examination of the construct validity of BAOS-2 scores. More specifically, in line with the acceptance model (Avalos & Tylka, 2006), we predicted that BAOS-2 scores would be moderately correlated with scores on measures of positive body image (i.e., body appreciation and functionality appreciation) and weakly correlated with self-reported BMI. Also, because individuals who perceive high body acceptance by others are likely to resist sociocultural appearance ideals, we expected that BAOS-2 scores would exhibit moderate inverse relationships to pressure to internalise sociocultural appearance ideals and the internalisation of weight bias.

We also expected that BAOS-2 scores would show moderate-to-strong positive correlations with feeling secure with one's position and general acceptance from others. Further, given that body acceptance by others likely reflects a nurturing stance that promotes positive psychological functioning, we hypothesised that BAOS-2 scores would be moderately and positively correlated with self-compassion and self-esteem. To examine discriminant validity, we examined associations between BAOS-2 scores and a measure of impression management, which is consistent with the use of this construct as an indicator of discriminant validity in positive body image research (Tylka & Wood-Barcalow, 2015). Based on the aforementioned study, we expected a weak association between impression management and BAOS-2 scores. Finally, we hypothesised that BAOS-2 scores would predict unique variance in outcome measures (i.e., body appreciation, functionality appreciation, and self-esteem) above-and-beyond associations with pressures (from significant others such as peers and family, as well as media) to conform to appearance ideals, which can be considered to be the "negative equivalent" of body acceptance by others.

These findings would support the incremental validity of BAOS-2 scores, highlighting the importance of the construct in body image research.

3.1. Method

3.1.1. Participants.

The initial participant pool consisted of 449 individuals, but we excluded 26 respondents who failed an attention check item. The final sample, therefore, consisted of 423 individuals (women $n = 212$, men $n = 211$) who ranged in age from 18 to 74 years ($M = 34.20$, $SD = 12.26$) and in self-reported BMI from 15.39 to 48.83 kg/m^2 ($M = 27.19$, $SD = 6.53$). The majority of participants were heterosexual (87.9%; bisexual = 6.4%; gay/lesbian = 3.8%; asexual = 0.9%; pansexual = 0.5%; other = 0.5%) and White (87.5%; Asian = 7.8%; Black = 1.9%; mixed race = 2.6%; other = 0.2%). In terms of relationship status, 31.4% of participants were single, 13.5% were partnered but not cohabiting, 23.6% were partnered and cohabiting, 28.4% were married, and the remainder were of another status. In terms of education, 12.3% had completed their GCSEs, 29.3% had completed their A-Levels, 38.1% had an undergraduate degree, 16.1% had a postgraduate degree, 2.1% were in full-time education, and 2.1% had some other qualification.

3.1.2. Measures.

3.1.2.1. Body acceptance by others.

We used the same version of the BAOS-2 as in Study 1 and presented in Appendix 1.

3.1.2.2. Body appreciation.

Body appreciation was measured using the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015b). This is a 10-item measure that assesses acceptance of one's body, respect and care for one's body, and protection of one's body from unrealistic beauty ideals (sample item: "I respect my body"). All items were rated on a 5-point scale, ranging from 1 (*never*) to 5 (*always*), and an overall score was computed as the mean of all items.

Higher scores on this scale reflect greater body appreciation. BAS-2 scores have been shown

to have a 1-dimensional factor structure, adequate internal consistency coefficients and test-

retest reliability after 3 weeks, and good indices of convergent and discriminant validity in

English-speaking adults (Tylka & Wood-Barcalow, 2015b). McDonald's ω for BAS-2 scores

was .94 (95% CI = .93, .95).

3.1.2.3. Functionality appreciation.

Participants were asked to complete the Functionality Appreciation Scale (FAS; Alleva et al.,

2017), a 7-item measure of participants' appreciation of what the body does and can do

(sample item: "I feel that my body does so much for me"). All items were rated on a 5-point

scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). An overall score was

computed as the mean of all items, with higher scores reflecting greater functionality

appreciation. FAS scores have been reported to have a 1-dimensional factor structure,

adequate internal consistency and test-retest reliability after 3 weeks, and adequate criterion-

related and construct validity in English-speaking adults (Alleva et al., 2017). McDonald's ω

for FAS scores was .91 (95% CI = .89, .92).

3.1.2.4. Sociocultural influences.

To measure perceived pressure to conform to sociocultural appearance ideals, we used the

Pressures items from the Sociocultural Attitudes Toward Appearance Questionnaire–4

(Schaefer et al., 2015). Participants were asked to report pressure to internalise appearance

ideals from family members (4 items; sample item: "I feel pressure from family members to

look thinner"), peers (4 items; sample item: "I feel pressure from my peers to look in better

shape"), and media (4 items; sample item: "I feel pressure from the media to improve my

appearance"). All items were rated on a 5-point scale ranging from 1 (*definitely disagree*) to

5 (*definitely agree*). Subscale scores were computed as the mean of 4 items for each factor,

respectively, with higher scores indicating greater perceived pressure from peers, family, or

media. SATAQ-4 scores evidence adequate internal consistency and convergent validity in

English-speaking samples (Schaefer et al., 2015). McDonald's ω for scores on this measure were .90 (95% CI = .89, .92) for Family, .91 (95% CI = .90, .93) for Peers, and .96 (95% CI = .95, .97) for Media.

3.1.2.5. Weight bias internalisation.

To measure the internalisation of weight bias, participants were asked to complete the Weight Bias Internalisation Scale (WBIS; Durso & Latner, 2008), modified by Pearl and Puhl (2014) to be applicable to individuals across weight statuses. The WBIS-M is an 11-item instrument that assesses the degree to which individuals internalise negative stereotypes of weight (sample item: "Because of my weight, I don't feel like my true self"). All items were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An overall score was computed as the mean of all items following reverse-coding of two items, such that higher scores reflect greater weight bias internalisation. Scores on the WBIS-M have been shown to have adequate internal consistency and good patterns of construct validity in English-speaking samples (Pearl & Puhl, 2014). McDonald's ω for WBIS-M scores was .96 (95% CI = .96, .97).

3.1.2.6. Striving to avoid inferiority.

Participants were asked to complete the Secure Non-Striving subscale of the Striving to Avoid Inferiority Scale (SAIS-SNS; Gilbert et al., 2007). This is a 12-item instrument that assesses the degree to which individuals feel secure with their social position and feel acceptance from others, rather than feeling under pressure to compete (sample item: "Win or lose, people accept me anyway"). All items were rated on a 5-point scale ranging from 1 (*never*) to 5 (*always*). An overall score was computed as the mean of all 12 items, such that higher scores reflect greater secure non-striving. Scores on the SAIS have adequate internal consistency and construct validity in English-speaking samples (Gilbert et al., 2007). McDonald's ω for SAIS-SNS scores was .94 (95% CI = .93, .95).

3.1.2.7. Self-compassion.

To measure self-compassion, we used the 12-item Self-Compassion Scale-Short Form (SCS-SF; Raes et al., 2011), which measures aspects of self-kindness, common humanity, and mindfulness (sample item: "When something upsets me I try to keep my emotions in balance"). All items were rated on a 5-point scale, ranging from 1 (*almost never*) to 5 (*almost always*). An overall score was computed as the mean of all items following reverse-coding of six items, with higher scores reflecting greater self-compassion. Overall scores on the SCS-SF are very strongly correlated with scores on the full form and also demonstrate adequate internal consistency in English-speaking samples (Raes et al., 2011). McDonald's ω for SCS-SF scores was .87 (95% CI = .85, .89).

3.1.2.8. Self-esteem.

Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), which indexes an individual's global self-esteem (sample item: "I feel I have a number of good qualities"). Items were rated on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). An overall score was computed as the mean of all 10 items following reverse-coding of 5 negatively worded items. Higher RSES scores reflect greater self-esteem. RSES scores have been found to have adequate internal consistency and good patterns of construct validity in English-speaking samples (e.g., Robins et al., 2001). McDonald's ω for RSES scores was .92 (95% CI = .90, .94).

3.1.2.9. Impression management.

Impression management was measured using the 20-item Impression Management subscale of the Balanced Inventory of Desirable Responding–6 (BIDR-IM; Paulhus, 1994), which assesses participants' over-reporting of desirable behaviours and under-reporting undesirable behaviours (sample item: "I always obey laws, even if I'm unlikely to get caught"). All items were rated on a 7-point scale, ranging from 1 (*not at all true*) to 7 (*very true*). An overall score was computed as the mean of all items following reverse-coding of 10 items. Higher

scores on this measure reflect greater impression management. Scores on the BIDR-IM have

been shown to have adequate internal consistency, test-retest reliability up to 5 weeks, and

adequate construct validity (Paulhus, 1994). McDonald's ω for BIDR-IM scores was .77

(95% CI = .73, .80).

3.1.2.10. Demographics.

Participants were asked to provide their demographic details consisting of gender identity,

sexual orientation, relationship status, highest educational qualification, age, and race, which

were used for descriptive purposes. Height and weight data were also collected and used to

compute self-reported BMI as kg/m^2.

3.1.3. Procedures.

Procedures for Study 2 were identical to those reported in Section 2.2.1.3. with the following

exceptions: (a) data collection took place on June 21-22, 2020; (b) participants were only

eligible if they had not previously taken part in Study 1 (cross-checked using IP addresses

and Prolific IDs); (c) we included an attention check item embedded half-way through the

survey, and; (d) participants were paid £1.12.

3.1.4. Analytic strategy.

Thirty-nine participants had improbable BMI values, so these were recoded as missing values

and replaced using the mean replacement technique. There were no other missing data. To

conduct CFA, we used the *lavaan* (Rosseel, 2012), *semTools* (Jorgensen et al., 2018), and

MVN packages (Korkmaz et al., 2014) with *R* (*R* development Core Team, 2014). Our plan

was to test a unidimensional model of BAOS-2 scores as identified in the EFAs in Study 1.

Assessment of the data for normality indicated that they were neither univariate (Shapiro-

Wilks $p < .001$) nor multivariate normal (Mardia's skewness = 1496.03, $p < .001$, Mardia's

kurtosis = 36.72, $p < .001$), so parameter estimates were obtained using the robust maximum

likelihood method and fit indices (see Section 2.2.1.4.) were interpreted with the Satorra-

Bentler correction applied (Satorra & Bentler, 2001).

To examine gender invariance of BAOS-2 scores, we conducted multi-group CFA (Chen, 2007). Measurement invariance was assessed at the configural, metric, and scalar levels. Configural invariance implies that the latent BAOS-2 variable and the pattern of loadings of the latent variable on indicators are similar across gender (i.e., the unconstrained latent model should fit the data well in both groups). Metric invariance implies that the magnitude of the loadings is similar across gender. This is tested by comparing two nested models consisting of a baseline model and an invariance model. Because the $\Delta\chi^2$ statistic is overly stringent criterion invariance (Meade et al., 2008), we used $\Delta CFI \geq -.01$ as an indicator of metric invariance (Cheung & Rensvold, 2002). Lastly, scalar invariance implies that both the item loadings and item intercepts are similar across gender and is examined using the same nested-model comparison strategy as with metric invariance (Chen, 2007). For scalar invariance, Chen (2007) suggested that invariance is supported when $\Delta CFI \geq -.01$ *and* $\Delta RMSEA \geq .015$ *or* $\Delta SRMR \geq .030$, although other scholars suggest that $\Delta CFI < -.01$ is sufficient (Cheung & Rensvold, 2002).

The internal consistency of BAOS-2 scores in this sample was assessed using McDonald's ω and its associated 95% CI. Evidence of convergent validity was assessed using the Fornell-Larcker criterion (Fornell & Larcker, 1981), with average variance extracted (AVE) values of $\geq .50$ considered adequate (Malhotra & Dash, 2011) and meaning that a latent variable is able to explain more than half of the variance of its indicators on average. We aimed to test for gender differences on BAOS-2 scores using an independent-samples *t*-test only if scalar or partial scalar invariance were established. To assess construct validity, we examined bivariate correlations between BAOS-2 scores and scores on the additional measures included in the survey. Based on Cohen (1992), values $\leq .10$ were considered weak, $\sim .30$ were considered moderate, and $\sim .50$ were considered strong correlations. Incremental validity was assessed by examining whether BAOS-2 scores

predicted body appreciation, functionality appreciation, and self-esteem over-and-above the variance accounted for the SATAQ-4 variables, and would be supported if we found a statistically significant increment in Adj. R^2 in the regression.

3.2. Results and Discussion

3.2.1. Confirmatory factor analysis.

CFA indicated that fit of the 1-factor model of BAOS-2 score was acceptable for some indices, but less-than-ideal for others: $SB\chi^2(65) = 220.08$, $p < .001$, $SB\chi^2_{normed} = 3.39$, robust RMSEA = .092 (90% CI = .079, .106), SRMR = .043, robust CFI = .932, robust TLI = .919. Modification indices were, therefore, consulted to improve model fit, with modification being based on the results from a likelihood ratio test. Error covariances were freed between Items #1 and 2 (MI = 64.97), which resulted in a significantly improved model fit, $\chi^2(1) = 66.73$, $p < .001$, with all indices now within an acceptable range: $SB\chi^2(64) = 177.53$, $p < .001$, $SB\chi^2_{normed} = 2.77$, robust RMSEA = .079 (90% CI = .065, .093), SRMR = .039, robust CFI = .951, robust TLI = .940. The standardised estimates of factor loadings were all adequate (see Figure 1). The convergent validity for this model was adequate, as AVE = .55, and internal consistency of scores was adequate in women ($\omega = .94$, 95% CI = .93, .95), men ($\omega = .94$, 95% CI = .92, .95), and the total sample ($\omega = .94$, 95% CI = .93, .95).

3.2.2. Gender invariance.

We tested for gender invariance based on the 1-factor model of BAOS-2 scores. As reported in Table 2, all indices suggested that configural, metric, and scalar invariance was supported across gender. Given these results, we computed an independent-samples t-test with BAOS-2 scores as the criterion variable and gender as the predictor variable. An independent-samples t-test indicated that there was no significant difference in BAOS-2 scores between women ($M = 3.48$, $SD = 0.82$) and men ($M = 3.44$, $SD = 0.81$), $t(421) = 0.50$, $p = .621$, $d = 0.05$.

3.2.3. Construct validity.

We hypothesised that BAOS-2 scores would be moderately correlated to scores on measures of positive body image and weakly correlated with self-reported BMI. BAOS-2 scores were positively and moderately with body appreciation and functionality appreciation scores in women and men, respectively (see Table 3). In addition, BAOS-2 scores were negatively and moderately correlated with BMI in women and weakly in men. These findings uphold the construct validity of BAOS-2 scores.

3.2.4. Criterion-related validity.

We hypothesised – and found – that BAOS-2 scores were moderately and negatively correlated with pressure to internalise sociocultural appearance ideals and the internalisation of weight bias, respectively (see Table 3). In addition, BAOS-2 scores were positively and moderately correlated with self-esteem and self-compassion in both women and men, and were also positively and strongly correlated with secure non-striving in women and men (see Table 3). These findings uphold the criterion-related validity of BAOS-2 scores.

3.2.5. Discriminant validity.

As hypothesised, BAOS-2 scores were only weakly correlated with impression management scores, with associations not reaching significance (see Table 3). These findings uphold the discriminant validity of BAOS-2 scores.

3.2.6. Incremental validity.

We hypothesised that BAOS-2 scores would predict unique variance in body appreciation, functionality appreciation, and self-esteem, respectively, above-and-beyond associations with pressure to internalise appearance ideals. Results showed that BAOS-2 scores accounted for significant added variance in the prediction of body appreciation (see Table 4), functionality appreciation (see Table 5), and self-esteem (see Table 6) in both women and men. As can be seen in Tables 4-6, there was evidence not only that the addition of BAOS-2 scores was statistically significant, but also that the effect sizes were moderate-to-large in practical terms

(Cohen, 1992). Multicollinearity was not a limiting factor in either of the regressions (all variance inflation factors < 1.86, with values < 10 indicative of collinearity; Hair et al., 2009; O'Brien, 2007). These results provide support for the incremental validity of BAOS-2 scores.

3.2.7. Discussion.

The results of Study 2 provide support for the psychometric properties of the BAOS-2. First, the results of CFA indicated that a unidimensional model of the BAOS-2 with all 13 items had adequate fit, albeit following estimation of modification indices for one pair of items. Beyond factorial validity, the results also indicated that BAOS-2 scores were invariant across gender and had adequate internal consistency, convergent validity, construct validity, criterion-related validity, and discriminant validity. Evidence of incremental validity was also observed in both women and men. Collectively, these multiple forms of validity provide strong evidence for the construct validity of the BAOS-2 (Campbell & Fiske, 1959; Hinkin, 1998).

4. Study 3: Cross-Validating the Factor Structure of the BAOS-2

Although the results of Study 2 indicated a unidimensional model of BAOS-2 scores had adequate fit, it was necessary to estimate modification indices between Items #1 and 2. The estimation of modification indices to re-specify less-than-adequately-fitting models is commonly recommended (e.g., Saris et al., 2009; Whittaker, 2012), but the method has also been criticised as being atheoretical (i.e., it represents a *post hoc*, data-driven modification of the hypothesised model; e.g., MacCallum et al., 1992; Kaplan, 2009; Kline, 2005). One way to correct for this and to help determine the extent to which modification indices represent true (rather than idiosyncratic) characteristics of a dataset is to cross-validate the final model in a further sample (Peterson, 2019; Worthington & Whittaker, 2006). This was the aim of Study 3; specifically, we cross-validated the hypothesised model of BAOS-2 scores in a sample of adults from the United States. Beyond cross-validation, doing so also allowed us to

examine fit of the unidimensional model in a sample that was culturally similar but nationally

distinct to that utilised in Studies 1 and 2, to examine gender invariance in a new sample, and

to examine invariance of BAOS-2 scores across the United States and United Kingdom.

Here, we hypothesised that a unidimensional model of BAOS-2 scores would have adequate

fit, possibly following the estimation of modification indices, and that scores would be

invariant across gender and across the two nations.

4.1. Method

4.1.1. Participants.

The sample for Study 3 consisted of 503 individuals (women $n = 251$, men $n = 252$)

from the United States. Participants ranged in age from 18 to 77 years ($M = 35.95$, $SD =$

11.80) and in self-reported BMI from 15.40 to 49.31 kg/m^2 ($M = 27.40$, $SD = 5.96$). The

majority of participants were heterosexual (88.9%; bisexual = 5.8%; gay/lesbian = 1.6%;

pansexual = 1.6%; asexual = 1.4% other = 0.8%) and White (77.7%; African American =

8.5%; Asian American = 5.4%; Latina/Latino/Latinx = 4.0%; Multiracial = 3.8%; Native

American = 0.2%; other = 0.4%). In terms of relationship status, 24.1% of participants were

single, 11.5% were partnered but not cohabiting, 13.5% were partnered and cohabiting,

44.7% were married, and the remainder were of another status. In terms of education, 20.5%

had completed high school, 50.1% had an undergraduate degree, 24.3% had a postgraduate

degree, 2.4% were in full-time education, and 2.8% had some other qualification.

4.1.2. Measures.

Participants were asked to complete the BAOS-2 and provide their demographic

details consisting of gender identity, sexual orientation, relationship status, highest

educational qualification, age, race, height, and weight. Height and weight data were used to

compute self-reported BMI as kg/m^2.

4.1.3. Procedures.

Procedures for this study were identical to those reported in Section 3.1.3. with the following exceptions: (a) inclusion criteria included being a citizen and resident of the United States, being of adult age, and being fluent in English; (b) data collection took place on June 23-24, 2020; (c) given the brief survey, no attention check item was included, and (d) participants were paid $0.58.

4.1.4. Analytic strategy.

Forty-four participants were missing height and/or weight data or had improbable BMI values, so these were recoded as missing values as replaced using the mean replacement technique. In addition, there were nine missing BAOS-2 data-points. These data were missing completely at random as determined by Little's (1988) Missing Completely at Random (MCAR) test, $\chi^2(84) = 79.28$, $p = .625$, and were replaced using the mean replacement technique. CFA was conducted using the same analytic strategy as reported in Section 3.1.4. We examined the fit of the hypothesised unidimensional model of BAOS-2 scores and estimated modification indices as necessary. Assessment of the data for normality indicated that they were neither univariate (Shapiro-Wilks $p < .001$) nor multivariate normal (Mardia's skewness = 1657.92, $p < .001$, Mardia's kurtosis = 52.97, $p < .001$), so parameter estimates were obtained using the robust maximum likelihood method and fit indices (see Section 2.2.1.4.) were interpreted with the Satorra-Bentler correction applied (Satorra & Bentler, 2001). To examine gender invariance of BAOS-2 scores, we followed the analytic strategy reported in Section 3.1.4. Additionally, we examined invariance across national group using the United Kingdom dataset from Study 2. Were invariance established, we aimed to follow this up with a 2 × 2 analysis of variance (ANOVA), with gender and national group as the independent variables and BAOS-2 scores as the dependent variable.

4.2. Results and Discussion

4.2.1. Confirmatory factor analysis.

CFA indicated that fit of the 1-factor model of BAOS-2 scores had a good fit across all indices: $SB\chi^2(65) = 157.17$, $p < .001$, $SB\chi^2_{normed} = 2.42$, robust RMSEA = .070 (90% CI = .056, .084), SRMR = .029, robust CFI = .967, robust TLI = .961.The standardised estimates of factor loadings were all adequate (see Figure 2). The convergent validity for this model was adequate, as AVE = .61, and internal consistency of scores was adequate in women (ω = .96, 95% CI = .95, .97), men (ω = .94, 95% CI = .92, .95), and the total sample (ω = .95, 95% CI = .94, .96). Mean BAOS-2 scores in this sample were 3.62 (SD = 0.86) in women and 3.53 (SD = 0.78) in men.

4.2.2. Further analyses.

BAOS-2 scores in this sample were significantly associated with BMI in women, $r = -.19$, $p = .002$, and men, $r = -.20$, $p = .001$, providing evidence of construct validity. Next, we tested for gender invariance based on the 1-factor model of BAOS-2 scores in the United States sample. As reported in Table 7, all indices suggested that configural, metric, and scalar invariance was supported across gender. Next, we tested for invariance across national group using the United Kingdom data from Study 2. As reported in Table 8, all indices suggested that configural, metric, and scalar invariance was supported across national group. We, therefore, computed a 2 × 2 ANOVA to examine gender and national differences in BAOS-2 scores. There was no significant nation by gender interaction, $F(1, 922) = 0.18$, $p = .669$, $\eta_p^2 < .01$, and no main effect of gender, $F(1, 922) = 1.30$, $p = .255$, $\eta_p^2 < .01$. Participants from the United States had significantly higher BAOS-2 scores than their peers from the United Kingdom, $F(1, 922) = 4.87$, $p = .028$, $\eta_p^2 < .01$, but the effect size of the difference was negligible.

4.2.3. Discussion.

The results of Study 3 indicated that a unidimensional model of BAOS-2 scores had adequate fit in an online sample of adults from the United States. Indeed, adequate fit in this study was

achieved without the need to estimate modification indices. Given that the estimation of limited modification indices is unlikely to reflect deeper factorial concerns (Whittaker, 2012), we are confident – based on the collective results of the three studies reported here – that BAOS-2 scores can be considered unidimensional. Additionally, the results provided evidence of the construct validity of BAOS-2 scores in a new sample, insofar as scores were significantly and negatively associated with self-reported BMI. Finally, the results also provided evidence of invariance across gender and national group. Between-group comparisons indicated no gender differences and, while there was a significant difference across national groups, the effect size of the difference was negligible.

5. General Discussion

Across three studies, we reported on the development and psychometric evaluation of the BAOS-2 in online samples of adults from the United Kingdom and United States. Overall, our results supported a unidimensional, 13-item model of BAOS-2 scores, which was invariant across gender and national groups. Results across all three studies also indicated that BAOS-2 scores had adequate internal consistency coefficients, as determined using McDonald's ω, and construct validity determined through negative associations with self-reported BMI. In addition, the results of Studies 1 and 2 provided evidence of adequate 4-week test-retest reliability and adequate validity estimates (i.e., construct, criterion, discriminant, and incremental). In short, our results suggest that the BAOS-2 can be considered a psychometrically-sound measure that can be used in future research, at least in English-speaking populations.

Importantly, the BAOS-2 improves upon a number of limitations of the original BAOS. First, consistent with our revised definition of body acceptance by others (see Section 1.1.), participants completing the BAOS-2 are asked to consider global body acceptance (i.e., beyond a narrow focus on body size/weight acceptance). We suggest that this increases the

likelihood that the BAOS-2 items will be relevant and meaningful for a range of social

identity groups (cf. Tiggemann, 2015, 2019). Second, the BAOS-2 is a generalised measure

of perceived – rather than enacted – body acceptance by others. This is important because

perceived and enacted body acceptance by others may sometimes diverge, and focusing on

subjective appraisals likely provides a purer indicator of the forms of body acceptance by

others that have upstream effects on positive body image (cf. Helgeson, 1993). Third, the

BAOS-2 items do not refer to specific targets (e.g., friends, family members, mass media);

instead, participants are asked to consider important others (i.e., important people, groups, or

communities in their lives) when completing the BAOS-2. This is important as it helps to

minimise possible discrepancies between generalised perceptions of body acceptance by

others and perceptions of how specific others appraise the self (cf. Malloy & Cillessen,

2008), and helps focus respondent attention on meaningful and personified others.

Our results indicate that the BAOS-2 measures body acceptance by others as a

unidimensional construct. This is important because, in contrast to the BAOS – where

problems confirming the fit of a unidimensional model of scores have been noted (Swami,

Furnham et al., 2020; Swami, Todd et al., 2020) – both EFA and CFA results in the present

studies supported a clearer unidimensional structure of scores in women and men. In Study 2,

modification indices had to be estimated between one pair of items to achieve adequate fit,

but – given the findings of Study 3 – we suggest that this was likely an idiosyncratic finding

that does not detract from the overall conceptualisation of BAOS-2 scores as unidimensional

(cf. Cole et al., 2007). Indeed, we suggest that a strength of the present work was the

development of a well-specified measurement model that is unlikely to be misspecified.

Further, while the BAOS-2 does comprise three items more than the BAOS, participant

burden in terms of completion time and fatigue is unlikely to be substantively different

compared to the BAOS. In a similar vein, we caution against the use of shortened forms of

the BAOS-2 in the absence of further psychometric analyses. In our datasets, all 13 items

loaded strongly on the core factor and none of the items met commonly used thresholds for

item trimming (e.g., Henson & Roberts, 2006; Park et al., 2002). Put differently, we suggest

that all items of the BAOS-2 contribute something meaningful and essential to the

measurement of body acceptance by others and should be included in future research.

The importance of measuring body acceptance by others is underlined by the findings

of Study 2. Specifically, consistent with the acceptance model of intuitive eating (Avalos &

Tylka, 2006) and with previous research (Andrew et al., 2016b; Augustus-Horvath & Tylka,

2011; Swami et al., 2017, 2018; Tylka & Homan, 2015; Waring & Kelly, 2020), we found

that body acceptance by others was significantly associated with scores on measures of

positive body image (i.e., body appreciation and functionality appreciation). As suggested by

Avalos and Tylka (2006), greater body acceptance by others likely facilitates greater

appreciation of how the body feels and functions, rather than what it looks like. To the extent

that social perceptions of others are associated with personal relationships (Cillessen &

Bellmore, 1999), we further suggest that individuals who perceive greater body acceptance

by others may have greater opportunities to test out behaviours reflective of body acceptance

and thus experience their bodies as being truly accepted by others (cf. Badalay et al., 2012;

Stephens et al., 2016). Conversely, individuals who perceive lower body acceptance by

others may have few opportunities to develop positive body image and may also deprive

themselves of social interactions that could provide real feedback from others, which

reinforces perceptions of low body acceptance by others (cf. Lynch et al., 2016; Stephens et

al., 2016).

The results of Study 2 also showed that body acceptance by others was significantly

associated with self-esteem, which highlights broader adaptive properties of the construct *vis-

à-vis* psychological well-being. In addition, after accounting for the effects of perceived

pressure to attain sociocultural ideals of appearance, greater body acceptance by others was associated with higher levels of positive body image. In contrast, body acceptance by others was not significantly associated with impression management, which suggests that respondents with greater body acceptance by others were not merely embellishing their scores to present more favourable impressions of themselves. Finally, BAOS-2 scores were consistently and negatively associated with self-reported BMI across all three studies, which is consistent with the predictions derived from the acceptance model of intuitive eating (Avalos & Tylka, 2006). More specifically, this finding likely reflects the cultural valuation of female (e.g., Swami et al., 2010) and male (e.g., Swami & Tovée, 2005) leanness found in many socioeconomically developed settings. Individuals who more closely meet this cultural ideal may, therefore, be more likely to perceive greater body acceptance by others. Collectively, these results suggest that body acceptance by others, as assessed using the BAOS-2, is an important construct to consider in relation to positive body image and psychological well-being more generally.

The results of Studies 2 and 3 also indicated that BAOS-2 scores were invariant across gender. This is an important contribution to knowledge particularly because studies using the BAOS have not established gender invariance, an important precondition for between-group comparisons (Chen, 2007). Indeed, given that one study has reported that the factor structure of BAOS scores is divergent across women and men (Swami, Todd et al., 2020), gender invariance of BAOS scores appears unlikely. Here, we found no significant differences in BAOS-2 scores between women and men in Studies 2 and 3. Although we had no *a priori* hypotheses concerning gender differences, this is an important finding that warrants further investigation in future work. That is, it will be important to determine how the lack of gender differences in body acceptance by others relates to the gendered difference in positive body image, where men typically report greater body appreciation than women (for a meta-

analysis, see He et al., 2020). In Study 3, we also established that BAOS-2 scores were invariant across two national groups, namely the United Kingdom and the United States. While respondents from the United States had significantly higher body acceptance by others than participants from the United Kingdom, effect size of the difference was negligible. That is, participants from both nations had very similar BAOS-2 scores, which likely reflects the similar bodily pressures that individuals in both nations experience.

5.1. Directions for Future Research

A number of limitations of the present study should be acknowledged. First, although recruitment on Prolific allowed us to avoid the limitations associated with college samples and despite Prolific respondents being demographically diverse (Palan & Schitter, 2018; Peer et al., 2017), our samples should not be considered representative of their respective nations. In a similar vein, because the majority of our participants across all three studies identified as White, our subsample sizes were not sufficiently large to consider invariance across race. Given that previous studies have shown factors associated with body acceptance by others (e.g., intuitive eating) to be factorially problematic across race (e.g., Khalsa et al., 2019), considering the extent to which BAOS-2 are invariant across race in the United Kingdom and United States is an important step for future research. Likewise, future research should also consider the extent to which the psychometric properties of the BAOS-2 can be upheld in diverse social identity (e.g., sexual orientation, socioeconomic status) and national groups. The latter should be facilitated by the fact that we explicitly designed the BAOS-2 to exclude any idiomatic expressions that may be difficult to translate into other languages.

Second, it should be noted that the BAOS-2 items were designed to measure *perceived* body acceptance by others. That is, consistent with other research suggesting that perceived, rather than enacted, social support is more strongly associated with psychological health outcomes (e.g., Cohen & Wills, 1985; McDowell & Serovich, 2007; Wethington & Kessler,

1986), the focus of the BAOS-2 is on subjective appraisals of body acceptance by others. This, therefore, means that the BAOS-2 should not be used as a measure of enacted (or actual) body acceptance by others, which should be operationalised separately if desired. Similarly, unlike the BAOS, the BAOS-2 does not refer to specific targets, which may limit its relevance for scholars wishing to measure body acceptance by specific others (e.g., family members, peers). The BAOS-2 is also unable to distinguish whether respondents feel body acceptance from, say family members, but not friends. In such cases, it may be possible to develop a distinct measure of body acceptance by specific others by adapting items from the BAOS-2 (e.g., Item #12: "I can count on *my mother* to accept my body" with words in italics representing a specific target). The items of the BAOS-2 could also be similarly adapted to refer to specific parts of the body if desired (e.g., "I can count on important others to accept my *skin tone*"). However, we caution that scholars using the BAOS-2 in this manner should also amend instructions to participants and consider the psychometric properties of any newly designed measure.

Third, while we have constructed the BAOS-2 in line with our expert-approved definition of body acceptance by others, we cannot be certain at this stage that the BAOS-2 comprehensively measures the latent construct. That is, while our definition of body acceptance by others is based on extant quantitative and qualitative research (see Section 1.1.) and is in line with expert opinion, it is possible that body acceptance by others involves components that are not assessed by the BAOS-2. That is, while a unidimensional model is useful because it lowers the probability of interpretational confounding by eliminating sources of conceptual contamination and increases the likelihood of drawing accurate nomological conclusions (Edwards & Bagozzi, 2000), we cannot rule out the possibility that the construct of body acceptance by others will be developed further in multidimensional directions. This is an issue that may be considered further as understandings of the nature and

outcomes of body acceptance by others is more fully investigated. Finally, it should be noted that the present studies were correlational in nature and, thus, the direction of causation between variables – particularly in Study 2 – should be considered with caution. While we have interpreted our results in line with extent theorising from the acceptance model of intuitive eating (Avalos & Tylka, 2006), longitudinal research is necessary to examine the extent to which BAOS-2 scores are causally linked with outcomes (e.g., Andrew et al., 2016a).

5.2. Conclusion

The results of the present studies suggest that the BAOS-2 is a psychometrically valid tool for the assessment of body acceptance by others. We further suggest that the BAOS-2 has a number of advantages over the BAOS, not just in terms of improved psychometrics, but also in terms of the focus on perceive and generalised body acceptance by others. As such, we suggest that the BAOS-2 can be incorporated into research and practice aimed understanding and promoting more positive body image. In terms of the former, the BAOS-2 may provide a useful and psychometrically valid instrument in research designed to examine the acceptance model of intuitive eating. Likewise, the BAOS-2 could also be used in intervention studies designed to promote more positive body image, particularly within a more holistic context that considers the ways in which positive body image is entwined with external relationships and systems (Tiggemann, 2011, 2019). Finally, in terms of clinical practise, the BAOS-2 could be used in tandem with other measures to assess treatment effectiveness or to develop treatment programmes that effectively consider the ways in which relationships with others influence bodily experiences, although further validation work is necessary before the BAOS-2 is deployed in such "high-stakes" settings (Ziegler et al., 2015). In summary, we hope the BAOS-2 is included in the arsenal of scholars examining and promoting more positive body image in diverse populations.

Acknowledgements

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Table 1

Body Acceptance by Others Scale-2 (BAOS-2) Items and Associated Item-Factor Loadings

for Women and Men

BAOS-2 Items	Women	Men
1. I feel acceptance from important others regarding my body.	.62	.65
2. I believe that important others value my body as it is, without trying to change it.	.76	.74
3. I believe that important others trust me to do what is best for myself regarding my body.	.63	.64
4. I believe that important others are accepting of my body without comparing me to other people.	.79	.74
5. I don't have to change my body to feel accepted by important others.	.71	.61
6. I believe that important others embrace and cherish my body.	.76	.74
7. Important others help me feel calm and contented toward my body, rather than worried about it.	.81	.81
8. I believe that important others respect my body.	.79	.84
9. I get the feeling that important others like my body as it is, even if they don't say anything.	.79	.81
10. I believe that important others appreciate my unique body.	.80	.81
11. Important others help me feel comfortable regarding my body.	.86	.81
12. I can count on important others to accept my body.	.88	.82
13. Important others refrain from criticising or critiquing my body.	.69	.60

Table 2

Measurement Invariance Across Gender in Study 2.

Model	SBχ^2	df	Robust CFI	Robust RMSEA	SRMR	Model Comparison	ΔSBχ^2	ΔRobust CFI	ΔRobust RMSEA	ΔSRMR	Δdf	p
Configural	289.37	130	.939	.076	.046							
Metric	307.72	142	.937	.074	.059	Configural vs metric	18.35	.002	.002	.013	12	.221
Scalar	329.86	154	.933	.073	.061	Metric vs scalar	22.14	.004	.001	.002	12	.070

Note. SB = Satorra-Bentler; CFI = Comparative fit index; RMSEA = Steiger-Lind root mean square error of approximation; SRMR = Standardised root mean square residual.

Table 3

Correlations between Body Acceptance by Others-2 Scores and Scores on All Other Variables Included in Study 2, with Women in the Top Diagonal and Men in the Bottom Diagonal.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Body acceptance by others		.40**	.38**	-.36**	-.21*	-.24**	-.41**	.38**	.26**	.46**	.11	-.32**
(2) Body appreciation	.48**		.54**	-.21*	-.14*	-.35**	-.76**	.65**	.58**	.31**	.23**	.43**
(3) Functionality appreciation	.47**	.39**		-.16*	-.18*	-.04	-.39**	.51**	.41**	.44**	.13	-.19*
(4) Family pressure	-.32**	-.17*	-.25**		.49**	.36**	.38**	-.10	-.04	-.22*	-.23*	.31**
(5) Peer pressure	-.30**	-.17*	-.21*	.62**		.35**	.27**	-.14*	-.04	-.27**	-.22**	.19*
(6) Media pressure	-.28**	-.19*	-.01	.46**	.52**		.47**	-.23*	-.33**	-.14*	-.33**	.29**
(7) Weight bias internalization	-.46**	-.54**	-.26**	.45**	.44**	.45**		-.50**	-.43**	-.26**	-.27**	.56**
(8) Self-esteem	.40**	.61**	.36**	-.20*	-.23*	-.32**	-.55**		.70**	.56**	.18*	-.17*
(9) Self-compassion	.24**	.46**	.25**	-.17*	-.23*	-.32**	-.40**	.72**		.46**	.23**	-.15*
(10) Secure non-striving	.53**	.39**	.48**	.29**	-.30**	-.33**	-.35**	.60**	.54**		.18*	.01
(11) Impression management	.12	.15*	-.04	-.14*	-.13	.35**	-.20*	.23**	.29**	.19*		-.15*
(12) Body mass index	-.17*	-.24**	-.10	.26**	.21**	.15*	.41**	-.09	-.06	-.01	-.19*	

Note. Women *n* = 212, men *n* = 211. **p* < .05, ***p* < .001.

Table 4

Results of Multiple Hierarchical Regression Analyses for the Prediction of Body Appreciation.

Step	Variable	Women ($n = 212$)					Men ($n = 211$)				
		B	SE	β	t	p	B	SE	β	t	p
1		$F(3, 211) = 10.51, p < .001$, Adj. $R^2 = .12$					$F(3, 210) = 3.38, p = .019$, Adj. $R^2 = .03$				
	Family pressure	-.07	.05	-.11	-1.40	.164	-.06	.07	-.08	-0.39	.394
	Peer pressure	.02	.06	.02	0.30	.766	-.05	.07	-.07	-0.71	.478
	Media pressure	-.20	.04	-.32	-4.53	< .001	-.07	.05	-.12	-1.47	.144
2		$F(4, 211) = 15.23, p < .001$, Adj. $R^2 = .22$ ($\Delta F\ p < .001$)					$F(4, 210) = 16.01, p < .001$, Adj. $R^2 = .22$ ($\Delta F\ p < .001$)				
	Family pressure	-.01	.05	-.01	-0.04	.967	-.01	.06	-.01	-0.16	.873
	Peer pressure	.02	.06	.03	0.41	.680	-.01	.06	-.01	-0.12	.905
	Media pressure	-.17	.04	-.28	-4.14	< .001	-.04	.05	-.06	-0.79	.432
	Body acceptance by others	.33	.07	.34	5.07	< .001	.46	.06	.47	7.17	< .001

Table 5

Results of Multiple Hierarchical Regression Analyses for the Prediction of Functionality Appreciation.

Step	Variable	Women ($n = 212$)					Men ($n = 211$)				
		B	SE	β	t	p	B	SE	β	t	p
1		$F(3, 211) = 3.16, p = .026$, Adj. $R^2 = .03$					$F(3, 210) = 6.74, p < .001$, Adj. $R^2 = .08$				
	Family pressure	-.08	.06	-.11	-1.38	.168	-.17	.06	-.24	-2.74	.007
	Peer pressure	-.13	.07	-.15	-1.88	.061	-.11	.07	-.15	-1.69	.092
	Media pressure	.03	.05	.06	0.73	.464	.10	.05	.17	2.19	.030
2		$F(4, 211) = 10.33, p < .001$, Adj. $R^2 = .15$ ($\Delta F\, p < .001$)					$F(4, 210) = 19.26, p < .001$, Adj. $R^2 = .26$ ($\Delta F\, p < .001$)				
	Family pressure	-.01	.05	-.01	-0.08	.934	-.11	.06	-.15	-1.92	.057
	Peer pressure	-.12	.06	-.14	-1.91	.058	-.07	.06	-.10	-1.21	.229
	Media pressure	.06	.04	.10	1.44	.151	.14	.04	.23	3.26	.001
	Body acceptance by others	.38	.07	.38	5.52	< .001	.43	.06	.46	7.20	< .001

Table 6

Results of Multiple Hierarchical Regression Analyses for the Prediction of Self-Esteem.

Step	Variable	Women ($n = 212$)					Men ($n = 211$)				
		B	SE	β	t	p	B	SE	β	t	p
1		$F(3, 211) = 4.04$, $p = .008$, Adj. $R^2 = .04$					$F(3, 210) = 8.25$, $p < .001$, Adj. $R^2 = .09$				
	Family pressure	.01	.04	.01	0.12	.903	-.02	.05	-.04	-0.45	.447
	Peer pressure	-.04	.05	-.07	-0.85	.394	-.04	.06	-.07	-0.76	.447
	Media pressure	-.10	.04	-.21	-2.79	.006	-.14	.04	-.26	-3.36	.001
2		$F(4, 211) = 11.18$, $p < .001$, Adj. $R^2 = .16$ ($\Delta F\ p < .001$)					$F(4, 210) = 13.26$, $p < .001$, Adj. $R^2 = .19$ ($\Delta F\ p < .001$)				
	Family pressure	.07	.04	.13	1.64	.103	-.02	.05	-.03	-0.31	.759
	Peer pressure	-.04	.05	-.06	-0.81	.421	-.02	.05	-.03	-0.33	.741
	Media pressure	-.08	.03	-.16	-2.97	.023	-.11	.04	-.22	-2.94	.004
	Body acceptance by others	.29	.05	.38	5.55	< .001	.28	.06	.34	5.04	< .001

Table 7

Measurement Invariance Across Gender in Study 3.

Model	SBχ^2	*df*	Robust CFI	Robust RMSEA	SRMR	Model Comparison	ΔSBχ^2	ΔRobust CFI	ΔRobust RMSEA	ΔSRMR	Δ*df*	*p*
Configural	219.95	130	.974	.052	.033							
Metric	237.54	142	.973	.052	.047	Configural *vs.* metric	17.59	.001	< .001	.014	12	.215
Scalar	264.51	154	.969	.053	.050	Metric *vs.* scalar	26.97	.004	.001	.003	12	.001

Note. SB = Satorra-Bentler; CFI = Comparative fit index; RMSEA = Steiger-Lind root mean square error of approximation; SRMR = Standardised root mean square residual.

Table 8

Measurement Invariance Across National Group in Study 3.

Model	SBχ^2	*df*	Robust CFI	Robust RMSEA	SRMR	Model Comparison	ΔSBχ^2	ΔRobust CFI	ΔRobust RMSEA	ΔSRMR	Δ*df*	*p*
Configural	327.87	130	.960	.064	.033							
Metric	398.18	142	.958	.062	.044	Configural *vs.* metric	70.31	.002	.002	.011	12	.073
Scalar	441.66	154	.953	.064	.047	Metric *vs.* scalar	43.48	.005	.002	.003	12	< .001

Note. SB = Satorra-Bentler; CFI = Comparative fit index; RMSEA = Steiger-Lind root mean square error of approximation; SRMR =

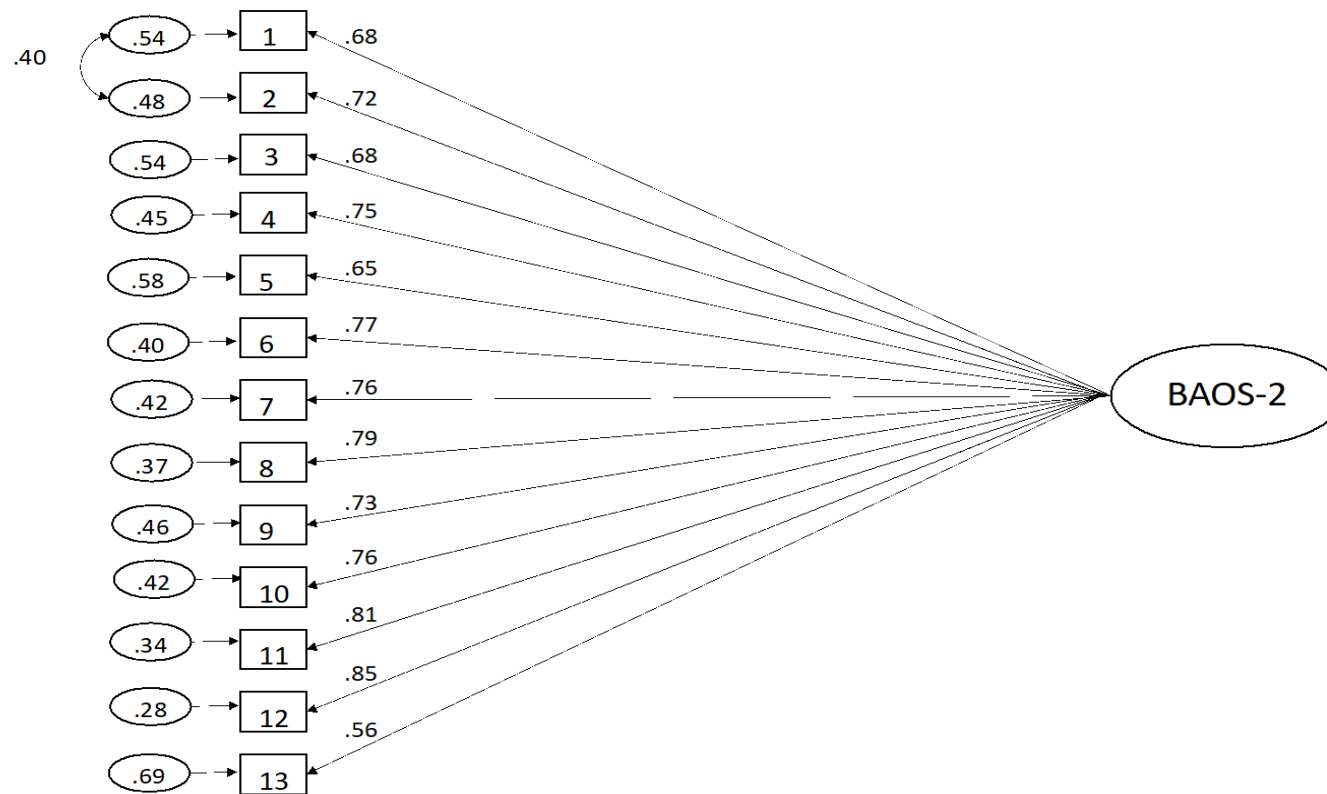Standardised root mean square residual.

Figure 1

Path diagram and estimates for the 1-dimensional model of Body Acceptance by Others-2 (BAOS-2) scores in Study 2. The large oval is the latent construct, with the rectangles representing measured variables, and the small circles with numbers representing the residual variables (variances). The path factor loadings are standardised with significance levels were determined by critical ratios (all $p < .001$).
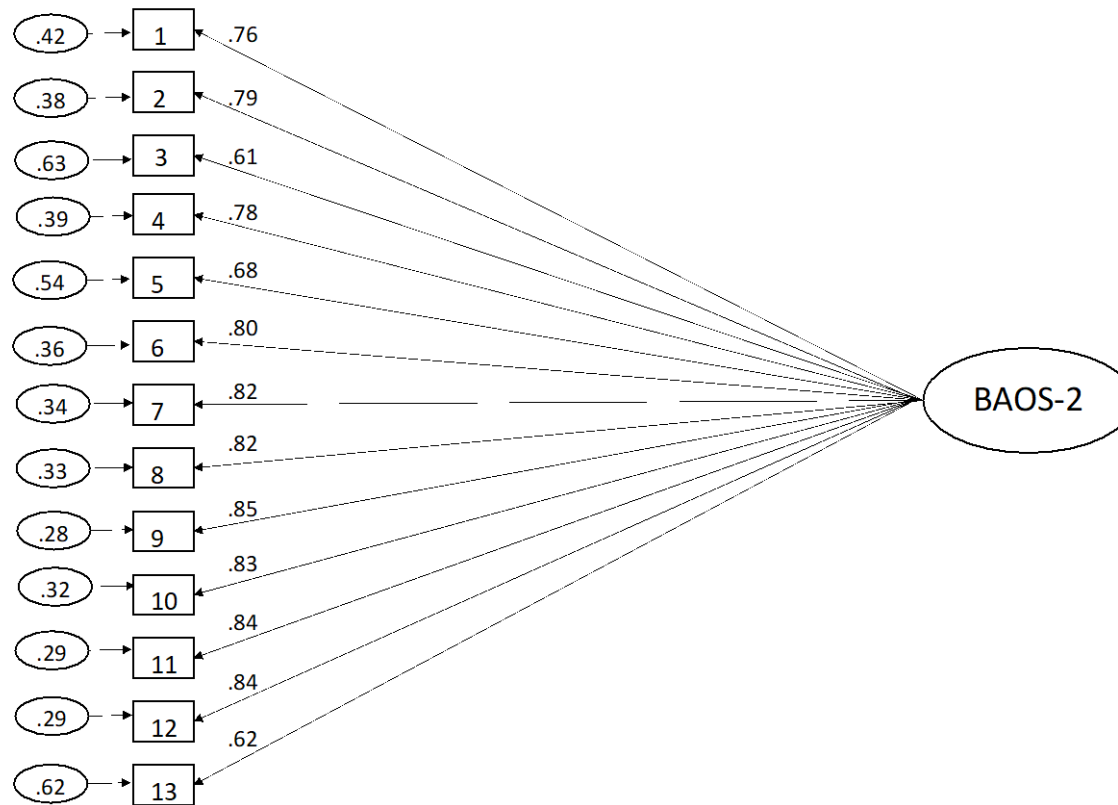
Figure 2

Path diagram and estimates for the 1-dimensional model of Body Acceptance by Others-2 (BAOS-2) scores in Study 3. The large oval is the latent construct, with the rectangles representing measured variables, and the small circles with numbers representing the residual variables (variances). The path factor loadings are standardised with significance levels were determined by critical ratios (all $p < .001$).

Appendix 1

Final Version of the Body Acceptance by Others Scale-2 (BAOS-2)

Permission to use the BAOS-2 is not required. However, please seek permission if you intend to modify or adapt any items prior to use. If you translate the BAOS-2 into another language, please use the acronym "BAOS-2" and add the language (e.g., "BAOS-2-German") to help keep track of translations. For each item, the following response scale should be used: 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always.

Directions for participants: The questionnaire below is about the way in which "important others" in your life relate to your body and its physical characteristics or features, including shape, size, height, skin tone, build (e.g., muscle, fat), and so on.

By "important others" we mean important people, groups, or communities in your life. This could include members of your family, close friends, intimate partner(s)/spouse, teachers, coaches, peers and co-workers, groups you belong to, and online communities, so long as you consider them to be important and meaningful in your life.

Please rate your agreement with each of the following statements while thinking about the important other(s) in your life.

1. I feel acceptance from important others regarding my body.

2. I believe that important others value my body as it is, without trying to change it.

3. I believe that important others trust me to do what is best for myself regarding my body.

4. I believe that important others are accepting of my body without comparing me to other people.

5. I don't have to change my body to feel accepted by important others.

6. I believe that important others embrace and cherish my body.

7. Important others help me feel calm and contented toward my body, rather than worried about it.

8. I believe that important others respect my body.

9. I get the feeling that important others like my body as it is, even if they don't say anything.

10. I believe that important others appreciate my unique body.

11. Important others help me feel comfortable regarding my body.

12. I can count on important others to accept my body.

13. Important others refrain from criticising or critiquing my body.

Scoring procedure: Compute the mean of responses to Items 1-13.