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The Body Appreciation Scale-2: Item refinement and psychometric evaluation

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ABSTRACT

Considered a positive body image measure, the 13-item Body Appreciation Scale (BAS; Avalos, Tylka, & Wood-Barcalow, 2005) assesses individuals' acceptance of, favorable opinions toward, and respect for their bodies. While the BAS has accrued psychometric support, we improved it by rewording certain BAS items (to eliminate sex-specific versions and body dissatisfaction-based language) and developing additional items based on positive body image research. In three studies, we examined the reworded, newly developed, and retained items to determine their psychometric properties among college and online community (Amazon Mechanical Turk) samples of 820 women and 767 men. After exploratory factor analysis, we retained 10 items (five original BAS items). Confirmatory factor analysis upheld the BAS-2's unidimensionality and invariance across sex and sample type. Its internal consistency, test–retest reliability, and construct (convergent, incremental, and discriminant) validity were supported. The BAS-2 is a psychometrically sound positive body image measure applicable for research and clinical settings.

Introduction

Research on body image traditionally has focused on describing and predicting negative body image such as body dissatisfaction, body shame, and body preoccupation, with less focus on identifying, predicting, and promoting adaptive body attitudes (Avalos, Tylka, & Wood-Barcalow, 2005). Recently, however, the study of positive body image has gained considerable momentum, and body appreciation has been the central organizing variable within these investigations (Tylka, 2011a, 2013). *Body appreciation* has been defined as accepting, holding favorable opinions toward, and respecting the body, while also rejecting media-promoted appearance ideals as the only form of human beauty (Avalos et al., 2005). Indeed, two subsequent qualitative studies identified body appreciation as a key characteristic of positive body image, more narrowly described in these investigations as gratitude toward the body (Frisén & Holmqvist, 2010; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Other positive body image characteristics detected in these studies (body acceptance and love, inner positivity influencing outer demeanor, and a broad conceptualization of beauty) appear to fit within the scope of Avalos et al.'s definition of body appreciation, which is operationalized and measured via the 13-item Body Appreciation Scale (BAS; Avalos et al., 2005).

The BAS has been utilized by researchers to understand features, correlates, and potential outcomes of positive body image. Body appreciation has been associated positively with adaptive characteristics and negatively with maladaptive characteristics among samples of women and men from Western countries, including the U.S., U.K., and Australia. More specifically, body appreciation is positively related to favorable appearance evaluation (Avalos et al., 2005), body esteem (Avalos et al., 2005; Swami, Steiger, Haubner, & Voracek, 2008), and multiple indices of psychological well-being (e.g., self-esteem, optimism, proactive coping, positive affect, life satisfaction, and self-compassion; Avalos et al., 2005; Swami, Steiger, et al., 2008; Tylka & Kroon Van Diest, 2013; Wasylkiw, MacKinnon, & MacLellan, 2012). Behaviorally, body appreciation is positively linked to intuitive eating (i.e., eating according to physiological hunger and satiety cues; Avalos & Tylka, 2006; Hahn Oh, Wiseman, Hendrickson, Phillips, & Hayden, 2012; Tylka & Kroon Van Diest, 2013), women's sexual functioning (including overall sexual satisfaction and satisfaction with sexual arousal and orgasm; Satinsky, Reece, Dennis, Sanders, & Bardzell, 2012), and physical activity especially when the motive to exercise is not appearance-based (Homan & Tylka, 2014). Body appreciation is inversely related to body dissatisfaction, social physique anxiety, body image avoidance, body shame, body surveillance, body checking behaviors, and

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internalization of societal appearance ideals (Avalos et al., 2005; Swami, Hwang, & Jung, 2012; Tylka, 2013; Tylka & Kroon Van Diest, 2013). Body appreciation is also inversely related to pathology, such as eating disorder symptomatology (Tylka & Kroon Van Diest, 2013), neuroticism (Swami, Hadji-Michael, & Furnham, 2008), and maladaptive perfectionism (Iannantuono & Tylka, 2012).

Data support the distinctiveness of body appreciation in studies using the BAS. For instance, Avalos et al. (2005) found that body appreciation predicted additional variance in U.S. college women's psychological well-being (i.e., self-esteem, optimism, and proactive coping) after controlling for body preoccupation, body dissatisfaction, and self-perceived attractiveness. Also, Tiggemann and McCourt (2013) revealed that the strength of the link between body appreciation and body dissatisfaction for women became significantly weaker with age. Thus, body appreciation is not simply the absence of negative body image or the experience of self-perceived attractiveness.

Instead, body appreciation as measured by the BAS is a way of valuing the body and orienting cognitive processing to protect and promote a positive view of the body (Wood-Barcalow et al., 2010). Not only do women who appreciate their bodies critique unrealistic appearance ideals in the media (Holmqvist & Frisén, 2012) and resist consuming appearance-focused media (Swami, Hadji-Michael, et al., 2008), they also protect their body image when exposed to appearance-based media. Halliwell (2013) found that, after viewing images of thin female models, college women low in body appreciation placed increased importance on their appearance discrepancies (i.e., differences between how they would like to look and how they actually look), whereas women high in body appreciation did not place more importance on their appearance discrepancies. Halliwell further observed that the protective effect of high body appreciation extended to women known to be vulnerable to media exposure—those who have internalized the thin ideal. Specifically, after viewing thin female models, women who endorsed the thin ideal and had low body appreciation reported larger appearance discrepancies and placed more importance on their appearance discrepancies, while women who endorsed the thin ideal but had high levels of body appreciation downplayed the importance of their appearance discrepancies.

The many findings illustrating the adaptive value of body appreciation further provide construct validity for the BAS as a measure of body appreciation within Western countries. Moreover, the BAS consistently has been found to have internal consistency reliability coefficients (Cronbach's alphas) at or above .90 for women and men from the U.S. and Australia (e.g., Augustus-Horvath & Tylka, 2011; Avalos et al., 2005; Kroon Van Diest & Tylka, 2010; Satinsky et al., 2012; Tiggemann & McCourt, 2013; Tylka, 2013; Wasylkiw et al., 2012). The BAS also has demonstrated stability over a 3-week period in U.S. women ($r = .90$; Avalos et al., 2005). Data from samples of college and community women and men from the U.S., U.K., and Germany (Avalos et al., 2005; Swami, Hadji-Michael, et al., 2008; Swami, Stieger, et al., 2008; Tylka, 2013), as well as adolescent girls and boys from Spain (Lobera & Ríos, 2011) support the BAS's unidimensional factor structure via exploratory and confirmatory factor analyses.

Nevertheless, the BAS's psychometric properties can be improved. In particular, five items (i.e., Item 7: "I am attentive to my body's needs;" Item 8: "My self-worth is independent of my body shape or weight;" Item 9: "I do not focus a lot of energy being concerned with my body shape or weight;" Item 11: "I engage in healthy behaviors to take care of my body," Item 12: "I do not allow unrealistically thin [muscular] images of women [men] presented in the media to affect my attitudes toward my body") exhibit low item-factor loadings compared to the remaining items. Correlating the errors between Items 7 and 11, Items 8 and 9, and Items 9 and 12 were required to produce an acceptable-fitting model for women and men via confirmatory factor analysis (Tylka, 2013). In non-Western samples, Items 8, 9, and 12 form a secondary factor, separate from the main factor, for Indonesian women and men (Swami & Jaafar, 2012), Malaysian and Chinese women (Swami & Chamorro-Premuzic, 2008), Brazilian women and men (Swami et al., 2011), Zimbabwean women (Swami, Mada, & Tovée, 2012), and South Korean college women and men (Swami, Hwang, et al., 2012). However, the internal consistency reliability and factor loadings for this secondary factor are generally weak and therefore not interpretable (Swami et al., 2011; Swami, Mada, et al., 2012; Swami & Jaafar, 2012). Moreover, Items 7 and 11 did not load on the main factor for Malay and Chinese women (Swami & Chamorro-Premuzic, 2008).

The original BAS has two additional limitations. First, women and men complete different forms due to the differential wording contained within Item 12 ("unrealistically thin images of women" versus "unrealistically muscular images of men"), which may be burdensome for data collection. Second, because the BAS was developed prior to comprehensive investigations of positive body image (see Frisén & Holmqvist, 2010; Holmqvist & Frisén, 2012; Wood-Barcalow et al., 2010), some items were written through antiquated lenses that consider certain features of negative body image as normative and/or positive body image as the absence of these features. More specifically, original BAS Items 4 ("Despite its flaws, I accept my body for what it is") and 13 ("Despite its imperfections, I still like my body") inherently assume that all participants perceive their bodies as containing "flaws" and "imperfections." Similarly, the original BAS Items 8 (i.e., "My self-worth is independent of my body shape or weight") and 9 ("I do not focus a lot of energy being concerned with my body shape or weight") assume that high levels of positive body image would entail no investment or attention placed on weight and shape (i.e., the opposite of negative body image). Yet, research shows that inattention to body shape and weight may not be an integral aspect of body appreciation. For example, women with positive body image have revealed that they often take pride in their body shape—not because their bodies are similar to sociocultural images, but because they believed that all body shapes should be celebrated (Wood-Barcalow et al., 2010). Indeed, researchers are now investigating body-related pride as a facet of positive body image (Castonguay, Brunet, Ferguson, & Sabiston, 2012; Castonguay, Gilchrist, Mack, & Sabiston, 2013).

Therefore, in light of recent literature on positive body image and the aforementioned limitations of the original BAS, we revised and updated this scale, henceforth referred to as the BAS-2. Additional research on body appreciation is clearly needed to increase researchers' and clinicians' understanding of ways to promote positive body image (Tylka, 2011a). We conducted three studies to determine whether the BAS-2 could be a psychometrically sound measure used to guide this research.

Study 1

The purpose of Study 1 was to develop the BAS-2 and estimate its reliability and validity with college students. We first revised certain original BAS items that were sex-specific or biased toward negative body image and developed additional items that tap into the body appreciation construct (Avalos et al., 2005; Wood-Barcalow et al., 2010). Second, we explored the factor structure of this item set. Third, we examined the internal consistency reliability, construct validity, concurrent validity, incremental validity, and test–retest reliability of the BAS-2. Worthington and Whittaker's (2006) recommendations for scale development were followed.

Revision of Original BAS Items

Five of the original 13 BAS items were revised, reworded, or discarded. The sex-specific Item 12 ("I do not allow unrealistically thin [muscular] images of women [men] presented in the media to affect my attitudes toward my body") was reworded to eliminate the necessity of having separate women's and men's forms. This item was replaced with two potential items: "When I look at advertisements, I remind myself that the models are airbrushed or computer modified" and "I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors)."[1]

The original BAS Items 4 and 13 (i.e., "Despite its flaws, I accept my body for what it is" and "Despite its imperfections, I still like my body") were revised to eliminate biased terms that represent a negative body orientation. These items beg the question: Flawed or imperfect compared to what standard? We did not want to infer that participants' bodies were inherently flawed or imperfect and, for instance, that media images of digitally modified models were flawless and perfect. Thus, we rephrased these items to: "I appreciate the different and unique characteristics of my body," and "I find beauty in features of my body that are different."

Last, the original BAS Items 8 and 9 (i.e., "My self-worth is independent of my body shape or weight" and "I do not focus a lot of energy being concerned with my body shape or weight") were removed. Research has shown that adolescents and women with positive body image may celebrate their body and appearance, rather than simply ignore their appearance (Frisén & Holmqvist, 2010; Holmqvist & Frisén, 2012; Wood-Barcalow et al., 2010). We felt that the theme of celebrating their body and appearance was reflected in the item pool; thus, we did not develop ones to replace the original BAS Items 8 and 9.

Development of the Additional Items for the BAS-2 and Expert Review

Seven newly developed items were drafted by the first author who used the themes noted throughout qualitative studies of positive body image (Frisén & Holmqvist, 2010; Wood-Barcalow et al., 2010) to guide item content. These themes/new items include: body acceptance and love (i.e., "I feel love for my body," "I am comfortable in my body"), inner positivity influencing outer demeanor (i.e., "I feel like my positive attitude towards my body is reflected in my outer appearance," "My behavior reveals my positive attitude toward my body; for example, I walk holding my head high and smiling"), appreciating the functionality of the body (i.e., "I appreciate the pleasures and the functions my body provides for me, e.g., ability to walk, laugh, hug, etc.)," and taking care of the body via healthy behaviors (i.e., "I listen to my body to determine what it needs, such as sleep, stress relief, and exercise," and "I will stop and take care of my body if I am ill or injured").

The 19 potential BAS-2 items (eight original, four revised, and seven newly developed) were reviewed by an independent researcher familiar with positive body image to (a) examine the extent to which the items comprehensively assessed body appreciation and (b) determine whether the wording of the items needed to be modified for clarity or style. This reviewer confirmed that the BAS-2 items were worded clearly and assessed the body appreciation construct comprehensively.

Although some researchers recommend that scales include both positively and negatively scored items to minimize extreme response and acquiescence bias, we decided to not design negatively scored items because they distort factor structures (Brown, 2006). In this case, negatively scored items would need to be phrased to either indicate low body appreciation (e.g., "I feel bad about my body") or high body appreciation with a "not" included (e.g., "I do not feel good about my body). We were concerned that such items would be confounded with body dissatisfaction and concluded that more research on how low body appreciation differs conceptually from high body dissatisfaction needs to be conducted before negatively scored items are developed. Also, there are disadvantages to including both positively and negatively scored items within the same scale: respondents may accidentally agree with negatively scored items (e.g., they miss the "not"), researchers may forget to reverse the negatively scored items, and interpretation problems occur when negatively scored items are included in cross-cultural examinations (Wong, Rindfleisch, & Burroughs, 2003). Indeed, Barnette (2000) argued that the advantages of including negatively scored items do not outweigh the disadvantages.

Hypotheses

First, similar to the original version (Avalos et al., 2005; Tylka, 2013), we hypothesized that the BAS-2 items would adhere to a unidimensional solution for women and men. Second, we expected that the BAS-2 items would be internally consistent because they all were designed to tap into a general body appreciation construct. Third, we predicted that the BAS-2 scores would be stable over a 3-week period, which would uphold its test–retest reliability.

Fourth, BAS-2 scores were expected to demonstrate construct validity via their relationships to several body-related variables and psychological well-being indices for women and men. More specifically, because the BAS-2 is designed to be a measure of body image, it should be strongly related (i.e., $rs > |.50|$; Cohen, 1992) in a positive direction to an index of positive body evaluation (i.e., appearance evaluation) and in an inverse direction to body dissatisfaction. Also, because individuals who have high positive body image tend to resist sociocultural appearance standards and do not habitually monitor their appearance from an "outsider's" perspective (Frisén & Holmqvist, 2010; Wood-Barcalow et al., 2010), we expected that BAS-2 scores would exhibit moderate-to-strong inverse relationships (i.e., $rs > -.30$; Cohen, 1992) to internalization of sociocultural appearance standards and body surveillance. Further, given that body appreciation is considered to be an aspect of positive psychological functioning (Tylka, 2011a), we hypothesized that BAS-2 scores would be moderately-to-strongly positively related (i.e., $rs > .30$; Cohen, 1992) to established indices of well-being such as self-esteem and proactive coping.

Fifth, due to the well-documented link between body image and eating behavior (Stice, 2002; Tylka & Kroon Van Diest, 2013), we hypothesized that the BAS-2 would be associated with adaptive eating behavior (e.g., intuitive eating) in a positive direction and maladaptive eating behavior (i.e., eating disorder symptomatology) in a negative direction to a moderate-to-strong degree (i.e., $rs > |.30|$; Cohen, 1992). These findings would uphold the BAS-2's criterion-related validity.

Last, because high levels of positive body image are qualitatively different than low levels of negative body image and high levels of appearance evaluation, we hypothesized that BAS-2 scores would predict unique variance in eating behavior and well-being above and beyond their associations with negative body

[1] Although "beautiful" may be considered a gendered term (i.e., used to refer to women more so than men), we wanted a term that reflects participants' holistic feelings about themselves (i.e., which could include both internal and external qualities) and is broad in its definition (i.e., not constrained by societal appearance standards). Terms such as "good-looking" or "attractive" could imply physical appearance, objectification of the body by a secondary source, and/or sexual components which are likely constrained to societal appearance standards. For instance, a person may identify as beautiful but may not feel that she/he is "good-looking" according to societal appearance standards.

image and favorable appearance evaluation. These findings would support its incremental validity, solidifying its need within body image research.

Method

Participants and procedure. After receiving IRB approval from The Ohio State University, participants from a regional campus were recruited from introductory and upper-level psychology classes during three academic terms. Interested students signed up on the psychology department's research management website and, from there, clicked a link to a webpage that hosted the informed consent sheet. Upon providing consent, participants were directed to the survey webpage. This study was described as an investigation of body attitudes, eating habits, and well-being among college students. All students received research credit for their participation, and after finishing this survey, were invited to participate in "a 3-week follow-up study on body attitudes" for additional research credit. Participants were not informed that they would be taking the BAS-2 again or that the purpose of the study was to gauge the stability of the BAS-2.

We screened for duplicate and erroneous data. Participants were deleted if they took the survey more than once ($n = 3$), failed at least one of four validity questions (e.g., "Do not answer this item so we know you are paying attention," $n = 42$), terminated early ($n = 20$), or had significant missing data (i.e., leaving > 20% items blank for at least one measure, $n = 9$). From the initial data set of 749 participants, 675 (367 women and 308 men) remained, and their data were analyzed. They ranged in age from 18 to 56 ($M_{age} = 20.34$, $SD = 5.08$) and identified as White (79.1%), African American (11.0%), Asian American (4.1%), Latina/Latino (0.7%), Native American (0.3%), or multiracial (4.6%). One participant (0.1%) did not report an ethnic identification. They were first-year college students (76.7%), sophomores (17.2%), juniors (3.7%), or seniors (1.9%); three participants (0.4%) did not report their college status. Average body mass index (BMI) was 24.21 ($SD = 5.56$) for women and 25.02 ($SD = 5.27$) for men.

Twenty days after they completed the main survey, the first author sent all participants an email with the link to the informed consent sheet and the BAS-2, and asked participants to complete the survey within three days. Day 20 was chosen to give participants a small time window to receive the email and complete the study. Participants who responded within this time frame were given research credit and matched (via the student code assigned to them by the research management system) to their prior answers on the BAS-2 items. No participant failed the embedded validity question. Test–retest data from 208 participants (135 women and 73 men) were gathered. They ranged in age from 18 to 47 ($M_{age} = 20.27$, $SD = 4.53$). They identified as White (81.3%), African American (8.6%), Asian American (3.4%), Latino/Latina (0.5%), Native American (0.5%), or multiracial (5.8%). They were first-year students (76.5%), sophomores (16.8%), juniors (4.3%), and seniors (1.9%). This subset did not differ from the original sample of 675 on any demographic variable (age, ethnicity, college status, or BMI; all $ps > .48$).

Measures. The measures were counterbalanced to control for order effects.

Body appreciation. The 19 items in the BAS-2 item pool were administered. Participants were instructed, "Please indicate whether the question is true about you never, seldom, sometimes, often, or always." The labels included on the item-response scale mirrored the original 5-point scale (Avalos et al., 2005): *never* = 1, *seldom* = 2, *sometimes* = 3, *often* = 4, *always* = 5.

Appearance evaluation. The 7-item Appearance Evaluation subscale of the Multidimensional Body Self-Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990; Cash, 2000) assessed participants' perceived self-attractiveness. Its items (e.g., "My body is sexually appealing") were rated along a 5-point response scale ranging from labels of *definitely disagree* (scored as 1) to *definitely agree* (scored as 5); each point along the response scale was labeled. Items were averaged, with higher values reflecting a more favorable appearance evaluation. Among college women, Appearance Evaluation subscale scores were found to be internally consistent, positively related to the original BAS, negatively related to body dissatisfaction, and unrelated to impression management (a form of socially desirable responding in which individuals provide inflated self-descriptions), supporting its psychometric properties (Avalos et al., 2005). In the present study, Cronbach's alphas for Appearance Evaluation were .90 for both women and men.

Body dissatisfaction. Because body dissatisfaction is qualitatively different for women and men (Tylka, 2011b; Tylka, Bergeron, & Schwartz, 2005), we used sex-specific measures to assess this construct in our sample. Women received the 10-item Body Shape Questionnaire-Revised-10 (BSQ-R-10; Mazzeo, 1999), which measures the strength or salience of negative body image attitudes. Its items (e.g., "Has seeing thin women made you feel badly about your own shape?") were rated along a 6-point scale ranging from labels of *never* (scored as 1) to *always* (scored as 6); each point along the scale was labeled. Items were averaged, with higher scores indicating greater body dissatisfaction. Its psychometric properties have been upheld among college women, as it has shown to be internally consistent, unidimensional, and strongly related to other measures of body dissatisfaction (Mazzeo, 1999). In the present study, the BSQ-R-10's alpha was .96.

Men received the Male Body Attitudes Scale (MBAS; Tylka et al., 2005) which contains three subscales assessing Muscularity Dissatisfaction (10 items; e.g., "I think I have too little muscle on my body"), Body Fat Dissatisfaction (eight items, e.g., "I think my body should be leaner"), and Height Dissatisfaction (two items, e.g., "I wish I was taller"). Its items were rated along a 6-point scale ranging from labels of *never* (scored as 1) to *always* (scored as 6); each point along the scale was labeled. Items were averaged to arrive at total and subscale scores; higher scores indicate greater body dissatisfaction. The MBAS has been shown to be internally consistent, stable over a 2-week period, and inversely related to the original BAS among college men (Tylka, 2013). In the present study, Cronbach's alphas were .93 for Muscularity Dissatisfaction, .94 for Body Fat Dissatisfaction, .82 for Height Dissatisfaction, and .91 for the total MBAS. The total score was the central measure of body dissatisfaction in this study, yet subscale scores were also considered.

Internalization of media appearance ideals. The 8-item female version of the Internalization subscale of the Sociocultural Attitudes Toward Appearance Questionnaire-Revised (SATAQ-R; Heinberg, Thompson, & Stormer, 1995) assessed the extent to which women have internalized the thin media ideal as their personal standard (e.g., "Women who appear in TV shows and movies project the type of appearance that I see as my goal"). The 11-item male version of the SATAQ-R Internalization subscale (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) measured men's internalization of the muscular and fit media ideal as their personal standard (e.g., "I would like my body to look like the men who appear in TV shows and magazines"). On both versions, items were rated along a 5-point scale ranging from labels of *completely disagree* (scored as 1) to *completely agree* (scored as 5); each point along the scale was labeled. Items were averaged, with higher scores reflecting greater internalization. Internal consistency reliability and construct validity for these versions have been upheld with college women

(Tylka & Subich, 2004) and college men (Tylka et al., 2005). In the present study, Cronbach's alphas for the Internalization subscale items were .92 for women and .91 for men.

Body surveillance. The 8-item Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) measured participants' tendency to habitually monitor their appearance. Its items (e.g., "During the day, I think about how I look many times") were rated along a 7-point scale ranging from labels of *strongly disagree* (scored as 1) to *strongly agree* (scored as 7); each point along the scale was labeled. Items were averaged, with higher scores reflecting greater body surveillance. Upholding its psychometrics, the Body Surveillance subscale was internally consistent and positively related to public self-consciousness among college women (McKinley & Hyde, 1996) and internalization of societal appearance standards among college men (Parent & Moradi, 2011). In the current study, Cronbach's alphas for Body Surveillance were .86 for women and .89 for men.

Self-esteem. The 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) assessed women's and men's self-esteem. Its items (e.g., "I feel that I have a number of good qualities") were rated on a 4-point scale ranging from labels of *strongly disagree* (scored as 1) to *strongly agree* (scored as 4); each point along the scale was labeled. Item responses were averaged, with higher scores reflecting greater self-esteem. Among college women and men, researchers have supported its internal consistency reliability and construct validity via its relationships to proactive coping and optimism (Bergeron & Tylka, 2007; Tylka, 2006; Tylka et al., 2005). In the present study, Cronbach's alphas for the RSES were .90 for women and .89 for men.

Proactive coping. The 14-item Proactive Coping subscale of the Proactive Coping Inventory (Greenglass, Schwarzer, & Taubert, 1999) measured participants' resources that included forming and pursuing challenging goals and working through obstacles that prevent access to these goals. Its items (e.g., "I like challenges and beating the odds") were rated along a 5-point scale ranging from labels of *strongly disagree* (scored as 1) to *strongly agree* (scored as 5); each point along the scale was labeled. Item responses were averaged, with higher scores indicating greater use of proactive coping. Among college samples, this subscale has been shown to be internally consistent and yield construct validity via its relationships to self-esteem and optimism (Bergeron & Tylka, 2007; Tylka, 2006; Tylka et al., 2005). In the present study, Cronbach's alphas for the Proactive Coping subscale were .86 for women and .87 for men.

Intuitive eating. The 23-item Intuitive Eating Scale (Tylka & Kroon Van Diest, 2013) assessed participants' tendency to eat in response to their internal hunger and satiety cues rather than emotional or situational cues. Its items (e.g., "I rely on my hunger signals to tell me when to eat") were rated along a 5-point scale ranging from labels of *strongly disagree* (scored as 1) to *strongly agree* (scored as 5); each point along the scale was labeled. Items were averaged, with higher scores indicating greater intuitive eating. Its internal consistency reliability, 3-week test–retest reliability, construct validity, incremental validity, and discriminant validity have been estimated and upheld in college samples of women and men (Tylka & Kroon Van Diest, 2013). For the current study, Cronbach's alphas were .86 for women and .89 for men.

Eating disorder symptomatology. The 26-item Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) measured participants' levels of disordered eating attitudes and behaviors. Items (e.g., "I am terrified about being overweight") were rated along a 6-point scale ranging from labels of *never* (scored as 1) to *always* (scored as 6); each point along the scale was labeled. The continuous scoring method (see Mazzeo, 1999; Tylka & Subich, 2004) was used because it utilizes the full range of responses, reducing skewness in the score distribution due to the low base rate of clinical eating disorders in college samples. Items were averaged to arrive at the total score, with higher scores reflecting greater eating disorder symptomatology. The continuously scored EAT-26 is internally consistent for college women and men (Tylka & Kroon Van Diest, 2013); it also is stable across a 3-week period (Mazzeo, 1999) and strongly related to an eating disorder diagnostic instrument (Tylka & Subich, 2004) for college women. In the present study, Cronbach's alphas for the EAT-26 were .90 for both women and men.

BMI. Participants reported their height in feet and inches and weight in pounds, which we used to calculate BMI: (weight $\times$ 703)/height in inches^2.

Results

Preliminary analyses. Across all measures, 30.24% participants had at least one missing data point. The count for individual missing data points was low, ranging from 0 to 1.6% (M = 0.54%). We used available item analysis, in which all available item responses are averaged to form total scale scores, but the mean scale value for a participant is not imputed into his/her missing item point(s). Available item analysis is the recommended method when the level of item missingness is low and scales are internally consistent (Parent, 2013), which was the case in the present study. Available item analysis produces equivalent *total scale* scores to the mean substitution method; however, it does not estimate an individual item value when it is missing, which is important when making decisions based on *individual items* in factor analysis (Parent, 2013).

BAS-2 items, scale, and subscale scores were examined for normality of distribution. Skewness values > 3 and/or kurtosis values > 10 may pose problems in regression analyses and therefore should be transformed (Kline, 2005). Skewness and kurtosis values for the BAS-2 items and other scale and subscale scores were lower than these limits, preempting transformation.

Exploring the BAS-2's factor structure. Two principal axis exploratory factor analyses (EFA) were conducted on the 19 potential BAS-2 items using SPSS 19.0. This program split the data randomly into two groups so that the second group could be used to cross-validate the findings obtained via the first group (these groups did not differ on any demographic variable, all $ps > .62$). For each group, the number of participants exceeded the recommended 5:1 cases-to-parameter ratio needed to confidently examine a model (Bentler, 1990). Quartimax rotation, the orthogonal rotation procedure of choice when a general factor is expected (Pedhazur & Schmelkin, 1991), was used.

Parallel analysis was used to determine the number of factors to extract. Parallel analysis estimates the number of factors in a data set more accurately than the eigenvalue > 1 criterion and/or examining the scree plot of the eigenvalues for breaks or discontinuities (Brown, 2006; Fabrigar, Wegener, MacCallum, & Strahan, 1999). The rationale behind parallel analysis is that the factors underlying a measure should account for more variance than is expected by chance. Therefore, factor analysis is performed on the actual data as well as multiple sets of random data (in this case, 1000) that have the same dimensions as the actual data set. If the eigenvalue generated from the analysis of the actual data exceeds the corresponding pooled eigenvalue from the analysis of the random data, then that factor is retained.

For the present study, an item was retained if it had (a) an item-factor loading of at least .50 on a primary factor, (b) cross-loadings less than .30 on additional factors (if more than one factor is interpretable), and (c) low inter-item correlations (which suggest low item redundancy) as indicated by the anti-image correlation matrix (Brown, 2006; Tabachnick & Fidell, 2007).

EFA Group 1. The size of the Kaiser-Meyer-Oklin measure of sampling adequacy (KMO = .955) suggested that the BAS-2 items in the EFA Group 1 ($n = 338$) had adequate common variance for factor analysis, and the significance of Bartlett's test of sphericity, $\chi^2(171) = 4524.20$, $p < .001$, suggested that the correlation matrix was factorable (Tabachnick & Fidell, 2007). Results of the parallel analysis revealed that one factor should be retained. A total of 16 items had factor loadings ≥ .50 on this factor. The anti-image correlation matrix revealed six item pairs that were correlated and thus redundant. We extracted one item from each pair, with item choice being based on size of factor loadings and item clarity. A second factor analysis using principal axis factoring (PAF) on the 10 remaining items revealed a unidimensional solution, accounting for 64.50% of the total item variance. Of these 10 items, five were from the original BAS and five were new items.

EFA Group 2. Findings for EFA Group 2 ($n = 337$) largely mirrored those found with EFA Group 1. The KMO (i.e., .957) and Bartlett's test of sphericity, $\chi^2(171) = 3917.03$, $p < .001$, suggested that the BAS-2 items had adequate common variance and the correlation matrix was factorable. Again, one factor was interpretable based on the findings of the parallel analysis, with the same 16 items loading ≥ .50 on this factor, and the anti-image correlation matrix detected that the same six item pairs were correlated. After deleting six items that had lower factor loadings and/or item clarity than their paired counterparts, we were left with the same 10 items as EFA Group 1. A second factor analysis using PAF on these 10 items revealed a unidimensional solution, which accounted for 63.59% of the total item variance.

Combined sample. Due to the consistency in EFA findings across EFA Groups 1 and 2, we combined them and ran an EFA on the 10 BAS-2 items. Data from the combined sample indicated that these 10 items accounted for a total of 64.17% of the variance (when analyzed by sex: 66.78% for women, 61.51% for men). Item-factor loadings for the combined sample are in Table 1.

BAS means and correlations with BMI. The means of the 10 BAS-2 items and total BAS-2 are include in Table 2. When compared to women, men demonstrated higher BAS-2 scores; the effect size revealed a small degree of difference. The BAS-2 was correlated −.27 with BMI; the correlations were −.23 and −.32 for women and men, respectively (all $ps < .001$).

Internal consistency reliability. For women and men, respectively, Cronbach's coefficient alphas were .94 and .93 for the 10-item BAS-2. Item-total correlations ranged between .62–.88 for women and .59–.83 for men. Thus, the BAS-2 was internally consistent.

Test–retest reliability. Intraclass correlation coefficients (ICCs) and paired sample *t*-tests were used to estimate the stability of the BAS-2's scores using data from the subsample of 208 participants who completed this measure twice, three weeks apart. The ICCs between the BAS-2 scores at the first and second administration were both .90 for women and men. Moreover, BAS-2 scores did not increase or decrease over time for women, $t(134) = -0.15$, $p = .880$, or men, $t(72) = -0.34$, $p = .736$. These findings uphold the BAS-2's test–retest reliability over a 3-week period.

Construct validity. It was hypothesized that the BAS-2 would be strongly related to established measures of body image. As can be seen in Table 3, the BAS-2 was strongly positively correlated with appearance evaluation and strongly negatively related to body dissatisfaction for women and men. An analysis of the MBAS subscales for men demonstrated that the BAS-2 was strongly related to body fat dissatisfaction ($r = -.65$, $p < .001$), moderately to muscularity dissatisfaction ($r = -.31$, $p < .001$), and slightly to height dissatisfaction ($r = -.15$, $p < .01$).

Also as hypothesized, the BAS-2 was strongly and inversely related to internalization of media appearance ideals and body surveillance for women and men. The BAS-2 was strongly and positively correlated with self-esteem and proactive coping for women and men. These findings, found in Table 3, uphold the BAS-2's construct validity.

Criterion-related validity. As hypothesized, the BAS-2 was inversely related to eating disorder symptomatology and positively related to intuitive eating for women and men (see Table 3). These findings support the BAS-2's criterion-related validity.

Incremental validity. Finally, it was determined whether the BAS-2 would predict eating behavior (i.e., intuitive eating, eating disorder symptomatology) and psychological well-being (i.e., self-esteem, proactive coping) above and beyond the variance accounted for by measures of both adaptive body attitudes (i.e., appearance evaluation) and maladaptive body attitudes (i.e., body dissatisfaction). Appearance evaluation and body dissatisfaction were entered at Step 1, and the BAS-2 was entered at Step 2 in the prediction of each of the four criteria, yielding four hierarchical multiple regression equations. The *p*-level was adjusted to .013 (.05/4) to control for Type I error. A statistically significant increment in R^2 at Step 2 would support the BAS-2's incremental validity.

Our findings, presented in Table 4, indicate incremental validity for the BAS-2, as it is distinct from high levels of appearance evaluation and low levels of body dissatisfaction. For both women and men, BAS-2 scores predicted unique variance in intuitive eating, self-esteem, and proactive coping. For women, BAS-2 scores also predicted unique variance in eating disorder symptomatology, yet for men, the incremental variance in eating disorder symptomatology by BAS-2 scores did not reach significance ($p = .027$) according to the adjusted *p*-value of .013. All significant R^2 values at Step 2 were small-to-medium in effect size per Cohen's (1992) criteria.

Study 2

In Study 2, confirmatory factor analysis (CFA) of the 10-item BAS-2 was conducted in order to determine whether the results of the Study 1 EFA would be confirmed with another sample of college students as well as a community sample of adult women and men. For both samples, we hypothesized that all BAS-2 items would load on one latent body appreciation factor, and this model would provide an acceptable fit to the data. This model was also tested for measurement invariance in sex and sample type (collegiate versus online community) to ensure that the BAS-2 assesses the same construct for women and men using two popular recruitment methods. We hypothesized that our model would be invariant across sex and sample type.

Also, given the substantiated and strong relationship between body appreciation and well-being found in Study 1, a concern might be that participants want to project that they have high levels of body appreciation to appear psychologically adjusted. Therefore,

Table 1
Body Appreciation Scale-2 (BAS-2) standardized item-factor loadings: Studies 1, 2, and 3.

BAS-2 items	Study 1: college sample Item-factor loadings			Study 2: college sample Item-factor loadings			Study 2: community sample Item-factor loadings			Study 3: community sample Item-factor loadings		
	Overall	Women	Men	Overall	Women	Men	Overall	Women	Men	Overall	Women	Men
1. I respect my body.	.69	.70	.68	.78	.72	.85	.81	.83	.80	.82	.82	.83
2. I feel good about my body.	.83	.85	.81	.89	.89	.87	.93	.94	.93	.91	.91	.92
3. I feel that my body has at least some good qualities.	.75	.75	.75	.83	.84	.79	.83	.84	.83	.88	.91	.83
4. I take a positive attitude towards my body.	.89	.91	.87	.92	.93	.87	.93	.94	.92	.93	.94	.92
5. I am attentive to my body's needs.	.62	.63	.61	.73	.67	.77	.71	.74	.69	.75	.76	.73
6. I feel love for my body.	.85	.89	.78	.90	.93	.83	.88	.92	.84	.87	.91	.82
7. I appreciate the different and unique characteristics of my body.	.81	.85	.76	.79	.76	.80	.85	.88	.82	.87	.91	.81
8. My behavior reveals my positive attitude toward my body; for example, I walk holding my head high and smiling.[a]	.68	.71	.66	.80	.79	.81	.79	.76	.82	.84	.86	.81
9. I am comfortable in my body.	.83	.83	.83	.90	.91	.88	.86	.87	.85	.91	.91	.90
10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).	.77	.78	.78	.83	.83	.81	.80	.82	.78	.83	.84	.80

Note. Study 1: $N = 675$ college students (women $n = 367$, men $n = 308$). Study 2: College students: $N = 263$ (women $n = 161$, men $n = 102$) and Amazon Mechanical Turk online community participants: $N = 317$ (women $n = 150$, men $n = 167$). Study 3: $N = 382$ MTurk online community participants (women $n = 192$, men $n = 190$).

[a] In Study 3, this item was altered to "My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile."

we determined whether BAS-2 scores were related to impression management. We hypothesized that the BAS-2 would not yield moderate or high correlations with impression management (i.e., $rs < .30$, Cohen, 1992), upholding its discriminant validity.

Method

Participants and procedure. We collected data from two sample domains: college students and Amazon Mechanical Turk (MTurk) online community members. Increasingly used in psychological research, MTurk is an online website whereby participants receive monetary compensation for completing surveys or other tasks (i.e., "hits"). Data gathered from MTurk have been shown to be more diverse and nationally representative, but just as psychometrically sound, when compared to data gathered from college student samples (Buhrmester, Kwang, & Gosling, 2011). Further, MTurk is a reliable and valid method for data collection on body image (Gardner, Brown, & Boice, 2012).

IRB approval from The Ohio State University was granted for collecting data from college students and MTurk participants (henceforth referred to as community participants). College students signed up on the psychology department's research management website, and community participants signed up via the MTurk worker hit website. We were able to restrict the community participant sample to U.S. citizens who have completed at least 100 hits on MTurk and had their previous work approved at least 98% of the time. This study was described to all participants as "an investigation of body attitudes and personality." Measures (BAS-2 and Impression Management subscale of the Balanced Inventory of Desirable Responding-6; BIDR-6) were completed online via SurveyMonkey. Students received research credit for their psychology classes, and community participants each received $0.75 (an amount that is commensurate with payments received for completing other MTurk surveys of this length).

From the initial data of 296 college students and 339 community participants, participants were deleted if they took the survey more than once ($n = 6$), completed Study 1 ($n = 4$), failed at least one of three embedded validity questions ($n = 19$), terminated early ($n = 19$), or had significant missing data ($n = 7$). Thus, data from 263 college students and 317 community participants were retained and analyzed.

Sample 1. Sample 1 included 263 college students (161 women and 102 men) from the same regional campus as Study 1. Participants ranged in age from 18 to 58 ($M_{age} = 20.43$, $SD = 6.04$). They identified as White (81.0%), African American (7.3%), Asian American (4.9%), Latina/Latino (1.5%), Native American (1.1%), or multiracial (4.2%). They were first-year college students (73.8%), sophomores (13.7%), juniors (5.7%), or seniors (4.2%); 2.7% indicated "other." Women's average BMI was 24.56 ($SD = 5.93$), and men's average BMI was 24.84 ($SD = 5.65$).

Sample 2. The second sample in Study 2 included 317 MTurk community participants (150 women and 167 men); 46 U.S. states were represented in their data. They ranged in age from 19 to 65 ($M_{age} = 32.89$, $SD = 10.10$). Given the large standard deviation, we present an age breakdown: 19–25 ($n = 81$; 25.6%), 26–35 ($n = 148$; 46.7%), 36–45 ($n = 47$; 14.8%), 46–55 ($n = 25$; 7.9%), and 56–65 ($n = 16$; 5.0%). They identified as White (79.8%), African American (6.0%), Asian American (4.7%), Latina/Latino (4.1%), Native American (0.9%), or multiracial (3.5%), with two participants (0.6%) choosing "other." Two (0.6%) did not complete high school, 16.7% finished high school, and the remaining participants (82.7%)

Table 2
Body Appreciation Scale-2 (BAS-2) items and means (*SDs*): Studies 1, 2, and 3.

BAS-2 items	Study 1: college sample					Study 2: college sample					Study 2: community sample					College vs community: mean sex differences		Study 3: community sample				
	Women		Men		Sex	Women		Men		Sex	Women		Men		Sex			Women		Men		Sex
	M	*SD*	*M*	*SD*	*d*	*M*	*SD*	*M*	*SD*	*d*	*M*	*SD*	*M*	*SD*	*d*	d_w	d_m	*M*	*SD*	*M*	*SD*	*d*
1	4.00	0.91	4.06	0.86	0.07	3.83*	0.90	4.18*,a	0.87	0.40	3.77	0.96	3.67a	0.92	0.11	0.06	0.57	3.57	0.93	3.71	0.91	0.15
2	3.30*	0.97	3.68*	0.92	0.40	3.26*	1.03	3.82*,a	0.99	0.55	3.23	1.11	3.27a	1.08	0.04	0.03	0.53	2.99*	1.10	3.34*	0.98	0.34
3	3.96*	0.95	4.22*	0.89	0.28	3.85*	0.92	4.22*,a	0.91	0.40	3.85	0.97	3.66a	0.99	0.19	0.00	0.59	3.42	1.12	3.66	0.92	0.23
4	3.42*	1.09	3.88*	0.94	0.45	3.42*	1.09	4.05*,a	0.98	0.61	3.43	1.09	3.49a	1.04	0.06	0.01	0.55	3.25	1.09	3.52	1.02	0.26
5	3.83	0.86	3.87	0.83	0.05	3.69*	0.85	4.14*,a	0.78	0.55	3.69	0.87	3.62a	0.88	0.08	0.00	0.63	3.59	0.94	3.70	0.86	0.12
6	3.39*	1.12	3.65*	1.00	0.24	3.34*	1.20	3.84*,a	1.12	0.43	3.35	1.14	3.16a	1.13	0.17	0.01	0.60	3.07*	1.14	3.39*	1.07	0.29
7	3.51	1.04	3.69	0.92	0.18	3.31*	1.07	3.95*,a	0.96	0.63	3.29	1.04	3.19a	0.94	0.10	0.02	0.80	3.09	1.10	3.30	1.06	0.19
8	3.54	0.93	3.58	0.97	0.04	3.40	1.04	3.74a	1.02	0.33	3.31	1.02	3.16a	1.10	0.14	0.09	0.55	3.13	1.09	3.29	1.06	0.15
9	3.49*	1.08	3.90*	0.93	0.41	3.25*	1.16	3.94*,a	1.04	0.63	3.38	1.07	3.49a	1.08	0.10	0.12	0.42	3.09*	1.13	3.49*	0.99	0.38
10	3.65	1.01	3.68	0.99	0.03	3.37*	1.17	3.77*,a	1.05	0.36	3.35	1.09	3.03a	1.07	0.30	0.02	0.70	3.02	1.13	3.23	1.11	0.19
BAS-2 Total Score	3.61*	0.82	3.82*	0.72	0.27	3.47*	0.89	3.97*,a	0.83	0.58	3.47	0.90	3.37a	0.87	0.11	0.00	0.71	3.22	0.96	3.46	0.86	0.26

Note. Study 1: $N = 675$ college students (women $n = 367$, men $n = 308$). Study 2: College students: $N = 263$ (women $n = 161$, men $n = 102$); Amazon Mechanical Turk online community participants: $N = 317$ (women $n = 150$, men $n = 167$). Study 3: MTurk online community participants $N = 382$ (women $n = 192$, men $n = 190$).

* Women's and men's subsample BAS-2 means are different at $p < .005$ within the sample category (the *p*-value was adjusted for the number of comparisons, i.e., $p = .05/10 = .005$).

[a] College and community sample BAS-2 means are different at $p < .005$ (compared by same sex) in Study 2.

d = Cohen's *d* effect size difference between women and men's BAS-2 means.

d_w = Cohen's *d* effect size difference between college and community women's BAS-2 means in Study 2.

d_m = Cohen's *d* effect size difference between college and community men's BAS-2 means in Study 2.

BAS-2 Item 1: I respect my body.
BAS-2 Item 2: I feel good about my body.
BAS-2 Item 3: I feel that my body has at least some good qualities.
BAS-2 Item 4: I take a positive attitude towards my body.
BAS-2 Item 5: I am attentive to my body's needs.
BAS-2 Item 6: I feel love for my body.
BAS-2 Item 7: I appreciate the different and unique characteristics of my body.
BAS-2 Item 8 (Studies 1 and 2): My behavior reveals my positive attitude toward my body; for example, I walk holding my head high and smiling.
BAS-2 Item 8 (Study 3): My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile.
BAS-2 Item 9: I am comfortable in my body.
BAS-2 Item 10: I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).

Table 3
Study 1 variable means (*SDs*) and correlations.

Variable	M_{men}	SD_{men}	Range	1	2	3	4	5	6	7	8	9
1. BAS-2	3.82	0.72	1–5	–	.75***	−.64***	−.47***	−.42***	.51***	−.41***	.62***	.42***
2. Appearance Evaluation	3.51	0.83	1–5	.80***	–	−.71***	−.41***	−.31***	.44***	−.39***	.56***	.33***
3. Body Dissatisfaction	3.06	0.89	1–6	−.73***	−.76***	–	.61***	.48***	−.46***	.50***	−.58***	−.26***
4. Internalization	3.04	0.93	1–5	−.53***	−.43***	.59***	–	.66***	−.36***	.42***	−.37***	−.23***
5. Body Surveillance	4.05	1.23	1–7	−.49***	−.35***	.53***	.58***	–	−.35***	.37***	−.28***	−.21***
6. Intuitive Eating	3.68	0.55	1–5	.46***	.41***	−.50***	−.31***	−.30***	–	−.63***	.45***	.35***
7. ED Symptoms	2.13	0.60	1–6	−.44***	−.35***	.61***	.53***	.37***	−.42***	–	−.40***	−.22***
8. Self-esteem	3.20	0.50	1–4	.71***	.65***	−.54***	−.44***	−.29***	.40***	−.41***	–	.47***
9. Proactive Coping	3.79	0.49	1–5	.39***	.32***	−.21***	−.22***	−.10	.31***	−.11*	.52***	–
M_{women}				3.61	3.31	3.22	3.23	4.75	3.39	2.46	3.10	3.70
SD_{women}				0.82	0.88	1.22	1.08	1.14	0.49	0.68	0.51	0.49

Note. $N = 675$. Women $n = 367$, Men $n = 308$. Values for women are presented below the diagonal, whereas values for men are presented above the diagonal. For women, Body Dissatisfaction was assessed by the Body Shape Questionnaire-Revised-10. For men, Body Dissatisfaction was assessed by the Male Body Attitudes Scale total score. ED = Eating Disorder. Range = response scale range, not actual score range in the sample.

* $p < .05$.
*** $p < .001$.

reported at least a year of college education. Women's average BMI was 27.11 ($SD = 8.14$), and men's average BMI was 26.64 ($SD = 6.58$).

Measures. Measures were counterbalanced to control for order effects.

Body appreciation. The 10-item BAS-2, containing five original BAS items and five new items, was used in Study 2. Cronbach's alphas, calculated separately for women and men within both samples, were .96 for each of the four groups. Item-total correlations ranged between .66–.91 for college women, .76–.85 for college men, .73–.91 for community women, and .68–.90 for community men.

Impression management. The 20-item Impression Management subscale of the Balanced Inventory of Desirable Responding-6 (Paulhus, 1994) assesses participants' over-reporting desirable behaviors ("I always obey laws, even if I'm unlikely to get caught") and under-reporting undesirable behaviors (e.g., "I sometimes tell lies if I have to"). Item responses were provided along a 7-point scale ranging from labels of *not at all true* (scored as 1) to *very*

Table 4
BAS-2 incremental variance in eating behavior and well-being: Study 1.

	Total R^2	ΔR^2	ΔF	β	*t*
Criterion: Intuitive eating					
Women's overall $F(3, 363) = 44.38^*$					
Men's overall $F(3, 304) = 41.39^*$					
Step 1	.249/.241	.249/.241	60.29*/32.18*		
Appearance evaluation				.08/.23	1.51/3.29*
Body dissatisfaction				−.44/−.30	−6.24*/−4.20*
Step 2	.268/.290	.019/.049	9.67*/20.81*		
Appearance evaluation				−.07/.02	-0.80/0.29
Body dissatisfaction				−.37/−.23	-5.10*/−3.25*
Body appreciation				.25/.34	3.11*/4.56*
Criterion: ED symptomatology					
Women's overall $F(3, 363) = 85.87^*$					
Men's overall $F(3, 304) = 37.23^*$					
Step 1		.401/.257	.401/.257	121.64*/32.18*	
Appearance evaluation				.26/−.07	4.24*/−1.00
Body dissatisfaction				.81/.46	12.99*/6.49*
Step 2	.415/.269	.014/.012	8.99*/4.93		
Appearance evaluation				.39/.03	5.22*/0.40
Body dissatisfaction				.75/.42	11.65*/5.90*
Body appreciation				−.21/−.17	-3.00*/−2.22
Criterion: self-esteem					
Women's overall $F(3, 363) = 135.32^*$					
Men's overall $F(3, 304) = 73.35^*$					
Step 1	.427/.347	.427/.347	135.56*/81.14*		
Appearance evaluation				.56/.37	9.14*/5.64*
Body dissatisfaction				−.12/−.27	-1.99*/−4.04*
Step 2	.528/.420	.101/.073	77.70*/38.06*		
Appearance evaluation				.22/.12	3.32*/1.54
Body dissatisfaction				.03/−.18	0.54/−2.85*
Body appreciation				.56/.42	8.82*/6.17*
Criterion: proactive coping					
Women's overall $F(3, 363) = 24.22^*$					
Men's overall $F(3, 304) = 21.36^*$					
Step 1	.104/.112	.104/.112	21.03*/19.33*		
Appearance evaluation				.38/.31	4.98*/4.02*
Body dissatisfaction				.08/−.04	1.07/−0.49
Step 2	.167/.174	.063/.062	27.54*/22.66*		
Appearance evaluation				.12/.07	1.29/0.81
Body dissatisfaction				.20/.04	2.62*/0.53
Body appreciation				.44/.39	5.25*/4.76*

Note. $N = 675$; $n = 367$ women, $n = 308$ men. Body appreciation = BAS-2. ED = eating disorder. *F* and Step 2 values left of the diagonal were derived from the analysis of women's data. *F* and Step 2 values o the right of the diagonal were derived from the analysis of men's data.

* $p < .013$ (i.e., .05/4).

true (scored as 7), with each point in between labeled with a word descriptor. Appropriate items were reverse-scored and then all items were averaged, with higher scores corresponding to greater impression management. Among college students, estimates of its internal consistency reliability (i.e., Cronbach's αs = .80–.86) and 5-week test–retest reliability ($r = .77$) have been found to be adequate, and it has been shown to be consistently related to other measures of social desirability (Paulhus, 1994). For the current study, its alphas were .77 (women) and .83 (men) in the college sample and .86 (women) and .87 (men) in the community sample.

BMI. Participants reported their height and weight, which was used to calculate BMI.

Results

Preliminary analyses. For the college sample, 8.82% of participants had at least one missing data point. The count for missing data points ranged from 0 to 1.7% ($M = 0.59\%$). For the community sample, 9.71% had at least one missing data point, and missing data points ranged from 0 to 1.5% ($M = 0.55\%$) for each item. Therefore, available item analysis was used to handle missing data for both samples (i.e., mean total scores reflect the average of all available items, but missing items were not imputed with participants' mean scores).

Skewness and kurtosis values were below the critical limits (Kline, 2005); thus, no item or scale was transformed. The college sample differed from the community sample in terms of age, $t(578) = -18.36$, $p < .001$, BMI for women, $t(578) = -4.36$, $p < .001$, and BMI for men, $t(578) = -3.54$, $p < .001$. The BAS-2 was correlated −.33 with BMI in the college sample (−.32 for women, −.36 for men) and −.39 in the community sample (−.38 for women, −.42 for men; all *p*s < .001).

Confirming the BAS-2's unidimensional factor structure. Mplus Version 6.12 (Muthén & Muthén, 1998–2011) was used to conduct the CFAs and test for measurement invariance. Model fit was determined via consensus among three indices recommended by Hu and Bentler (1999): the Comparative Fit Index (CFI), the standardized root-mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Specifically, CFI values ≥ .95, SRMR values ≤ .08, and RMSEA values ≤ .06 suggest a good fit of the model to the data, whereas CFI values .90–.94, SRMR values .09–.10, and RMSEA values .07–.10 suggest an acceptable fit. Values outside of these criteria generally indicate a poor fit.

Each BAS-2 item was specified to load on the latent body appreciation factor. This unidimensional model provided an acceptable

Table 5
Model fit indices for the confirmatory factor analyses (CFAs) and tests of measurement invariance (MI) of the BAS-2 items: Studies 2 and 3.

Model	χ^2	*df*	CFI	RMSEA	95% CI	SRMR
Study 2						
College Women and Men	73.89	35	.984	.065	.044, .086	.020
College Women	61.35	35	.983	.063	.039, .096	.024
College Men	61.57	35	.970	.086	.049, .121	.030
Community Women and Men	108.40	35	.976	.081	.064, .099	.023
Community Women	57.96	35	.985	.066	.033, .096	.023
Community Men	75.51	35	.973	.083	.057, .109	.028
MI College Women and Men						
Configural Invariance	122.92	70	.978	.076	.053, .098	.029
Factor Loading Invariance	135.60	79	.977	.074	.052, .095	.057
Intercept Invariance	156.14	88	.972	.077	.057, .096	.072
MI Community Women and Men						
Configural Invariance	133.47	70	.980	.076	.056, .095	.028
Factor Loading Invariance	143.02	79	.979	.072	.052, .090	.047
Intercept Invariance	188.05	88	.969	.085	.068, .101	.053
MI College and Community Samples						
Configural Invariance	182.29	70	.980	.074	.061, .088	.023
Factor Loading Invariance	203.14	79	.978	.074	.061, .086	.045
Intercept Invariance	235.06	88	.974	.076	.064, .088	.044
Study 3						
Community Women and Men	133.95	35	.976	.088	.072, .104	.020
Community Women	85.66	35	.978	.089	.066, .113	.022
Community Men	81.29	35	.974	.090	.066, .115	.026
MI Community Women and Men						
Configural Invariance	163.20	70	.977	.090	.073, .107	.026
Factor Loading Invariance	175.03	79	.976	.086	.069, .102	.044
Intercept Invariance	194.69	88	.973	.085	.070, .010	.044

Note. Study 2: College women $n = 161$, college men $n = 102$; MTurk community women $n = 150$, MTurk community men $n = 167$. Study 3: MTurk community women $n = 192$, MTurk community men, $n = 190$. CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Square Residual, CI = Confidence Interval, MI = Measurement Invariance.

fit to the data for the college and community samples, as well as for women and men within each sample. Table 5 contains the fit indices, and Table 1 includes the item-factor loadings. The factor structure obtained in Study 1, then, was confirmed in Study 2 for college students as well as community participants.

Tests of measurement invariance. We determined whether the BAS-2 was invariant across sex in the college sample, sex in the community sample, and sample type (college versus community). Invariance was tested at three levels: (a) configural (i.e., whether similar factors are measured), (b) factor loading (i.e., whether the magnitude of factor loadings is the same), and (c) intercept (i.e., whether the intercept of the regression relating each item to its factor is the same; Chen, 2007). Configural invariance is determined by CFI, SRMR, and RMSEA model fit indices. Each of the three configural invariance models tested fit the data well (see Table 5) for (a) sex in the college student sample, (b) sex in the community sample, and (c) sample type (college student versus community). Thus, the BAS-2 items formed a similar body appreciation latent factor for women and men from both samples.

Next, factor loading invariance was evaluated. Factor loadings were constrained equally across (a) women and men in the college student sample, (b) women and men in the community sample, and (c) college students and community participants, and these three models were evaluated against their respective configural models. A chi-square difference (i.e., $\Delta\chi^2$) test allows a statistical comparison between nested models (a significant difference between models indicates non-invariance). However, the $\Delta\chi^2$ test is almost always statistically significant with large sample sizes (as in the present study), and therefore is an impractical and unrealistic criterion on which to base evidence of invariance (e.g., Byrne & Stewart, 2006; Chen, Sousa, & West, 2005). For this reason, practical model fit changes should be explored between the factorial and configural models: if ΔCFI $\geq -.010$ *and* ΔRMSEA $\geq .015$ *or* ΔSRMR $\geq .030$, then factor loadings are non-invariant between groups (Chen, 2007). We controlled for the number of $\Delta\chi^2$ comparisons when determining statistical significance ($p = .05/6 = .008$). Each factor loading invariant model tested provided a good fit to the data (see Table 5) and did not differ significantly from the configural model: $\Delta\chi^2(9) = 12.68$, $p = .178$ for college women and men; $\Delta\chi^2(9) = 9.55$, $p = .388$ for community women and men; and $\Delta\chi^2(9) = 20.85$, $p = .013$ between college students and community participants. For each of these three models, the changes in the fit indices did not meet Chen's (2007) criteria for factor loading non-invariance.

Last, intercept invariance was evaluated, and all item-factor intercepts were constrained equally across (a) women and men in the college student sample, (b) women and men in the community sample, and (c) college students and community participants. These three models were evaluated against their respective factor loading invariance models. Significant $\Delta\chi^2$ values ($p < .008$) and model fit changes (i.e., ΔCFI $\geq -.010$ *and* ΔRMSEA $\geq .015$ *or* ΔSRMR $\geq .010$) indicate intercept non-invariance; however, the model fit changes were considered the more persuasive and practical evaluation of non-invariance (Chen, 2007). According to the changes in the fit indices, intercept invariance was evidenced for all three comparisons (see a–c above). Whereas $\Delta\chi^2$ for the model evaluating college women and men was nonsignificant, the $\Delta\chi^2$ for the model evaluating community women and men, $\Delta\chi^2(9) = 45.03$, $p < .001$, and the $\Delta\chi^2$ for the model evaluating college and community participants, $\Delta\chi^2(9) = 31.92$, $p < .001$, were significant. Additional item-level analyses (Byrne & Stewart, 2006) were performed to identify which BAS-2 item intercepts may be non-equivalent. Three items were non-equivalent (per $\Delta\chi^2$) between women and men in the community sample: Item 4 intercept, $\Delta\chi^2(1) = 9.22$, $p = .002$, Item 9 intercept, $\Delta\chi^2(1) = 8.04$, $p = .005$, and Item 10 intercept, $\Delta\chi^2(1) = 14.03$, $p < .001$. Yet, the fit indices for these three items did not meet Chen's criteria for non-invariance (Item 4 intercept: ΔCFI $= -.001$, ΔRMSEA $= .003$, and ΔSRMR $= .004$. Item 9 intercept: ΔCFI $= -.001$, ΔRMSEA $= .003$, and ΔSRMR $= .005$. Item 10 intercept: ΔCFI $= -.003$, ΔRMSEA $= .006$, and ΔSRMR $= .005$). A post hoc exploration revealed that only the intercept for Item 9 was non-equivalent, $\Delta\chi^2(1) = 17.16$, $p < .001$, in the college and community

sample comparison, but did not meet Chen's criteria for intercept non-invariance (Item 9 intercept: ΔCFI = –.002, ΔRMSEA = .004, and ΔSRMR = .002). These findings uphold the intercept invariance of the BAS-2 between college women and men, community women and men, and college and community samples.

Given that the BAS-2 demonstrated measurement invariance, average BAS-2 scores can be meaningfully compared between college women and men, community women and men, and college and community samples (see Table 2). College women and men differed significantly (i.e., p = .05/10 items, or .005) on nine BAS-2 items; in each case, men's mean item score was higher (with an overall moderate degree of difference; Cohen, 1992). In the community sample, however, women and men did not differ on any BAS-2 item, with the overall effect size being very small. College and community women did not differ on any BAS-2 item; and there was no degree of difference between the groups. However, college and community men differed on all 10 BAS-2 items, with the overall degree of difference being large. Given that college and community men differed in terms of age and BMI, we conducted an exploratory path analysis with bootstrapping to determine whether age and BMI accounted for their different BAS-2 scores. We found that BMI partially accounted for college and community men's BAS-2 score differences, as demonstrated by the significant indirect effect, β = –.061 (95% confidence interval [CI] = –.109, –.011), $t(263) = -2.39$, p = .017, but age did not, β = .024 (95% CI = –.062, .110), $t(263) = 0.55$, p = .584. Sample type independently accounted for unique variance in BAS-2 scores above and beyond BMI and age, β = –.282, $t(263) = -4.28$, $p < .001$, indicating that significant differences remained in college and community men's BAS-2 scores even after accounting for their BMI and age differences.

Discriminant validity. Pearson r correlations between BAS-2 scores and impression management were .11 (p = .176) for college women, .22 (p = .041) for college men, .21 (p = .009) for community women, and .23 (p = .007) for community men. The strengths of the correlation coefficients show that BAS-2 scores did not overlap substantially (i.e., between 1.21% and 5.29%) with impression management.

Study 3

Upon review for publication, an issue was raised that the example provided in Item 8 (i.e., "I walk holding my head high and smiling") might not be inclusive of individuals with a physical disability. Thus, we modified this example to "I hold my head high and smile." Acknowledging that changing an item may alter the BAS-2's structural and psychometric properties, we re-explored the factor structure and internal consistency reliability of the BAS-2 with this revised item to determine whether any substantial alterations were observed. We further examined the strength of the correlations between the BAS-2 and BMI, and compared these correlations to the community participant sample in our Study 2 data, to determine whether the BAS-2's validity evidence may be compromised with this alteration. Last, we examined whether any mean differences in BAS-2 scores were evidenced between the community participant samples in Studies 2 and 3.

Method

Participants and procedure. The BAS-2 with the modified Item 8 example was embedded within a larger survey including nine measures, which was approved by the IRB from The Ohio State University. The BAS-2 was counterbalanced with the other measures. Community participants who were from the U.S., completed at least 100 hits, and had their previous work approved at least 98% of the time were introduced to this study as "an investigation of attitudes about food, eating, and body." If interested, they signed up via the MTurk worker hit website, provided their consent, and completed the survey via SurveyMonkey. Participants each received $1.25 in exchange for completing the survey.

Participants were deleted from the data set if they had participated in Study 2 (n = 1), failed the validity question embedded between BAS-2 Items 9 and 10 (n = 7), terminated early (n = 11), or had significant missing data (n = 8). This screening resulted in a final data set of 382 participants (192 women and 190 men) from 45 U.S. states. They ranged in age from 18 to 75 (M_{age} = 33.38, SD = 11.08). An age breakdown is as follows: 18–25 (n = 95; 24.9%), 26–35 (n = 155; 40.6%), 36–45 (n = 68; 17.8%), 46–55 (n = 38; 9.9%), and 56–65 (n = 24; 6.3%). Participants identified as White (71.9%), African American (8.4%), Asian American (9.2%), Latina/Latino (6.3%), Native American (0.5%), or multiracial (3.6%). One (0.3%) did not complete high school, 13.6% finished high school, and the remaining participants (86.1%) reported at least a year of college education. Average BMI was 26.82 (SD = 7.30) for women and 26.54 (SD = 5.96) for men.

Measures. The 10-item BAS-2 with the modified Item 8 example was analyzed (see Appendix). Participants self-reported their height and weight, which were used to calculate BMI.

Results

Preliminary analyses. For the community sample, 3.93% had at least one missing data point, and missing data points ranged from 0 to 1.0% (M = 0.42%) for each BAS-2 item. Therefore, available item analysis was used to handle missing data. Skewness and kurtosis item values were below the critical limits (Kline, 2005) making item transformation unnecessary.

Despite the altered wording, the Study 3 Item 8 means were similar to the Study 2 Item 8 means for the online community sample of women, $t(351) = 1.60$, p = .111, and men, $t(290) = -0.98$, p = .331. Community women, however, scored lower on the total BAS-2 in Study 3 when compared to community women in Study 2, $t(351) = 2.52$, p = .012. The means were similar between community men's total BAS-2 scores in Studies 2 and 3, $t(290) = -0.85$, p = .399.

Internal consistency reliability. Cronbach's alpha was .97 for the BAS-2 items (.97 for women, .96 for men). Item-total correlations ranged between .76–.92 for women and .70–.89 for men. The Item 8 item-total correlation was .85 and .81 for women and men, respectively. Therefore, the revision of the example in Item 8 did not appear to alter the internal consistency of the BAS-2.

Factor structure and measurement invariance. The BAS-2 containing the revised Item 8 example had high item-factor loadings (see Table 1) and provided an acceptable fit to the data (see Table 5). We further evaluated its measurement invariance at the configural, factor loading, and intercept levels. The configural invariance model fit the data (see Table 5), suggesting that the underlying latent factor was similar for women and men. The factor loading invariance model was not different from the configural invariance model, $\Delta\chi^2(9) = 11.83$, p = .223, indicating that the factor loadings were invariant between women and men. While the intercept invariance model suggested possible non-invariance for women and men, $\Delta\chi^2(9) = 19.66$, p = .020, at closer inspection (a) all item intercepts were equivalent except for Item 9, $\Delta\chi^2(1) = 8.05$, p = .005, and (b) the fit indices for Item 9 did not meet Chen's criteria for non-invariance (ΔCFI = –.002, ΔRMSEA = .002, and ΔSRMR = .001). The intercept invariance model, therefore, was

upheld. In sum, altering Item 8 did not appear to change the factor structure of the BAS-2.

Validity evidence. The BAS-2 was correlated negatively with BMI ($rs = -.38$ for women, $-.38$ for men; $ps < .001$). These values were not significantly different from Study 2 associations between the BAS-2 and BMI for online community women (Fisher's $z = 0.04$, $p = .968$) or online community men (Fisher's $z = 0.40$, $p = .689$).

Discussion

In these three studies, we reported on the development and psychometric evaluation of the BAS-2 with samples of college and online community (MTurk) women and men from the U.S. The final 10-item BAS-2 includes five of Avalos et al.'s (2005) original items and five revised or newly developed items. Overall, the BAS-2's unidimensional factor structure, reliability indices (i.e., estimated internal consistency and 3-week stability), and validity estimates (i.e., construct, criterion, discriminant, and incremental) were upheld for participants. Also, the BAS-2 demonstrated measurement invariance at the scale, factor loading, and intercept levels. These findings indicate that (a) the latent body appreciation construct represented by BAS-2 items is the same for college women and men, community women and men, and college and community samples; and (b) BAS-2 items and mean scores can be compared amongst these groups.

Importantly, the BAS-2 improved upon the three limitations of the original BAS. First, the BAS-2 eliminates the need for sex-specific versions required by the original BAS, improving the ease of administration in research and clinical practice. Second, original BAS items that had relatively low item-factor loadings were rewritten or replaced with items that have stronger loadings on the body appreciation latent factor—all BAS-2 items now load strongly onto this latent factor. Third, the BAS-2 reflects current understanding of the positive body image construct, whereas the original BAS was written before substantial research on positive body image was undertaken. Biased language (e.g., "flaws") and assumptions (i.e., that body appreciation reflects the absence of attention to weight and/or body shape) are not represented in BAS-2 items. Moreover, the BAS-2 contains three fewer items than its original version, which expedites data collection efforts for scholars trying to keep their surveys as short as possible while maintaining the integrity of the construct. These features make the BAS-2 a viable option for both researchers and clinicians.

To understand the adaptive properties of body appreciation, it is important to note how BAS-2 scores are linked with other body-related, eating, and well-being measures; we provide these data for college students. For both women and men, higher levels of body appreciation corresponded to greater perceived self-attractiveness and lower body dissatisfaction. These links were strong in size, but not strong enough to overshadow the distinctiveness and utility of body appreciation. After controlling for appearance evaluation and body dissatisfaction, higher levels of body appreciation were linked to higher intuitive eating and psychological well-being (i.e., self-esteem and proactive coping), and for women, lower eating disorder symptomatology. Moreover, body appreciation was not strongly tied to impression management in college students or community participants, suggesting that those who report higher body appreciation are not simply embellishing their positive body attitudes to present a favorable impression of themselves. Collectively, these findings support body appreciation, assessed by the BAS-2, as an adaptive construct relatively immune to impression management.

It is also noteworthy that the BAS-2 was inversely related to BMI to a moderate degree among college and community women and men. Similar findings were found with the original BAS for women in Western countries such as the U.S. (Avalos et al., 2005; Kroon Van Diest & Tylka, 2010; Satinsky et al., 2012; Tylka & Kroon Van Diest, 2013) and Germany (Swami, Stieger, et al., 2008) and certain non-Western countries such as Brazil (Swami et al., 2011), Malaysia (Swami & Chamorro-Premuzic, 2008), and Indonesia (Swami & Jaafar, 2012). This inverse relationship between body appreciation and BMI may reflect the cultural bias of leanness found within these countries (Bordo, 2003; Grogan, 2008). Bordo addressed the sociocultural meanings attached to being lean within countries with Western influences: excess flesh (for women and men) has become linked to lower morality, personal inadequacy, lack of will and control, and disorder. For those individuals who internalize this cultural weight stigma, it may be a challenge for them to acknowledge, experience, and report love, acceptance, and respect for their bodies. Conversely, the association between BMI and body appreciation was not found among women from Zimbabwe (Swami, Mada, et al., 2012), who tend to not idealize leanness (Grogan, 2008). Further, Zimbabwean women who migrated to Britain had significantly lower body appreciation than their peers in Zimbabwe (Swami, Mada, et al., 2012), suggesting that exposure to Westernized cultural influences may impact body appreciation.

In Study 2, mean differences were noted in total BAS-2 scores between college women and men, but not between community women and men. College men reported higher levels of body appreciation than college women, with the degree of difference being moderate in strength; yet, the degree of difference between community women and men was very small. In contrast, college men reported higher body appreciation than community men, with the degree of difference being large. As reflected in the demographic data, community men reported older ages and higher BMIs than college men. A post hoc analysis in Study 2 indicated that their BMI partially, but not fully, accounted for their different BAS-2 scores, whereas age did not. This finding suggests that the differences between college and community men cannot be entirely explained by differences noted in their BMIs or ages; yet, BMI may be one factor that explains some of this difference. It is important to assess whether body appreciation declines over time as men have a higher BMI and whether this cross-sectional difference is a function of a cohort effect (e.g., generational and/or sample type), or other confounding variables. In contrast, college women and community women in Study 2 reported similar levels of body appreciation, even though community women reported older ages and higher BMIs than college women. Body appreciation therefore needs to be explored across time, as certain factors may protect women's body appreciation from decreasing as they age (Tiggemann & McCourt, 2013) and other factors may be related to men's body appreciation declining across adulthood.

Limitations and Future Research

It is important to acknowledge limitations of the present study. First, the samples in the present study are limited in their generalizability. The majority of participants identified as White, and all data were collected from the U.S. Participants also self-selected into these studies, which may have led to biases in the sample such that only those interested in and curious about body attitudes completed the survey. Participants with incomplete data or who did not respond correctly to the validity questions were deleted. As a result, our sample may represent the responses of only a subset of the population. Researchers need to explore positive body image, as assessed via the BAS-2, among various ethnic, socioeconomic, and sexual orientation groups and determine whether it evidences reliability, validity, and measurement invariance among diverse samples. This problem was noted for the original BAS, which evidenced a rather weak, 3-item secondary body investment

factor in certain non-Western samples (Swami et al., 2011; Swami & Chamorro-Premuzic, 2008; Swami, Hwang, et al., 2012; Swami & Jaafar, 2012; Swami, Mada, et al., 2012). The items loaded on this secondary factor were not included in the BAS-2 because (a) they often resulted in low subscale alphas, (b) two of the three items were not consistent with recent findings on positive body image (i.e., the items assume that a lack of focus on appearance is equivalent to higher body appreciation), and (c) the remaining item resulted in sex-specific forms. Yet, further work with the BAS-2 is needed to establish whether its current items form a single factor within various cultures.

Second, similar to other measures of body image, the BAS-2's self-report design relies on individuals accurately portraying their attitudes toward their body. Despite the low conceptual overlap with impression management, there is no way to discern whether responses were honest and accurate. Because all items are positively scored, extreme response bias and acquiescence bias may influence individuals' scores.

Third, it is unknown whether the BAS-2 represents a comprehensive measure of positive body image. What is known thus far about positive body image has been extracted from a few qualitative studies that identified several interrelated characteristics: body appreciation (more narrowly defined as gratitude toward the body), broadly defining beauty rather than adopting media appearance ideals, body acceptance and love, and inner positivity influencing outer demeanor (Frisén & Holmqvist, 2010; Wood-Barcalow et al., 2010). Other authors have proposed that body awareness and body responsiveness (i.e., embodiment) may be yet another characteristic of positive body image (Daubenmier, 2005; Piran & Teall, 2013). The BAS-2 adopts Avalos et al.'s (2005) broader definition of body appreciation, which includes these aforementioned characteristics; however, because we did not develop a handful of BAS-2 items to represent each of these characteristics, we do not know whether each would be a distinct factor of a broader positive body image construct.

Fourth, BAS-2 items (like the original BAS items) were designed to be nonspecific and encompassing, allowing the respondent the freedom to decide whether to evaluate their bodies based on appearance, function, well-being, health, and other characteristics. When designing the items, we attempted to connote a whole sense of integrated self, not to dissect and tease apart the various body components/aspects which is what people often do when dissatisfied with and critical of their bodies. In the future, researchers may want to assess which body-related qualities respondents have in mind as they provide their answers to the BAS-2 items. Given that the BAS-2 was highly correlated with the Appearance Evaluation subscale of the MBSRQ (64% conceptual overlap), it could be argued that many participants were considering their appearance as they completed the BAS-2. Whether they were also considering the functionality and health of their bodies has yet to be determined. Interestingly, the newly developed item "I appreciate the pleasures and the functions my body provides for me" was excluded because of its lower factor loading in comparison to the other 10 BAS-2 items. Also, those who completed the BAS-2 after the appearance-specific body image measures in the counterbalanced sequence may have been primed with an "appearance" conceptual set as they filled out the BAS-2. Unfortunately, SurveyMonkey did not record which participants completed the BAS-2 before the other body image measures, so statistical comparisons of the various sequences could not be made.

Fifth, this study was correlational in design and thus no inferences can be made about the directionality of links between body appreciation and other variables investigated. It is necessary for researchers to conduct longitudinal research on body appreciation. In particular, body appreciation could be explored as a protective factor. Protective factors can reduce the likelihood of maladaptive outcomes (e.g., eating disorder symptomatology) in various ways by: (a) decreasing these outcomes directly, (b) preventing the initial occurrence of a risk factor (e.g., internalization of sociocultural beauty standards), (c) interacting with a risk factor to interrupt its deleterious effects, and (d) disrupting the mediational chain through which a risk factor operates (Crago, Shisslak, & Ruble, 2001). Halliwell (2013) has begun this research using experimental designs investigating whether body appreciation protects women from wanting to change their appearance after viewing thin models. Experimental and correlational research could explore body appreciation as a protective factor in additional ways, and longitudinal research could provide more information on the directionality of body appreciation's protective influences.

Applications of the BAS-2

The BAS-2 can be incorporated in research, clinical, prevention, and educational contexts to understand and promote body appreciation. We recommend administering the version of Item 8 with the revised example (i.e., "My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile"). The factor structure and internal consistency reliability of the BAS-2 appears to be largely unchanged with this modified example, as evidenced in our Study 3 sample of community women and men. This item is more inclusive of physical ability than the previous Item 8 item examined in Studies 1 and 2. Even with the modified phrasing, however, this item might be perceived by some cultures as arrogance and not necessarily as a component of positive body image. Researchers and clinicians who utilize the BAS-2 can choose to keep the original Item 8 example, use the revised Item 8 example examined in Study 3, delete the example but retain the item, or (with permission from the authors) further modify the example.

Within eating disorder treatment programs, the BAS-2 could be used in conjunction with eating-related measures to assess client progress and treatment effectiveness. Because the BAS-2 predicts incremental variance in women's eating disorder symptoms, it may be helpful to assess when determining female clients' risk for relapse of an eating disorder. Clinicians can also use the BAS-2 items with clients who have eating disorders or body image disturbances as a foundation for discussing positive body image and ways clients can show appreciation for their bodies. Because body appreciation focuses more on the internal characteristics of acceptance, love, and respect for the body, and less on external appearance, promoting body appreciation may be helpful for clients with anorexia nervosa as they engage in weight restoration. Perhaps clients who undergo health-related physical transformations (e.g., from cancer treatments and reconstructive surgery) may benefit from focusing on body appreciation within treatment. Within college counseling centers, the BAS-2 could be given to students who have treatment goals to adopt more positive body attitudes. Within community-based body image, intuitive eating, and/or anti-dieting programs, the BAS-2 could be used to estimate participants' progress and program effectiveness. Within school settings, educators (e.g., health and physical education teachers) can use the BAS-2 items to develop lesson plans that approach body image from a perspective of hygiology rather than pathology (Cook-Cottone, Tribole, & Tylka, 2013) to prevent negative body image, self-objectification, and eating disorder symptoms (Tylka & Augustus-Horvath, 2011). Indeed, approaching health-related topics from a perspective of well-being rather than disorder may improve adolescents' attention and adherence to the information provided (Jaser, Patel, Linsky, & Whittenmore, in press) and may be less likely to place students at risk for learning and adopting disordered eating behaviors as some primary prevention eating disorder programs inadvertently do (Mann et al., 1997).

Conclusion

While the original 13-item BAS is a psychometrically strong instrument of body appreciation in Western samples (Tylka, 2013), the 10-item BAS-2 has two key advantages over its predecessor: the BAS-2 contains one form for both women and men and its items more closely represent current knowledge on positive body image. The present study revealed that the psychometric properties of the BAS-2 were upheld across samples of U.S. college and community women and men, with the community sample representing participants across most U.S. states. Moreover, the BAS-2 is easy to administer and score. These features make the BAS-2 a viable choice for scholars who need to assess body appreciation within research, clinical, prevention, and educational settings.

Appendix. Body Appreciation Scale-2 (Final Version)

Permission to use this measure is not required. However, we do request that you notify the corresponding author via email if you use the Body Appreciation Scale-2 in your research. Please seek permission if any item is modified.

For each item, the following response scale should be used: 1 = Never, 2 = Seldom, 3 = Sometimes, 4 = Often, 5 = Always.

Directions for participants: Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

1. I respect my body.
2. I feel good about my body.
3. I feel that my body has at least some good qualities.
4. I take a positive attitude towards my body.
5. I am attentive to my body's needs.
6. I feel love for my body.
7. I appreciate the different and unique characteristics of my body.
8. My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile.
9. I am comfortable in my body.
10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors).

Scoring Procedure: Average participants' responses to Items 1–10.

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