

## **Psychometric properties of the Japanese version of the Body Appreciation Scale-2 for Children**

**(BAS-2C)**

### **Abstract**

Despite the heightened interest in positive body image research in recent years, few studies have explored positive body image among children. Examining the Body Appreciation Scale-2 for Children (BAS-2C) using a different cultural sample than the original version would thus be beneficial in extending the research on this topic. This research aimed to validate the BAS-2C for use in Japan. The measures were administered to 243 children, and the participants completed the survey in their classrooms with the support of a teacher. The survey was repeated after four weeks. Confirmatory factor analysis showed that the one-factor structure was the same as that of the original version, and the BAS-2C was invariant across gender. Scores on the BAS-2C demonstrated good internal consistency and test-retest reliability over a four-week period. In addition, construct validity was accrued through the BAS-2C's correlation with body dissatisfaction (among girls), self-esteem, and life satisfaction. Results indicated that the BAS-2C shows good psychometric properties among Japanese children, and supports further research into positive body image in this group.

Key words: children, Body Appreciation Scale-2C, positive body image, Japanese, assessment

## 1. Introduction

Increasing research in the field of body image has shifted away from a traditional focus on pathology and distress and towards the construct of positive body image (Tylka, 2011; Tylka & Wood-Barcalow, 2015b). Positive body image is conceptualized as an independent construct, above and beyond the absence of negative body image (Tylka & Wood-Barcalow, 2015a). One of the most studied components of positive body image is body appreciation (Avalos, Tylka, & Wood-Barcalow, 2005). Body appreciation is defined as accepting, respecting, and holding favorable opinions toward the body, while also rejecting media-promoted appearance ideals as the only form of human beauty (Avalos et al., 2005). Body appreciation is associated with a range of well-being indicators, including optimism, positive affect, life satisfaction, and healthy behaviors (Alleva, Martijn, Veldhuis, & Tylka, 2016; Andrew, Tiggemann, & Clark, 2016; Swami, Ng, & Barron, 2016; Tylka & Kroon Van Diest, 2013). The first developed measure of body appreciation was the Body Appreciation Scale (BAS) (Avalos et al., 2005). Despite demonstrating excellent psychometric properties among adults (Avalos et al., 2005; Tylka, 2013) and young adolescents (Moreira, Lorenzato, Neufeld, & Almeida, 2018), the BAS has some limitations. These include the need for separate forms for women and men due to a gender-specific item; negative body orientation language (i.e., “Despite its flaws, I accept my body for what it is” and “Despite its imperfections, I still like my body”); and its one-factor structure does not replicate well in some cultures (Swami & Chamorro-Premuzic, 2008; Swami & Jaafar, 2012). Considering these limitations, Tylka and Wood-Barcalow (2015a) developed a revised version of the scale—the Body Appreciation Scale-2 (BAS-2). Scores on the BAS-2 demonstrated good reliability and validity among adults (Tylka & Wood-Barcalow, 2015a; Kling et al., 2019) and adolescents (Alcaraz-Ibáñez, Cren Chiminazzo, Sicilia, & Teixeira Fernandes, 2017; Lemoine et al., 2018).

Body concerns affect children in addition to adults. Desire for thinness has been documented in young girls from the age of six (Dohnt & Tiggemann, 2005, 2006), and body image concerns have been shown to increase from childhood to adolescence (Frisén, Lunde, & Berg, 2015; Zimmer-Gembeck, Webb, Farrell, & Waters, 2018). Research on the development of positive body images is limited. Studies exploring the developmental trajectory of positive body image from childhood to young adulthood would be extremely informative. However, such research would require age-appropriate measures (Tiggemann, 2015). Thus, scholars have called for the development and validation of measures of positive body image for children (Halliwell, 2015; Webb, Wood-Barcalow, & Tylka, 2015).

To address this issue, Halliwell, Jarman, Tylka, and Slater (2017) altered the BAS-2 to be age appropriate for children (BAS-2C) in the UK. Specifically, Halliwell et al. (2017) conducted a pilot study examining the appropriateness of the BAS-2 items for children, following which a

modified version was proposed, adapted to this age group. An examination of the psychometric properties of the BAS-2C among children aged 9-11 years supported its unidimensional structure, internal consistency ( $\alpha = .89$  for boys,  $\alpha = .90$  for girls); test-retest reliability over a six-week period ( $r = .81$  for both boys and girls); and construct, criterion-related, and incremental validity (Halliwell et al., 2017).

Despite the versatility of the BAS-2 in its applicability to adults in various cultures (Alleva et al., 2016, Alleva, Paraskeva, Craddock, & Diedrichs, 2018; Junqueira et al., 2019; Kertechian & Swami, 2017; Meneses, Torres, Miller, & Barbosa, 2019; Namatame, Uno, & Sawamiya, 2017; Swami et al., 2019), the usability of the BAS-2C in non-English-speaking cultures has not been reported. Considering that the meaning of the items in the scale might differ across children of other cultures/languages, investigating the BAS-2C in a different culture would expand the work of Halliwell et al. (2017) and the research regarding positive body image.

In Japan, eating disorders are prevalent among children from the fourth grade, and therefore, an early preventive intervention is imperative (Okamoto & Miyake, 2015). Body appreciation could be a primary factor in the prevention of eating disorders, as it correlates negatively with disordered eating (Namatame et al., 2017; Tylka & Wood-Barcalow, 2015a). Furthermore, studies have revealed that while women with high levels of body appreciation did not experience increased body dissatisfaction following exposure to thin ideal images in the media, those with low body appreciation experienced increased body dissatisfaction after exposure (Andrew, Tiggemann, & Clark, 2015; Halliwell, 2013). As exposure to thin-ideal media images is linked to body dissatisfaction and disordered eating (Grabe et al., 2008; Groesz et al., 2002), increasing body appreciation could contribute to the prevention of body image-related issues such as eating disorders. Consequently, to enhance the study of the prevention of eating disorders among Japanese children, developing a Japanese version of BAS-2C could be beneficial. For example, developing a Japanese version of BAS-2C will allow researchers to investigate the relationship between body appreciation and disordered eating among Japanese children. Moreover, it will enable an examination of the cultural influence on the relationship between body appreciation and disordered eating by comparing English-speaking countries to Japan. Accordingly, the purpose of the present study was to validate the BAS-2C among Japanese children. Therefore, we investigated its factor structure and the internal consistency, test-retest reliability, and construct validity of its scores.

## **2. Method**

### **2.1. Participants and Procedures**

This study was approved by the ethics committee at the University of Tsukuba (approval number: 筑 29-147). The school's principal provided a written informed consent. After obtaining

passive parental consent, wherein parents could choose to exclude their child from the research, the children's verbal assent was obtained by parents who orally asked them for participation. Additionally, in order to make sure that all children were informed and given a choice to agree/disagree to participate in the study, the teachers also informed the children about the study and orally asked them for participation.

The sample size was determined on the basis of the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN; Mokkink et al., 2012), which suggested that at least 100 participants were required for this study, as well as the number of participants needed for each parameter estimated in confirmatory factor analysis (Hu & Bentler, 1999), which suggested that at least 100 boys and 100 girls were required. A sample of 243 children from Grades 3 to 6, who were recruited from an elementary school, completed the survey. The paper survey was conducted in their respective classrooms with a teacher reading items aloud to the class and providing support (i.e., the children could ask the teacher in case they did not understand the meaning of a word). The teacher was provided with the information of survey administration, administering test-like conditions and avoiding desk patrols to protect privacy. The questionnaires were administered again, four weeks later, and the researcher was not in the room when the surveys were completed to exclude the researcher's intentional instructions and experimenter effects. The first administration took approximately 20 minutes to complete, including not only the BAS-2C but also scales assessing body dissatisfaction (for girls), self-esteem, and life satisfaction to investigate the construct validity of the BAS-2C's scores. The second administration took approximately five minutes to complete and included only the BAS-2C to investigate test-retest reliability.

Eleven participants were excluded because their submissions contained significant missing data (i.e., leaving > 20% of the items blank in at least one measure), and seven participants were removed for having at least one missing item in the BAS-2C. This resulted in a sample of 225 children (53.8% girls) aged 8–12 years ( $M_{\text{age}} = 10.23$ ,  $SD_{\text{age}} = 1.24$ ).

## 2.2. Measures

**2.2.1. Demographics.** Participants reported their school year, age, and gender.

**2.2.2. Body appreciation.** The BAS-2C was developed to assess children's positive body image (Halliwell et al., 2017). This scale consists of 10 items (e.g., "I feel good about my body") and employs a 5-point Likert scale (1 = *Never*, 2 = *Rarely*, 3 = *Sometimes*, 4 = *Often*, and 5 = *Always*) and its scores demonstrated sufficient reliability and validity among British children (Halliwell et al., 2017).

Consistent with the COSMIN recommendations (Mokkink et al., 2012), the BAS-2C items were first translated from English to Japanese by four bilingual individuals who are unaffiliated with the study. Then, two psychology professors and seven graduate students examined the translated

text. Subsequently, another four bilingual individuals translated the items back to English. Lastly, the items were evaluated by the two psychology professors and the seven graduate students until they reached an agreement that the translation did reflect the same meaning as that of the original scale. The conceptual equivalence of the original and back-translated versions was confirmed by the original developer of the BAS-2C.

**2.2.3. Body dissatisfaction.** Several versions of the Japanese Body Silhouette Scale exist, and in the present study, version-IV (Suzuki & Nakamura, 2009) was used to assess body dissatisfaction among girls. Only girls rated the scale because no male version of it currently exists, and there is no appropriate body dissatisfaction scale in Japan with good psychometric properties among boys. This scale consists of nine progressively bigger silhouettes of girls, from the leanest (Rohrer index =  $85 \text{ kg/m}^3 \times 10$ ) to the largest (Rohrer index =  $165 \text{ kg/m}^3 \times 10$ ). According to the recommendation of original scale developer, five silhouettes (Rohrer index = 85, 105, 125, 145, 165) were used. The score ranges between 1 (leanest) and 5 (largest). The girls chose the silhouette that closely matches their image of their own bodies at the time (current figure). Next, they chose the silhouette they would like to have (ideal figure). A score for body dissatisfaction was derived by subtracting the figure chosen for current figure from the ideal figure, so that higher scores reflect greater body dissatisfaction.

**2.2.4. Self-esteem.** The Rosenberg Self-Esteem Scale (Rosenberg, 1965), modified for children in Japan (Sakurai, 2000) was used to measure self-esteem. This scale consists of 10 items (e.g., “I feel that I have a number of good qualities”) and uses a four-point Likert scale from *No* (scored as 1) to *Yes* (scored as 4). The items are averaged, with higher scores indicating greater self-esteem. In this study, Cronbach’s alpha for self-esteem were .77 for boys and .81 for girls, which are comparable to alpha coefficients reported in other studies, for example,  $\alpha = .82$  for children aged 7–12 years (Kaufman, Kretschmer, Huitsing, & Veenstra, 2018).

#### **2.2.5. Life satisfaction**

The Japanese version of the Student’s Life Satisfaction Scale (SLSS; Huebner, 1991; Yoshitake, 2010), a self-reported measure for ages 8–18 years, was used to measure life satisfaction. This scale comprises seven items (e.g., “My life is going well”) rated on a six-point Likert scale from *Strongly Disagree* (scored as 1) to *Strongly Agree* (scored as 6). The items are averaged, with higher scores corresponding to greater life satisfaction. In this study, Cronbach’s alphas were .82 for boys and .83 for girls, which compare favorably to alpha coefficients reported in other research, for example,  $\alpha = .82$  for children aged 8–15 years (Easterbrook, Wright, Dittmar, & Banerjee, 2014).

### **2.3. Data Analyses**

Factorial validity was examined through confirmatory factor analysis (CFA). Model fit was determined on the basis of Hu and Bentler’s (1999) recommendation to use the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean

square residual (SRMR). Specifically, CFI values around  $\geq .95$ , RMSEA values around  $\leq .06$ , and SRMR values around  $\leq .08$  suggest a good model–data fit, whereas CFI values around .90–.94, RMSEA values around .07–.10, and SRMR values around .09–.10 suggest an acceptable fit (Hu & Bentler, 1999).

Measurement invariance was examined to determine if the BAS-2C was invariant among girls and boys. Tests of measurement invariance were conducted at three different levels: (a) configural invariance (i.e., whether similar factors are measured in girls and boys), (b) factor loading invariance (i.e., whether the magnitude of factor loadings is the same across girls and boys), and (c) intercept invariance (i.e., whether the intercept of the regression relating each item to its factor is the same across women and men; Chen, 2007). Measurement invariance was determined by CFI, RMSEA, and SRMR model fit indices. For small samples (total  $N \leq 300$ ), if  $\Delta\text{CFI} > -.005$ ,  $\Delta\text{RMSEA} < .010$ , and  $\Delta\text{SRMR} < .025$  for tests of factor loading invariance, and  $\Delta\text{CFI} > -.005$ ,  $\Delta\text{RMSEA} < .010$ , and  $\Delta\text{SRMR} < .005$  for tests of intercept invariance, then measurement invariance is evidenced (Chen, 2007).

Internal consistency reliability was investigated by Cronbach’s alpha. Construct validity was examined using Pearson  $r$  correlation coefficients. It was hypothesized that the BAS-2C would be related to body dissatisfaction, self-esteem, and life satisfaction, as correlations between body appreciation and these variables were observed in the previous research with adult samples (e.g., Namatame, Uno, & Sawamiya, 2017; Swami et al., 2016; Tylka & Wood-Barcalow, 2015). Cohen’s (1988) criteria were adopted, wherein Pearson  $r$  correlation values of  $\pm .50$  are considered strong,  $\pm .30$  are considered moderate, and  $\pm .10$  are considered weak. Test–retest reliability over four weeks was examined using the intraclass correlation coefficient (ICC). The ICC values were interpreted based on guidelines offered by Portney and Watkins (2009) as follows: ICC values .75 or greater are considered excellent; values .50 to .75 are moderate to good; values .25 to .50 are fair; and values  $< .25$  are weak.

### **3. Results**

#### **3.1. Preliminary Analyses**

Table 1 shows the means and standard deviations for each item of BAS-2C, wherein the differences between genders were observed in Item 4,  $t(222) = 2.00, p < .05$  and Item 8,  $t(222) = 2.14, p < .05$ .

#### **3.2. Factorial Validity**

CFA was conducted for the full sample, boys’ sample, and girls’ sample (Table 1). For the full sample, the model revealed acceptable fit for CFI (.923) and RMSEA (.088), and good fit for SRMR (.052). The boys’ sample also demonstrated acceptable fit for CFI (.919) and RMSEA (.088), and a good fit for SRMR (.064). For the girls’ sample, although the model exhibited borderline fit for CFI (.897) and RMSEA (.105), the SRMR (.065) exhibited a good fit. Item-factor loadings ranged

from .48 to .81 (from .41 to .83 for boys and from .51 to .78 for girls; see Table 2), which were considered sufficient. These values support the BAS-2C's factorial validity.

### 3.3. Measurement Invariance

The configural invariance model fit the data (CFI = .906, RMSEA = .069, SRMR = .064), indicating the Japanese version of the BAS-2C displayed the same factor structure for both girls and boys. When testing for factor loading invariance, we constrained all factor loadings equally across girls and boys. This model also fit the data, CFI = .909, RMSEA = .064, SRMR = .072. Further, the fit indices changed very little from the configural invariance model and met the criteria of Chen (2007) for factor loading invariance ( $\Delta$ CFI = .003,  $\Delta$ RMSEA = -.005, and  $\Delta$ SRMR = .008), suggesting the BAS-2C item-factor loadings were invariant for girls and boys. For the intercept invariance model, all item-factor intercepts were constrained to be equal across girls and boys, and the model fit the data (CFI = .908, RMSEA = .061, SRMR = .071). The fit indices differed very little from the factor loading invariance model and met the criteria of Chen (2007) for intercept invariance ( $\Delta$ CFI = -.001,  $\Delta$ RMSEA = -.003, and  $\Delta$ SRMR = -.001), suggesting that the BAS-2C item intercepts were invariant for girls and boys. Thus, the BAS-2C was invariant across gender.

Table 1. BAS-2C items, means, standard deviations, and item-factor loadings among full sample and girls' and boys' samples.

BAS-2C items	Full sample ( $n = 225$ )		Boys' sample ( $n = 103$ )		Girls' sample ( $n = 121$ )	
	$M(SD)$	Factor loading	$M(SD)$	Factor loading	$M(SD)$	Factor loading
1	3.06 (1.24)	.77	3.21 (1.23)	.78	2.93 (1.24)	.75
2	3.99 (1.04)	.55	3.97 (1.07)	.60	4.00 (1.02)	.51
3	3.27 (1.20)	.61	3.38 (1.22)	.58	3.18 (1.18)	.62
4	2.78 (1.35)	.68	2.98 (1.42)	.66	2.62 (1.28)	.68
5	2.56 (1.39)	.48	2.53 (1.38)	.41	2.56 (1.41)	.57
6	2.66 (1.41)	.81	2.83 (1.46)	.83	2.50 (1.34)	.78
7	2.92 (1.40)	.63	3.07 (1.45)	.64	2.78 (1.34)	.61

8	2.10 (1.19)	.64	2.28 (1.18)	.59	1.94 (1.18)	.69
9	3.24 (1.34)	.62	3.34 (1.39)	.56	3.15 (1.31)	.66
10	2.04 (1.36)	.53	2.05 (1.37)	.50	2.02 (1.35)	.57

Table 2. Model fit indices for the one-factor Body Appreciation Scale-2 for Children (BAS-2C) model across participants' gender.

	$\chi^2$	df	$\chi^2_{\text{normed}}$	CFI	RMSEA (90%CI)	SRMR
Full sample ( $n = 225$ )	95.863	35	2.739	.923	.088 (.067, .109)	.052
Boys' sample ( $n = 103$ )	62.352	35	1.781	.919	.088 (.051, .122)	.064
Girls' sample ( $n = 121$ )	81.431	35	2.327	.897	.105 (.075, .135)	.065
Configural invariance model ( $n = 225$ )	143.778	70	2.054	.906	.069 (.053, .085)	.064
Factor loading invariance model ( $n = 225$ )	150.548	79	1.906	.909	.064 (.048, .079)	.072
Intercept invariance model ( $n = 225$ )	161.736	89	1.817	.908	.061 (.046, .075)	.071

*Note.* df = degrees of freedom, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, SRMR = Standardized Root Mean Square Residual.

### 3.4. Internal Consistency Reliability

Cronbach's alphas for the BAS-2C were .87 in the full sample, .86 for the boys, and .88 for the girls, supporting the internal consistency of the measure.

### 3.5. Construct Validity

The BAS-2C had a weak to moderate negative correlation with girls' actual – ideal body size dissatisfaction ( $r = -.17, p < .10$ ). The BAS-2C was strongly positively correlated with self-



esteem for boys ( $r = .54, p < .001$ ) and weakly to moderately positively correlated for girls ( $r = .29, p < .01$ ). The BAS-2C had a moderate to strong positive correlation with life satisfaction for boys ( $r = .36, p < .001$ ) and a weak to moderate positive correlation for girls ( $r = .21, p < .05$ ). These results, separated by gender, are displayed in Table 3 and support the construct validity of BAS-2C.

Table 3. Variable means, standard deviations, and correlations among girls and boys.

	Girls	Boys	1	2	3	4
	<i>M(SD)</i>	<i>M(SD)</i>				
1. Body appreciation	2.80 (0.88)	2.97 (0.86)	-	-	.54***	.36***
2. Body dissatisfaction	1.04 (0.85)	-	-.17 <sup>†</sup>	-	-	-
3. Self-esteem	2.79 (0.57)	2.86 (0.59)	.29**	-.14	-	.43***
4. Life satisfaction	4.23 (0.97)	4.28 (1.03)	.21*	-.05	.67***	-

*Note.* Correlation coefficients above the diagonal relate to boys, and those below the diagonal relate to girls. <sup>†</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

### 3.6. Test–retest reliability

For boys, the ICC was .75,  $p < .001$  (95% CI: .65, .83), or excellent. For girls, the ICC was .69,  $p < .001$  (95% CI: .58, .77), or good. Therefore, BAS-2C was found to be stable over time for girls and boys.

## 4. Discussion

This study investigated the Japanese BAS-2C's reliability and validity among Japanese girls and boys aged 8–12 years. Through CFA, the Japanese version of the BAS-2C was found to have a one-factor structure, wherein all items loaded onto a single factor, with adequate fit. This result is consistent with the original scale developed by Halliwell et al. (2017). In addition, the Japanese BAS-2C was invariant across gender. The Japanese BAS-2C showed sufficient internal consistency and test–retest reliability over a four-week period for both genders. Furthermore, the construct validity of the Japanese BAS-2C was evident: the BAS-2C had a significant positive correlation with self-esteem and life satisfaction among both boys and girls. Moreover, the BAS-2C had a marginally significant negative correlation with body dissatisfaction among girls. The Japanese version of the BAS-2C is in Appendix A.

### 4.1. Limitations and Future Research

This study has some limitations. First, the participants were recruited from only one private school and might not be representative of Japanese children. Future studies could benefit from including samples from a variety of schools, resulting in a more representative sample.

Second, body dissatisfaction among boys could not be evaluated due to the absence of an appropriate scale in Japan with good psychometric properties. The Japanese Body Silhouette Scale was chosen for the present research as it is the only scale to assess the body image among children in Japan as far as our knowledge. In future studies, the validation of the existing scales designed to assess body image among children (Mendelson, Mendelson, & White, 2001) among Japanese children population is needed. As body dissatisfaction is common among boys (McLean, Wertheim, & Paxton, 2018), it needs to be investigated further—alongside their body appreciation.

Third, body dissatisfaction was assessed by the difference between “current figure” and “ideal figure.” We assumed that if a “current figure” and “ideal figure” differed it meant that the participant was dissatisfied with their body. However, some may acknowledge the difference between current figure and ideal figures but did not mind the difference. In future studies, attitudinal aspect of body image may be explored in relation to body appreciation among the population.

Fourth, as we did not ask the height and weight of the participants, and therefore, their Rohrer index or BMI could not be calculated. We could not examine if the Rohrer index influenced the relationship between body appreciation and body dissatisfaction. Furthermore, we could not eliminate the possibility that assessment of body dissatisfaction might be negatively affected by individuals’ body sizes falling outside of the range of those represented in the silhouette measure. If individuals have a Rohrer index of 180, they will be unable to find appropriate figure, and thus have to select a leaner figure than their actual Rohrer index. Height and weight were not considered, because BMI and body appreciation have been found to be uncorrelated among Japanese young females and very weakly correlated among Japanese young males (Namatame et al., 2017). For the Japanese, BMI may not be as closely tied to positive body image as other cultural groups. However, further exploration of the relationships between BMI and body image could be investigated in future studies with Japanese participants.

Fifth, with the exception of test-retest reliability data, this study used a cross-sectional design and thus was unable to investigate children’s body appreciation trajectories across time. A longitudinal design could enable the investigation of how body appreciation changes over time from childhood to the adolescent period. Future efforts could focus on conducting longitudinal studies and examining the long-term relationships of body appreciation with adaptive or maladaptive behaviors and developmental changes in body appreciation.

#### **4.2. Conclusion**

This study showed that the Japanese BAS-2C can be useful in evaluating positive body image in Japanese children. Its findings further expand our understanding of positive body image and provide an opportunity to examine positive body image among Japanese children as well as cross-cultural comparisons among children with diverse cultural backgrounds. However, this study

was limited to a small group of private school students, and further studies are required on a larger, more representative sample of children.

Funding: This research was funded by the Nippon Life Insurance Foundation.

## Appendix A. Body Appreciation Scale 2-Children (BAS-2C) in Japanese and English

あなたが自分のからだをどう思っているか質問します。「ぜんぜんない」「たまに」「ときどき」「よく」「いつも」の中から、あなたにあてはまるものを選んで丸をつけてください。

This set of questions ask what you think of your body. The options are 'Never', 'Rarely', 'Sometimes', 'Often' and 'Always'. Please circle the word which shows how often you feel this way.

1. 1. <sup>じぶん</sup>自分のからだを<sup>おも</sup>よいと思う。  
I feel good about my body.
2. 2. <sup>じぶん</sup>自分のからだを<sup>たいせつ</sup>大切にしている。  
I respect my body.
3. 3. <sup>じぶん</sup>自分のからだにも<sup>おも</sup>すこしはよいところがあると思う。  
I feel that my body has at least some good qualities.
4. 4. <sup>じぶん</sup>自分のからだに<sup>じしん</sup>自信がある。  
I take a positive attitude towards my body.
5. 5. <sup>じぶん</sup>自分のからだ<sup>なに</sup>が何を<sup>き</sup>ほしいのか<sup>おも</sup>気にしている。  
I pay attention to what my body needs.
6. 6. <sup>じぶん</sup>自分のからだ<sup>おも</sup>がすきだ。  
I feel love for my body.
7. 7. <sup>じぶん</sup>自分のからだの<sup>ほか</sup>他の人<sup>ひと</sup>とちがうところを<sup>おも</sup>よいと思っている。  
I appreciate the different and unique things about my body.
8. 8. <sup>ほか</sup>他の人<sup>ひと</sup>が<sup>わたし</sup>私の<sup>こうどう</sup>行動を<sup>わたし</sup>みたら、<sup>わたし</sup>私が<sup>じぶん</sup>自分の<sup>おも</sup>からだを<sup>おも</sup>よいと思<sup>おも</sup>っていることがわかる。  
You can tell I feel good about my body by the way I behave.
9. 9. <sup>じぶん</sup>自分の<sup>こころ</sup>からだ<sup>こころ</sup>が心地よい。  
I am comfortable in my body.
10. 10. <sup>しゃしん</sup>写真や<sup>み</sup>テレビで<sup>み</sup>見る<sup>ひと</sup>かわいい／<sup>ひと</sup>かっこいい人<sup>ひと</sup>たち(モデル、<sup>じょゆう</sup>女優・<sup>はいゆう</sup>俳優など)と  
<sup>じぶん</sup>ちがっていても、<sup>じぶん</sup>自分は<sup>おも</sup>かわいい／<sup>おも</sup>かっこいいと思<sup>おも</sup>う。  
I feel like I am beautiful even if I am different from pictures and videos of attractive people (e.g. models/ actresses/actors).

## References

- Alcaraz-Ibáñez, M., Cren Chiminazzo, J. G., Sicilia, A., & Teixeira Fernandes, P. (2017). Examining the psychometric properties of the Body Appreciation Scale-2 in Brazilian adolescents. *Psychology, Society & Education, 9*, 505–515. <http://dx.doi.org/10.25115/psye.v9i3.1101>
- Alleva, J. M., Martijn, C., Veldhuis, J., & Tylka, T. L. (2016). A Dutch translation and validation of the Body Appreciation Scale-2: An investigation with female university students in the Netherlands. *Body Image, 19*, 44–48. <http://dx.doi.org/10.1016/j.bodyim.2016.08.008>
- Alleva, J. M., Paraskeva, N., Craddock, N., & Diedrichs, P. C. (2018). Body appreciation in British men: Correlates and variation across sexual orientation. *Body Image, 27*, 169–178. <https://doi.org/10.1016/j.bodyim.2018.09.004>
- Andrew, R., Tiggemann, M., & Clark, L. (2015). The protective role of body appreciation against media-induced body dissatisfaction. *Body Image, 15*, 98–104. <http://dx.doi.org/10.1016/j.bodyim.2015.07.005>
- Andrew, R., Tiggemann, M., & Clark, L. (2016). Positive body image and young women's health: Implications for sun protection, cancer screening, weight loss and alcohol consumption behaviours. *Journal of Health Psychology, 21*, 28–39. <http://dx.doi.org/10.1177/1359105314520814>
- Avalos, L., Tylka, T. L., & Wood-Barcalow, N. (2005). The Body Appreciation Scale: Development and psychometric evaluation. *Body Image, 2*, 285–297. <http://dx.doi.org/10.1016/j.bodyim.2005.06.002>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*, 464–504. <http://dx.doi.org/10.1080/10705510701301834>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New Jersey: Erlbaum.
- Dohnt, H., & Tiggemann, M. (2005). Peer influences on body dissatisfaction and dieting awareness in young girls. *British Journal of Developmental Psychology, 23*, 103–116. <http://dx.doi.org/10.1348/026151004x20658>
- Dohnt, H., & Tiggemann, M. (2006). Body image concerns in young girls: The role of peers and media prior to adolescence. *Journal of Youth and Adolescence, 35*, 141–151. <http://dx.doi.org/10.1007/s10964-005-9020-7>
- Easterbrook, M. J., Wright, M. L., Dittmar, H., & Banerjee, R. (2014). Consumer culture ideals, extrinsic motivations, and well-being in children. *European Journal of Social Psychology, 44*, 349–359. <http://dx.doi.org/10.1002/ejsp.2020>
- Frisén, A., Lunde, C., & Berg, A. I. (2015). Developmental patterns in body esteem from late

- childhood to young adulthood: A growth curve analysis. *European Journal of Developmental Psychology*, *12*, 99–115. <http://dx.doi.org/10.1080/17405629.2014.951033>
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, *134*, 460-476. <http://dx.doi.org/10.1037/0033-2909.134.3.460>
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, *31*, 1-16. [http:// dx.doi.org/10.1002/eat.10005](http://dx.doi.org/10.1002/eat.10005)
- Halliwel, E. (2013). The impact of thin idealized media images on body satisfaction: Does body appreciation protect women from negative effects? *Body Image*, *10*, 509–514. <http://dx.doi.org/10.1016/j.bodyim.2013.07.004>
- Halliwel, E. (2015). Future directions for positive body image research. *Body Image*, *14*, 177–189. <http://dx.doi.org/10.1016/j.bodyim.2015.03.003>
- Halliwel, E., Jarman, H., Tylka, T., & Slater, A. (2017). Adapting the Body Appreciation Scale-2 for Children: A psychometric analysis of the BAS-2C. *Body Image*, *21*, 97–102. <http://dx.doi.org/10.1016/j.bodyim.2017.03.005>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*, 1–55. <http://dx.doi.org/10.1080/10705519909540118>
- Huebner, E. S. (1991). Initial development of the Students' Life Satisfaction Scale. *School Psychology International*, *12*, 231–240. <http://dx.doi.org/10.1177/0143034391123010>
- Junqueira, A. C. P., Laus, M. F., Almeida, S. S., Costa, T. M. B., Todd, J., & Swami, V. (2019). Translation and validation of a Brazilian Portuguese version of the Body Appreciation Scale-2 in Brazilian adults. *Body Image*, *31*, 160-170. <https://doi.org/10.1016/j.bodyim.2019.10.002>
- Kaufman, T. M., Kretschmer, T., Huitsing, G., & Veenstra, R. (2018). Why does a universal anti-bullying program not help all children? Explaining persistent victimization during an intervention. *Prevention Science*, *19*, 822–832. <http://dx.doi.org/10.1007/s11121-018-0906-5>
- Kertechian, S., & Swami, V. (2017). An examination of the factor structure and sex invariance of a French translation of the Body Appreciation Scale-2 in university students. *Body Image*, *21*, 26–29. <http://dx.doi.org/10.1016/j.bodyim.2017.02.005>
- Kling, J., Kwakkenbos, L., Diedrichs, P. C., Rumsey, N., Frisén, A., Brandão, M. P., . . . Fitzgerald, A. (2019). Systematic review of body image measures. *Body Image*, *30*, 170-211. <https://doi.org/10.1016/j.bodyim.2019.06.006>
- Lemoine, J. E., Konradsen, H., Jensen, A. L., Roland-Lévy, C., Ny, P., Khalaf, A., & Torres, S.

- (2018). Factor structure and psychometric properties of the Body Appreciation Scale-2 among adolescents and young adults in Danish, Portuguese, and Swedish. *Body Image*, 26, 1–9. <http://dx.doi.org/10.1016/j.bodyim.2018.04.004>
- McLean, S. A., Wertheim, E. H., & Paxton, S. J. (2018). Preferences for being muscular and thin in 6-year-old boys. *Body Image*, 26, 98-102. <http://dx.doi.org/10.1016/j.bodyim.2018.07.003>
- Mendelson, B. K., Mendelson, M. J., & White, D. R. (2001). Body-esteem scale for adolescents and adults. *Journal of Personality Assessment*, 76, 90–106. [http://dx.doi.org/10.1207/S15327752JPA7601\\_6](http://dx.doi.org/10.1207/S15327752JPA7601_6)
- Meneses, L., Torres, S., Miller, K. M., & Barbosa, M. R. (2019). Extending the use of the Body Appreciation Scale-2 in older adults: A Portuguese validation study. *Body Image*, 29, 74-81. <https://doi.org/10.1016/j.bodyim.2019.02.011>
- Mokkink, L.B., Terwee, C.B., Patrick, D.L., Alonso, J., Stratford, P.W., Knol, D.L., ... de Vet, H.C.W. (2012). COSMIN checklist manual. Retrieved from <http://www.cosmin.nl/images/upload/files/COSMIN%20checklist%20manual%20v9.pdf>.
- Moreira, G. S. X., Lorenzato, L., Neufeld, C. B., & Almeida, S. S. (2018). Brazilian version of the Body Appreciation Scale (BAS) for young adolescents. *The Spanish Journal of Psychology*, 21, E21. <http://dx.doi.org/10.1017/sjp.2018.20>
- Namatame, H., Uno, K., & Sawamiya, Y. (2017). Pojithibu Bodhi Imēji wo Sokuteisuru BAS-2 no Nihonngoban Sakusei [Development of Japanese version of the Body Appreciation Scale-2]. *Shinrigaku Kenkyū*, 88, 358–365. <http://dx.doi.org/10.4992/jjpsy.88.16216>
- Okamoto, Y., & Miyake, Y. (2015). Gakko ni Okeru Shinkei Musyokuyokusyo: Syo Cyu Koukou Yogokyoyu Anketo Cyosa [Anorexia Nervosa at School: Questionnaire Survey to the School Nurses of Elementary School, Junior High School, and Senior High School]. *Shinshin Igaku*, 55, 1251–1258. [http://dx.doi.org/10.15064/jjpm.55.11\\_125](http://dx.doi.org/10.15064/jjpm.55.11_125)
- Portney, L. G., & Watkins, M. P. (2009). *Foundations of clinical research: Applications to practice*. (3rd ed.). New Jersey: Pearson/Prentice Hall.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. New Jersey: Princeton University Press.
- Sakurai, S. (2000). Rōzenbāgu Jisonkanjou Syakudo Nihongoban no Kentou [Investigation of the Japanese version of Rosenberg's Self-esteem Scale]. *Tsukuba Daigaku Hattatsu Rinsho Shinrigaku Kenkyū*, 12, 65–71. <http://dx.hdl.handle.net/2241/11064>
- Suzuki, T., & Nakamura, K. (2009). Koukousei, Cyūgakusei, oyobi Syougakusei no Bodhi • imēji Sokuteiyō no Shintai Siruettōzu (J-BSS- II ~ J-BSS- V) no Sakusei [Development of body silhouette scales (J-BSS- II ~J-BSS- V)]. *Seni Seihin Shouhi Kagaku*, 50, 1016–1021. [http://dx.doi.org/10.11419/senshoshi.50.11\\_1016](http://dx.doi.org/10.11419/senshoshi.50.11_1016)
- Swami, V., & Chamorro-Premuzic, T. (2008). Factor structure of the Body Appreciation Scale

- among Malaysian women. *Body Image*, 5, 409–413. \_  
<http://dx.doi.org/10.1016/j.bodyim.2008.04.005>
- Swami, V., & Jaafar, J. L. (2012). Factor structure of the Body Appreciation Scale among Indonesian women and men: Further evidence of a two-factor solution in a non-Western population. *Body Image*, 9, 539–542. <http://dx.doi.org/10.1016/j.bodyim.2012.06.002>
- Swami, V., Khatib, N. A. M., Toh, E., Zahari, H. S., Todd, J., & Barron, D. (2019). Factor structure and psychometric properties of a Bahasa Malaysia (Malay) translation of the Body Appreciation Scale-2 (BAS-2). *Body Image*, 28, 66-75.  
<https://doi.org/10.1016/j.bodyim.2018.12.006>
- Swami, V., Ng, S. K., & Barron, D. (2016). Translation and psychometric evaluation of a Standard Chinese version of the Body Appreciation Scale-2. *Body Image*, 18, 23–26. \_  
<http://dx.doi.org/10.1016/j.bodyim.2016.04.005>
- Tiggemann, M. (2015). Considerations of positive body image across various social identities and special populations. *Body Image*, 14, 168–176. \_  
<http://dx.doi.org/10.1016/j.bodyim.2015.03.002>
- Tylka, T. L. (2011). Positive psychology perspectives on body image. In T. F. Cash & L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention* (2nd ed., pp. 56–64). New York: Guilford Press.
- Tylka, T. L. (2013). Evidence for the Body Appreciation Scale’s measurement equivalence/invariance between US college women and men. *Body Image*, 10, 415–418.  
<http://dx.doi.org/10.1016/j.bodyim.2013.02.006>
- Tylka, T. K., & Kroon Van Diest, A. M. (2013). The Intuitive Eating Scale-2: Item refinement and psychometric evaluation with college women and men. *Journal of Counseling Psychology*, 60, 137–153. <http://dx.doi.org/10.1037/a0030893>
- Tylka, T. L., & Wood-Barcalow, N. L. (2015a). The Body Appreciation Scale-2: Item refinement and psychometric evaluation. *Body Image*, 12, 53–67. \_  
<http://dx.doi.org/10.1016/j.bodyim.2014.09.006>
- Tylka, T. L., & Wood-Barcalow, N. L. (2015b). What is and what is not positive body image? Conceptual foundations and construct definition. *Body Image*, 14, 118-129.  
<https://doi.org/10.1016/j.bodyim.2015.04.001>
- Uragami, R., Kojima, Y., Sawamiya, Y., Sakano, Y. (2009). Danshi Seinen niokeru Soushin Ganbou nituiteno Kenkyū [Drive for Thinness in Adolescent Males]. *Kyouiku Shinrigaku Kenkyū*, 57, 263–273. <http://dx.doi.org/10.5926/jjep.58.140>
- Webb, J. B., Wood-Barcalow, N. L., & Tylka, T. L. (2015). Assessing positive body image: Contemporary approaches and future directions. *Body Image*, 14, 130–145. \_  
<http://dx.doi.org/10.1016/j.bodyim.2015.03.010>



- Yoshitake, N. (2010). Cyūgakusei no Seikatsumanzokudo ni Kanrensuru Pojithibu·Ibento: Ibento no Koumokusyūsyū to Sougoeikyōkankei no Kentou [Role of Daily Positive Experiences in Life Satisfaction in Junior High School Students: Events Collection and Examination of a Relationship]. *Kyōiku Shinrigaku Kenkyū*, 58, 140–150.  
<http://dx.doi.org/10.5926/jjep.58.140>
- Zimmer-Gembeck, M. J., Webb, H. J., Farrell, L. J., & Waters, A. M. (2018). Girls' and boys' trajectories of appearance anxiety from age 10 to 15 years are associated with earlier maturation and appearance-related teasing. *Development and Psychopathology*, 30, 337–350. <http://dx.doi.org/10.1017/S0954579417000657>