

Psihologijske teme 23 (2014), 2, 223-243

Original scientific paper – UDK – 159.923.2.072-055.1
159.923.2.072-055.2

Factor Structure and Validity of the *Body Parts Satisfaction Scale*: Results from the 1972 *Psychology Today* Survey

David A. Frederick

Crean School of Health and Life
Sciences, Chapman University, USA

Elaine Hatfield

Department of Psychology,
University of Hawaii, USA

George W. Bohrnstedt

American Institutes for Research,
Washington, DC, USA

Ellen Berscheid

Department of Psychology,
University of Minnesota, USA

Abstract

In 1972, the first major national study on body image was conducted under the auspices of *Psychology Today*. Body image was assessed with the *Body Parts Satisfaction Scale*, which examined the dissatisfaction people experienced with 24 aspects of their bodies. Despite the continued reliance on this scale and reference to the study, data on the factor structure of this measure in a sample of adults have never been published, and citations of the original scale have relied on an unpublished manuscript (Bohnstedt, 1977). An exploratory factor analysis conducted on 2,013 adults revealed factors for men (Face, Sex Organ, Height, Lower Body, Mid Torso, Upper Torso, Height) and women (Face, Sex Organ, Height, Lower Torso, Mid Torso, Extremities, Breast). The factors were weakly to moderately intercorrelated, suggesting the scale can be analyzed by items, by subscales, or by total score. People who reported more dissatisfaction with their body also tended to report lower self-esteem and less comfort interacting with members of the other sex. The analyses provide a useful comparison point for researchers looking to examine gender differences in dissatisfaction with specific aspects of the body, as well as the factor structures linking these items.

Keywords: Psychology Today, body image, body parts satisfaction scale, validity, prevalence of body dissatisfaction

✉ David Frederick, One University Drive, Orange, CA 92866, USA. E-mail: enderflies1@aol.com

Introduction

Despite the maxim "beauty is only skin deep", people make inferences about a person's personality and treat them differently based simply on their appearance. Men and women who are more physically attractive experience a host of positive social outcomes, including higher salaries, greater likelihood of receiving job offers, more friends, and more positive treatment by teachers and authority figures (Langlois et al., 2000).

These social benefits to beauty cause many men and women to evaluate whether or not their appearance matches these ideals, to strive to match them, and to feel dissatisfaction and shame when they believe that they have failed to live up to these standards (Cafri, Yamamiya, Brannick, & Thompson, 2005; Fredrickson & Roberts, 1997). Studies of college students and adults find that a substantial minority of men and women are dissatisfied with their overall appearance (Frederick, Forbes, Jarcho, & Grigorian, 2007; Frederick, Peplau, & Lever, 2006). People who are more dissatisfied with their bodies experience more social anxiety (Cash, Theriault, & Annis, 2004), depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000), compulsive need for excessive exercise (White & Halliwell, 2010), desire for cosmetic surgery (Frederick, Lever, & Peplau, 2007), and discomfort with one's sex life (Peplau et al., 2009).

Despite these negative outcomes associated with body dissatisfaction, surprisingly there have been no nationally representative studies of adults examining the prevalence of body dissatisfaction. There have been, however, several notable attempts to recruit demographically representative samples or large and broad samples (e.g., Asgeirsdottir, Ingolfssdottir, & Sigfusdottir, 2012; Cash & Henry, 1995; Cash, Winstead, & Janda, 1986; Frederick et al., 2006; Swami et al., 2010; for a review, see Frederick, Jafary, Daniels, & Gruys, 2011).

The first large-scale attempt to assess the epidemiology of body dissatisfaction came in 1972, when Berscheid, Hatfield [Walster], and Bohrnstedt created the 109 item *Body Image Satisfaction Scale* and published it in the magazine *Psychology Today* and asked readers to complete the survey and mail it in. The authors then presented a subset of the results in *Psychology Today* (Berscheid, Hatfield [Walster], & Bohrnstedt, 1973). The results of this study, and of the factor structure underlying the items in the body image measure used in the study, have never formally been published. This manuscript provides the first examination of the factor structure and intercorrelations among the items in the body image measure in a sample of non-college aged adults.

Purpose of Current Manuscript

The *Body Parts Satisfaction Scale* created for the *Psychology Today* study consisted of 24 items. This scale assessed "affective body dissatisfaction", or the feelings people have about their bodies (e.g., Thompson, 1995). This scale, or subsets of items from this scale, have been used by scholars conducting research on media (Cameron & Ferraro, 2004; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999), body image (Petrie, Tripp, & Harey, 2002), sexual orientation (Bergeron & Senn, 1998), gender identity (Kimlicka, Cross, & Tamal, 1983), sexual dysfunction (Adersen & Legrand, 1991), and disordered eating (Brown, Cash, & Lewis, 2006; Mintz & Betz, 1988; Siever, 1994; Tripp & Petrie, 2001). Additionally, researchers have modified the items to assess concerns with both muscularity and leanness, resulting in a three factor measure assessing concerns with upper body, legs, and face (McFarland & Petrie, 2012). Although some measures assess overall satisfaction with the body, the approach employed by this scale was to assess dissatisfaction with multiple aspects of the body. This approach to assessing multiple aspects of the body has been continued through measures such as the Body Esteem Scale (Franzoi & Shields, 1984) and has proved useful for identifying particular areas of body dissatisfaction.

The first study employing this measure has been widely cited (584 times as of March 15, 2014 according to googlescholar; Berscheid, Hatfield [Walster], & Bohrnstedt, 1973). Despite the continued use of this scale and reference to the original study, the data on the concurrent validity and underlying factor structure of the full measure have never been formally published. Researchers wishing to cite this information from the original study have been forced to rely on an unpublished manuscript (Bohrnstedt, 1977). This paper is intended to remedy that omission and to provide a handy reference for researchers requiring information on the original factor structure of the scale identified in the original exploratory factor analysis of the scale by Bohrnstedt (1977). Specifically, the goals of this study were:

Goal 1. Identifying the extent of body dissatisfaction in 1972 – we present the percentage of men and women who were dissatisfied with different aspects of their bodies based on their responses to the *Body Parts Satisfaction Scale*. We also highlight the percentage of people who were substantially dissatisfied with each aspect of their bodies, and comment on the relevance of these findings for modern research on body image.

Goal 2. Identifying the factor structure – we present the factors that emerged through an exploratory factor analysis, as well as second order factors that may link together the lower order factors. That is, did people who scored high on some items tend to score high on other specific items because responses are driven by a latent factor? How many of these latent factors can be identified by the responses, and are there additional factors that link together the first set of factors identified? The only published factor analysis on this scale relied on two samples of college students and

identified two factors ("satisfaction with body" and satisfaction with face;" Petrie et al., 2002). Despite the continued use of this scale, to our knowledge there have been no attempts to examine the factor structure of the *Body Parts Satisfaction Scale* in a broader sample of adults.

Goal 3. Examining links between dissatisfaction with whole body and aspects of body – we examined the extent to which concerns with different aspects of the body predict one's feelings about their overall attractiveness. For example, were concerns with the mid torso area (e.g., abdomen) a better predictor of overall feelings of attractiveness than concerns with one's face, and did these associations differ for men and women?

Goal 4. Associations with self-esteem and comfort with social interaction – we examined whether people with higher levels of body dissatisfaction would report lower self-esteem (Pesa, Syre, & Jones, 2000) and more difficulty interacting with the other sex (Davison & McCabe, 2006).

Method

Participants

The data was collected using a questionnaire mailed to the readership of *Psychology Today*. More than 60,000 readers completed and mailed in the questionnaire. These large numbers of participants made it impossible to code and keypunch every questionnaire. A sample of 2,013 (1000 men, and 1013 women) was randomly drawn from the pool of surveys. The sampling was stratified by sex and age in order to approximate the actual distribution of these demographics in the United States. Once the quota for a specific group was attained (e.g., males under age 24), any further surveys drawn representing this group were discarded. The sample included roughly 50% men and 50% women, and within each sex, 45% of the sample was 24 years of age or younger, 25% was 25-44 years of age, and 31% was 45 years of age or older.

Procedure

The participants completed all 109 items on the questionnaire, a subset of which are presented here. The entire survey can be viewed here: (<http://www.elaineatfield.com/research/articles,#33/>).

Body Parts Satisfaction Scale – participants were presented with a list of 24 aspects of their bodies (see Table 1). They expressed their degree of satisfaction or dissatisfaction with each of these aspects using a six-point Likert scale (1 = *extremely satisfied*, 2 = *quite satisfied*, 3 = *somewhat satisfied*, 4 = *somewhat*

dissatisfied, 5 = *quite dissatisfied*, 6 = *extremely dissatisfied*). To facilitate interpretation of the data, we created several different versions of this variable, including the percent expressing any dissatisfaction with each aspect of their body (scores of 4-6 for that item) and those expressing substantial dissatisfaction (scores of 5-6) for each item (see Table 1). Higher scores on the items indicate greater dissatisfaction.

Overall Body Dissatisfaction – participants rated their satisfaction with their "overall body appearance" on the six-point Likert scale ranging from *extremely satisfied* to *extremely dissatisfied* mentioned above. Higher scores indicate greater dissatisfaction.

Feelings of Inadequacy – poor self-esteem was assessed with the Janis-Field Feelings of Inadequacy Scale, which measures lack of confidence with oneself in a variety of life domains (Janis & Field, 1959). The measure included 10 items such as "How often do you feel self-conscious" (1 = *never*, 5 = *very often*) and "When you talk in front of a class or group of persons your own age, how apprehensive do you usually feel?" (1 = *not at all apprehensive*, 5 = *very apprehensive*). Cronbach's α for this measure were .84 for women and .82 for men. Higher scores on the scale indicate greater feelings of inadequacy.

Difficulty Relating to Other Sex – participants were presented with the item "In general, I find it difficult to relate well to persons of the opposite sex". They recorded their answers on a Likert scale ranging from 1 = *strongly agree* to 6 = *strongly disagree*. Higher scores indicate less difficulty interacting with the other sex.

Results

Overview of Data Analysis Strategy and Data Presentation

The results section presents the analyses reported in Bohrnstedt (1977) that had previously not undergone formal peer review. Consistent with Goal 1 (*extent of dissatisfaction*), we reported the percent who experience significant dissatisfaction as well as the overall percent dissatisfied, with the items grouped according to the subscales generated by the factor analysis (Table 1).

Consistent with Goal 2 (*factor structure*), a factor analysis (principal axis factoring) was conducted to determine whether underlying factors could account for covariation among the individual body dissatisfaction items using an oblimax rotation (Table 2). Only loadings greater than or equal to .35 are tabled. Items with loadings above .35 on multiple factors were assigned to the factor on which the items loaded most highly. In these analyses, items were included on the scales

created for each factor regardless of how low or high the communalities were. The communalities assess how much of the variance in the variable is explained by the extracted components. We note in text, however, instances in which communalities are lower than .40 for specific variables. The Kaiser rule (eigenvalues > 1.0) was used to determine number of factors.

After identifying the factors, we calculated the average level of dissatisfaction across each of the subscales for men and women and intercorrelations among these subscales (Table 3). We conducted a second order factor analysis to determine if a total score could be justified (Table 4).

Consistent with Goal 3 (*linking part to whole body dissatisfaction*), we then present the correlations between scores on each subscale and reports of overall body dissatisfaction, and well as a regression predicting overall body dissatisfaction (Table 5).

Finally, consistent with Goal 4 (*association with body dissatisfaction*), we present the correlations among body dissatisfaction subscale and total dissatisfaction score with feelings of inadequacy and difficulty interacting with members of the other sex (Table 5).

Goal 1. Identifying the Extent of Body Dissatisfaction in 1972

It is clear that weight was on people's mind in 1972. As shown on Table 1, dissatisfaction with one's abdomen was the most common source of dissatisfaction for both women (50%) and men (36%), and dissatisfaction with weight was ranked third for women (48%) and second for men (35%). Overall, traits that can be affected by increasing or decreasing body fat level, such as abdomen, hips, weight, and buttocks, were among the most common sources of dissatisfaction for women and men.

The percentage expressing substantial dissatisfaction with those aspects of the body was substantially lower. Only 19% of women and 11% of men reported being substantially dissatisfied with their abdomen, and 21% of women and 10% of men were substantially dissatisfied with their weight.

Dissatisfaction with muscle tone was somewhat common for women (30%) and men (26%). Concern for sex specific traits was somewhat common for women (26% were dissatisfied with breasts) and not very common for men (15% were dissatisfied with penis size). When it came to facial features, dissatisfaction with teeth was the only aspect of the face that more than 25% of men and women expressed dissatisfaction with. Only 11% of women and 8% of men expressed dissatisfaction with their face overall. Surprisingly, a full 20% of women were dissatisfied with their feet, as were 11% of men.

Table 1. *Reports of Dissatisfaction with Each Aspect of the Body on the Body Parts Satisfaction Scale*

	Overall Rank		Any Dissatisfaction		Substantial Dissatisfaction		Substantial Satisfaction	
	M	F	M	F	M	F	M	F
			%	%	%	%	%	%
Overall Body Appearance	-	-	15	23	4	7	55	45
Overall Facial Attractiveness	20	19	8	11	2	3	61	61
Hair	6	12	20	19	6	6	58	53
Eyes	22	23	7	6	1	1	81	80
Ears	24	20	5	7	1	2	82	83
Nose	9	10	16	23	2	5	64	55
Mouth	23	20	6	7	1	2	75	73
Teeth	3	5	28	30	10	11	46	50
Voice	10	14	15	18	3	3	58	55
Chin	15	16	11	13	3	4	69	67
Complexion	5	7	22	28	7	8	58	48
Shoulders	15	16	11	13	3	2	67	68
Arms	12	15	13	16	2	5	62	62
Hands	20	12	8	19	1	5	75	60
Feet	15	11	11	20	3	6	70	57
Size of Abdomen	1	1	36	50	11	19	42	29
Buttocks (Seat)	6	4	20	43	6	17	56	37
Hips (Upper Thighs)	14	2	12	49	3	22	64	32
Legs and Ankles	15	9	11	25	4	8	69	52
Height	12	16	13	13	3	3	67	72
Weight	2	3	35	48	10	21	43	31
General Muscle Tone / Development	4	6	25	30	7	9	45	38
Chest/Breast	8	8	18	26				
Size of Sex Organs	10	24	15	3				
Appearance of Sex Organs	19	20	9	7				

Note. M – Men; F – Women; Information on the percentage of men and women experiencing substantial satisfaction or dissatisfaction with sex organs and breasts/chests was not available. The item "Overall Body Appearance" is not part of the 24-item scale but is included for interested readers. For each sex, rank is based on the percentage who indicated any dissatisfaction with that aspect of their body (e.g., size of abdomen was the most frequently cited source of dissatisfaction for men and women).

Goal 2. Identifying the Factor Structure

Multidimensional Factor Structure of Body Image

The factor analysis revealed that body image was not unidimensional and somewhat different factors emerged for men and women (Table 2).

For both sexes, Factor I appears to be a *face factor*. For women, dissatisfaction with their faces consisted of facial attractiveness, complexion, nose, mouth, and eyes. For men, the relevant features were facial attractiveness, mouth, nose, and chin. All of the items on this factor, however, had low communalities for both men and women (all < .45).

The items defining Factor II for women were dissatisfaction with shoulders, arms, hands, and feet. The emergence of this factor suggests that women see these body parts in a unitary way. Given the items that defined this factor for the women, it has been named the *extremities factor*. No parallel factor for men was found. Instead, Factor II for men appears to be an *upper torso factor*, defined by dissatisfaction with chest, shoulders, arms, and general muscle tone. The variable "hands" had low communalities for both men (.29) and women (.28).

Factor III appeared to be a *lower torso factor* for women. There was also a *lower body factor* for men. For women dissatisfaction with hips/upper thighs, buttocks, and legs/ankles defined this factor. For men, this factor included legs/ankles, hips/upper thighs, feet, and buttocks. For men, the item, "buttocks", loaded equally on both the *mid-torso* (.42) and *lower body* (.41) factors. We elected to classify this item with the lower body factor given that this aspect of the body is located in lower body region, consistent with the other items in this factor (hips/thighs, legs/ankles, feet). It also could be reasonably argued that this item should be dropped from both factors given the equal loading or included on the mid-torso factor. The variable "feet" had low communalities for both men (.31) and women (.24), and "legs/ankles" fell just below the .40 cut-off thresholds for women (.38).

Factor IV was a *mid-torso factor* for both sexes. Dissatisfaction with weight and abdomen were the defining items for the women. These two items also defined this factor for men. As noted previously, a buttock also loaded with this factor as well, but was included with the lower-torso factor since it better fits that factor conceptually.

Factor V was a *sex organ factor* for both men and women. The two items defining the factor for both sexes were dissatisfaction with the size and appearance of one's sex organ.

Some body parts often believed to be important to body dissatisfaction did not load significantly on any of the factors. For example, for both sexes, dissatisfaction with *height* emerged as its own factor. Similarly, for women, dissatisfaction with *breasts* was relatively independent of dissatisfaction with other body parts. This examination of the structure of body dissatisfaction suggests that these were best conceptualized of as specific single-item factor rather than multiple-item common

factors. Therefore when scores to represent the factors are built, these two items were treated as single-item scores.

Table 2. *Factor Analysis of Body Parts Satisfaction Scale*

<i>Part A. Oblique Rotated Factor Pattern Matrices (Loadings .35 or greater are tabled)</i>												
<i>Item</i>	Factor I <i>Face</i>		Factor II <i>M: Upper Torso; F: Extremities</i>		Factor III <i>M: Lower Body; F: Lower Torso</i>		Factor IV <i>Mid Torso</i>		Factor V <i>Sex Organ</i>		<i>h²</i>	
	M	F	M	F	M	F	M	F	M	F	M	F
Height											.17	.14
Weight							.68	.61			.56	.68
Muscle			.53								.55	.41
Hair	.38	.38									.22	.18
Eyes	.41	.43									.20	.20
Ears	.37										.29	.17
Nose	.58	.48									.29	.27
Mouth	.67	.44									.44	.30
Teeth	.38	.39									.15	.19
Voice	.37										.21	.20
Chin	.55	.38									.37	.27
Complexion		.50									.25	.22
Face	.73	.84									.58	.62
Shoulders			.69	.57							.54	.38
Chest/Breast			.75								.60	.23
Arms			.68	.55							.62	.45
Hands				.46							.29	.28
Abdomen							.76	.59			.63	.51
Buttocks					.41	.70	.42				.47	.62
Hips (Thighs)					.59	.78					.58	.68
Legs/Ankles					.64	.43					.52	.38
Feet				.44	.51						.31	.24
Size Sex									.86	.87	.74	.70
Organs												
Appearance									.79	.83	.72	.69
Sex Organs												

<i>Part B. Correlations Among the Factors</i>					
	Factor I	Factor II	Factor III	Factor IV	Factor V
Factor I: Face	-	.52	.23	.06	.47
Factor II: Upper Torso / Extremities	.48	-	.37	.22	.52
Factor III: Lower Body / Lower Torso	.47	.39	-	.40	.25
Factor IV: Mid Torso	.28	.26	.30	-	.10
Factor V: Sex Organ	.45	.38	.38	.38	-

Note. M – Men; F – Women; In Part B of the table, the correlations for women are above the diagonal and the correlations for men are below the diagonal.

Constructing Subscales

To summarize, body dissatisfaction was clearly multidimensional and the items appear to be linked in ways that make conceptual sense. As shown on Table 2 (Part B), the factors were weakly to moderately correlated each other for men ($r=.26$ to $.48$) and for women ($r=.23$ to $.52$, except for the association between face satisfaction and mid-torso, $r=.06$). The average intercorrelation among factors was $.31$ for women and $.38$ for men. The items for each factor identified above were averaged to create subscale scores. The items composing the various factors are shown in Table 2. In addition to these scores, a separate, one-item score representing dissatisfaction with height and a one-item score for dissatisfaction with breasts (women only) were also used.

Each score was constructed by summing the items and dividing by the total number of items in it in order to standardize the range of the scores. The means, standard deviations, and intercorrelations among the subscores are shown in Table 3. The items were scored so that the higher the score, the greater the dissatisfaction (Range = 1 to 6). The reliabilities of the subscores were estimated using Cronbach's α and are included in the main diagonal of Table 3. All were reasonable in size (ranging from $.66$ to $.82$ for women, and $.74$ to $.84$ for men).

Second Order Factor Analysis: Building a Single Body Image Score

The weak to moderate intercorrelations among the subscale scores suggested that it might be fruitful to do a second-order factor analysis (Schmid & Leiman, 1957), where the intercorrelations among the factors were factor analyzed. If a single, second-order factor emerged, that finding would indicate the plausibility of building a single, overall *Body Image and Satisfaction-24* score as well as a set of subscores.

The results of the second-order factor analysis are shown in Table 4. For men, a single factor emerged that reflected the substantial intercorrelation among the various subscores. For the women, a strong first factor emerged together with a second weaker one. However, since (1) both subscores loaded *higher* on Factor I as well, and (2) the first factor accounted for 70% of the common variance in the correlation matrix, building a single, overall body-image score for women as well as men seemed warranted. The internal consistency reliability estimates of the total score are $.86$ and $.89$ for women and men, respectively. It is not meant to imply that the subscores can now be discarded. However, when an overall score is desired, the findings indicate that its construction is justified.

Table 3. Means, Standard Deviations, Intercorrelations, and Cronbach's α for Body Parts Satisfaction Scale Subscales

<i>Part A. Results for Women</i>									
	Extremities	Lower Torso	Mid Torso	Sex Organ	Height	Breast	Descriptives		
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>M</i>	<i>SD</i>	α
Face	.46	.27	.21	.39	.30	.31	4.6	0.6	.74
Extremities		.40	.37	.42	.25	.29	4.6	0.8	.66
Lower Torso			.58	.26	.22	.19	3.9	1.1	.76
Mid Torso				.23	.22	.07	3.6	1.2	.74
Sex Organ					.21	.38	4.9	0.8	.82
Height					-	.17	4.8	1.2	
Breast						-	4.3	1.0	
<i>Part B. Results for Men</i>									
	Upper Torso	Lower Body	Mid Torso	Sex Organ	Height		Descriptives		
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>		<i>M</i>	<i>SD</i>	α
Face	.52	.47	.31	.43	.29		4.7	0.6	.79
Upper Torso		.47	.38	.42	.19		4.5	0.8	.80
Lower Body			.43	.43	.28		4.6	0.8	.74
Mid Torso				.36	.27		4.0	1.1	.75
Sex Organ					.23		4.7	0.9	.84
Height					-		4.7	1.0	

Note. The subscales for women were created by averaging the following items: *Face* (Hair, Eyes, Ears, Nose, Teeth, Voice, Chin, Complexion, Overall Face), *Extremities* (Shoulders, Arms, Hands, Feet), *Lower Torso*, (Buttocks, Hips, Legs & Ankles), *Mid Torso* (Weight, Abdomen), *Sex Organs* (Size of Sex Organs, Appearance of Sex Organs), *Breast*, *Height*. The subscales for men were created by averaging the following items: *Face* (Hair, Eyes, Ears, Nose, Mouth, Teeth, Voice, Chin, Complexion, Overall Face), *Upper Torso* (Shoulders, Chest, Arms, General Muscle Tone), *Lower Body* (Buttocks, Hips, Legs & Ankles, Feet), *Mid Torso* (Weight, Abdomen), *Sex Organ* (Size of Sex Organ and Appearance of Sex Organ), *Height*.

Table 4. Unrotated Orthogonal Second-Order Factor Matrices for Subscales of the Body Parts Satisfaction Scale

Subscale	Factor I		Factor II		h^2	
	M	F	M	F	M	F
Face	.67	.54		.36	.45	.42
Upper Torso / Extremities	.67	.66			.45	.48
Lower Body / Lower Torso	.68	.68		.41	.47	.55
Mid Torso	.56	.67		.35	.31	.62
Sex Organ	.62	.53		.38	.38	.41
Height	.39	.37			.15	.28
Breast	-	.38	-		-	.15

Note. M – Men; F – Women.

Goal 3. Examining Links Between Dissatisfaction With Whole Body and Aspects of Body

The subscores were correlated with an item that asked the respondent to rate dissatisfaction with *overall* body appearance on a six-point scale ranging from extremely satisfied to extremely dissatisfied. The correlation with this item of the total body dissatisfaction score was $r=.78$ for both sexes (all $ps<.001$). The correlations of each subscore with the item were computed. They ranged in size from $r=.24$ to $r=.68$, providing evidence for the validity of the subscores as well (see Table 5).

For women, dissatisfaction with their mid-torso area, followed by their dissatisfaction with lower-torso area, were most predictive of their ratings of overall body dissatisfaction. This interpretation is supported by the *beta* coefficients produced when dissatisfaction with overall body appearance is regressed on the seven subscores from the *Body Parts Satisfaction Scale* (Table 5). Dissatisfaction with the mid-torso area was the strongest predictor, followed by dissatisfaction with the face and extremities. Although statistically significant, dissatisfaction with breasts, height, and sex organs were less predictive.

For men, dissatisfaction with the mid- and upper-torso areas were the strongest predictors of men's overall dissatisfaction with their overall body (Table 5). While dissatisfaction with the lower torso and body, face, and height made statistically significant contributions to the variance explained, they were considerably weaker in strength.

Table 5. Association Between Body Dissatisfaction Subscales and Total Scores on the Body Image Satisfaction-24 Measure with Measures of Psychological Well Being

	Overall Body Appearance				Feelings of Inadequacy		Difficulty Interacting with Opposite Sex	
	M		F		M	F	M	F
	<i>r</i>	β	<i>r</i>	β	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Face	.51***	.11***	.41***	.15***	.41***	.39***	-.27***	-.24***
Upper Torso / Extremities	.61***	.31***	.50***	.14***	.39***	.33***	-.22***	-.23***
Lower Body / Lower Torso	.54***	.14***	.59***	.20***	.33***	.40***	-.23***	-.19***
Mid Torso	.60***	.32***	.68***	.46***	.18***	.43***	-.13***	-.18***
Sex Organ	.47***	.10***	.33***	.02	.33***	.22***	-.24***	-.23***
Height	.34***	.10***	.30***	.06**	.24***	.19***	-.12***	-.13***
Breast	-	-	.24***	.06**	-	.16***	-	-.15***
Total Body Parts Satisfaction Scale Score	.75***	N/A	.70***	N/A	.44***	.45***	-.28***	-.31***

** $p<.01$; *** $p<.001$.

Note. M – Men; F – Women; The overall R^2 value for the regression model was .59 for men and .59 for women for body dissatisfaction subscores predicting dissatisfaction with overall body appearance. In the first two rows, the positive correlations indicate that people who were more dissatisfied with their bodies experienced more dissatisfaction with their overall body appearance and felt more inadequate. The negative correlation with difficulty interacting with the opposite sex indicates that people who felt worse about their bodies were less comfortable interacting with the opposite sex. The positive correlations in the final column indicate that people with greater body mass reported more dissatisfaction with their bodies.

Goal 4. Associations With Self-Esteem and Comfort With Social Interaction

Feelings of Inadequacy

People who were more dissatisfied with their bodies, across all measures, reported greater feelings of inadequacy (all $ps < .001$; Table 5), with the correlations ranging from $r = .16$ to $r = .43$. The pattern of results suggests that dissatisfaction with mid-torso, lower-torso, facial, and extremity areas were most highly related to feelings of inadequacy for women. Dissatisfaction with one's breasts and height appear to be less important. For men, dissatisfaction with the facial, upper-torso, and lower-torso areas along with dissatisfaction with their penises appear to be most highly related to self-esteem. Of less importance was dissatisfaction with height and the mid-torso area. The correlations between the total body dissatisfaction score and feelings of inadequacy were $r = .45$ and $r = .44$ suggesting that body dissatisfaction is strongly linked to self-esteem.

Cross-sex Interactions

People who were more dissatisfied also reported less comfort with cross-sex interactions, with correlations ranging from $r = -.13$ to $r = -.24$ for women and $r = -.12$ to $r = -.27$ for men, with all $ps < .001$. For the women, dissatisfaction with the face, extremities, lower-torso, mid-torso, and sex organs was most highly correlated with difficulty in cross-sex interactions. For men, the most important variables appeared to be dissatisfaction with the face, upper-torso, lower-torso, and sex organs. Overall, the association between the body dissatisfaction total score and comfort with cross-sex interactions were $r = -.21$ for women and $r = -.28$ for men.

Discussion

Goal 1. Identifying the Extent of Body Dissatisfaction in 1972

It is clear that in 1972, many men and women were dissatisfied with aspects of their appearance, particularly aspects of their appearance that change as one gains weight.

Consistent with the prestige attached to muscularity and muscle tone (Frederick, Fessler, & Haselton, 2005), dissatisfaction with muscle tone was

relatively common for both men and women, which is consistent with modern research (Gray & Frederick, 2012; McCreary & Sasse, 2000; McFarland & Petrie, 2012). For men, this is likely in part because men perceive that muscularity will make them more intimidating and attractive to women, and because women prefer somewhat muscular men, especially in short-term affairs (Frederick, Buchanan et al., 2007; Frederick & Haselton, 2007)

The face, like the body, can contain cues to one's underlying health and attributes (Gallup & Frederick, 2010; Little, Jones, & DeBruine, 2011), so it is not surprising that many people attend to facial appearance when choosing a mate. Most participants were satisfied with aspects of their face, but dissatisfaction with teeth and complexion were most common. Preferences for the color and shape of eyes, ears, chins, and so on may be relatively free to vary, but crooked, yellow, or rotting teeth are commonly viewed as unattractive (Hendrie & Brewer, 2012), as are blotches and pimples.

Given the link between breast size with femininity and penis size with masculinity, the relatively *low* degree of dissatisfaction with these aspects of the body parts is somewhat surprising. Recent research has found that many women express dissatisfaction with their breast size and shape (e.g., Forbes & Frederick, 2008; Frederick, Peplau, & Lever, 2008). Contemporary research has found the percentage of men who report dissatisfaction with their penis depends on what aspect is assessed: non-erect length (29%), erect length (5%), overall size (11%), or overall appearance (5%; Morisson, Bearden, Ellis, & Harriman, 2005). In a large study of adults, 45% of adult men desired a larger penis (and 0.2% desired a smaller penis; Lever, Frederick, & Peplau, 2006).

The findings highlight two additional aspects of the body that are rarely studied in the field of body image: height and feet. First, 13% of men and women were dissatisfied with their height. The low level of dissatisfaction is surprising. Many people attend to height when selecting a partner, with people preferring a relationship in which the man is taller than the woman, although men are somewhat more willing to violate this male-taller norm (Salska et al., 2008). Recent research has found that many shorter than average men and women report dissatisfaction with their heights (Lever, Frederick, Laird, & Sadeghi-Azar, 2007). Second, a surprisingly large number of women expressed dissatisfaction with their feet (20%), and aspect of the body for which there is little research. Fessler et al. (2012) found consistent evidence across seven studies that smaller feet in women are rated more attractive, which may partly explain the dissatisfaction identified here.

Goal 2. Identifying the Factor Structure

The factor analysis revealed factors that roughly translated into the following categories for men: face, upper torso, lower body, midtorso, sex organ, and height. The factors were similar for women: face, extremities, lower torso, mid torso, sex

organ, breast, and height. These factors suggest that concerns with one's body can be separated by different aspects of one's appearance. These factors differ from those identified by McFarland and Petrie (2002), which may be due to a variety of differences between the samples (e.g., ages of participants, year survey was conducted). The factors identified in the current study were generally weakly to moderately intercorrelated. A second order factor analysis suggests it may be defensible to create an overall body dissatisfaction score.

Goal 3. Examining Links Between Dissatisfaction with Whole Body and Aspects of Body

Some aspects of appearance were more predictive of overall body dissatisfaction than others. Dissatisfaction with the mid-torso was a particularly strong predictor for women, followed by the lower, extremities, and face. The biggest contributors to body dissatisfaction for men went up and down the entire torso, including upper torso, midtorso, and lower body, with sex organs not far behind. Many of these aspects are heavily influenced by body fat levels and degree of muscle tone, suggesting the primacy of these concerns when people evaluate their overall attractiveness.

Goal 4. Associations with Self-Esteem and Comfort with Social Interaction

Consistent with past research, people who reported higher levels of body dissatisfaction on the *Body Parts Satisfaction Scale* tended to report greater feelings of dissatisfaction on a single item measure of dissatisfaction with appearance, greater feelings of inadequacy, and less comfort interacting with members of the other sex.

Limitations

While the readership was national in scope, it differed in several respects from a 1970s national probability sample of adults. The readership was somewhat younger and better educated than was the general population. Despite its limitations, however, the sample was much broader than other samples drawn to examine body image at the time, which were primarily limited to college students.

Conclusion

This study provides the first systematic investigation of the factor structure and validity of the *Body Parts Satisfaction Scale* in a large population of adults. The results suggest the scale can be analyzed by items, by subscales, or by total score. Future research examining the prevalence of body dissatisfaction and factor

structure in a national sample adult to establish whether these factors emerge in the current context would be a valuable next step in this research area.

References

- Asgeirsdottir, B.B., Ingolfssdottir, G., & Sigfusdottir, I.D. (2012). Body image trends among Icelandic adolescents: A cross-sectional national study from 1997 to 2010. *Body Image, 9*, 404-408.
- Adersen, B.L., & LeGrand, J. (1991). Body image for women: Conceptualization, assessment, and a test of its importance to sexual dysfunction and medical illness. *Journal of Sex Research, 28*, 457-478.
- Bergeron, S.M., & Senn, C.Y. (1998). Body image and sociocultural norms: A comparison of heterosexual and lesbian women. *Psychology of Women Quarterly, 22*, 385-401.
- Berscheid, E., Hatfield [Walster], E., & Bohrnstedt, G. (1972). Body image - A *Psychology Today* Questionnaire. *Psychology Today, 6*, 57-67.
- Berscheid, E., Hatfield [Walster], E., & Bohrnstedt, G. (1973). The happy American body: A survey report. *Psychology Today, 7*, 119-131.
- Bohrnstedt, G.W. (1977). *On measuring body satisfaction*. Unpublished manuscript. University of Minnesota.
- Brown, T.A., Cash, T.F., & Lewis, R.J. (2006). Body-image disturbances in adolescent female binge-purgers: A brief report of the results of a national survey in the USA. *The Journal of Child Psychology and Psychiatry, 30*, 605-613.
- Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J.K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice, 12*, 421-433.
- Cameron, E.M., & Ferraro, F.R. (2004). Body satisfaction in college women after brief exposure to magazine images. *Perceptual and Motor Skills, 98*, 1093-1099.
- Cash, T.F., & Henry, P.E. (1995). Women's body images: The results of a national survey in the United States. *Sex Roles, 33*, 19-28.
- Cash, T.F., Theriault, J., & Annis, N.M. (2004). Body image in an interpersonal context: Adult attachment, fear of intimacy, and social anxiety. *Journal of Social and Clinical Psychology, 23*, 89-103.
- Cash, T.F., Winstead, B.W., & Janda, L.H. (1986). The great American shape-up: Body image survey report. *Psychology Today, 20*, 30-37.
- Davison, T.E., & McCabe, M.P. (2006). Adolescent body image and psychosocial functioning. *Journal of Social Psychology, 146*, 15-30.
- Fessler, D.M.T., Stieger, S., Asaridou, S.S., Bahia, U., Cravalho, M., de Barros, P., ...Voracek, M. (2012). Testing a postulated case of intersexual selection in humans:

- The role of foot size in judgments of physical attractiveness and age. *Evolution & Human Behavior*, 33, 147-164.
- Forbes, G.B., & Frederick, D.A. (2008). The UCLA Body Project II: Breast and body dissatisfaction among African, Asian, European, and Hispanic American college women. *Sex Roles*, 58, 449-457.
- Franzoi, S.L., & Shields, S.A. (1984). The Body Esteem Scale: Multidimensional structure and sex differences in a college population. *Journal of Personality Assessment*, 48, 173-177.
- Frederick, D.A., Buchanan, G.M., Sadeghi-Azar, L., Peplau, L.A., Haselton, M.G., Berezovskaya, A., & Lipinski, R.E. (2007). Desiring the muscular ideal: Men's body satisfaction in the United States, Ukraine, and Ghana. *Psychology of Men and Masculinity*, 8, 103-117.
- Frederick, D.A., Fessler, D.M.T., & Haselton, M.G. (2005). Do representations of male muscularity differ in men's and women's magazines? *Body Image*, 2, 81-86.
- Frederick, D.A., Forbes, G.B., Grigorian, K., & Jarcho, J.M. (2007). The UCLA Body Project I: Gender and ethnic differences in self-objectification and body satisfaction among 2,206 undergraduates. *Sex Roles*, 57, 317-327.
- Frederick, D.A., Jafary, A., Daniels, E.A., & Gruys, K. (2011). Surveys and the epidemiology of body image. In T. Cash (Ed.), *The encyclopedia of body image and human appearance* (pp. 766-773). San Diego: Academic Press.
- Frederick, D.A., Lever, J., & Peplau, L.A. (2007). Interest in cosmetic surgery and body image: Views of men and women across the lifespan. *Plastic and Reconstructive Surgery*, 120, 1407-1415.
- Frederick, D.A., & Haselton, M.G. (2007). Why is muscularity sexy? Tests of the fitness indicator hypothesis. *Personality and Social Psychology Bulletin*, 33, 1167-1183.
- Frederick, D.A., Peplau, L.A., & Lever, J. (2006). The swimsuit issue: Correlates of body image in a sample of 52,677 heterosexual adults. *Body Image*, 4, 413-419.
- Frederick, D.A., Peplau, L.A., & Lever, J. (2008). The Barbie mystique: Satisfaction with breast size and shape across the lifespan. *International Journal of Sexual Health*, 20, 200-211.
- Fredrickson, B.L., & Roberts, T.A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, 21, 173-206.
- Gallup, G.G., Jr., & Frederick, D.A. (2010). The science of sex appeal: An evolutionary perspective. *Review of General Psychology*, 14, 240-250.
- Gray, P.B., & Frederick, D.A. (2012). Body image and body type preferences in St. Kitts, Caribbean: A cross-cultural comparison with U.S. samples regarding attitudes towards muscularity, body fat, and breast size. *Evolutionary Psychology*, 10, 631-655.
- Hendrie, C.A., & Brewer, G. (2012). Evidence to suggest that teeth act as human ornament displays signalling mate quality. *PLoS ONE*, 7, e42178.

- Janis, I., & Field, P. (1959). Sex differences and personality factors related to persuasibility. In C. Hovland & I. Janis (Eds.), *Personality and persuasibility* (pp. 55-68). New Haven: Yale University Press.
- Kimlicka, T., Cross, H., & Tamal, J. (1983). A comparison of androgynous, feminine, masculine, and undifferentiated women on self-esteem, body satisfaction, and sexual satisfaction. *Psychology of Women Quarterly*, 7, 291-294.
- Langlois, J.H., Kalakanis, L., Rubenstein, A.J., Larson, A., Hallam, M., & Smoot, M. (2000). Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin*, 126, 390-423.
- Lever, J., Frederick, D.A., Laird, K., & Sadeghi-Azar, L. (2007). Tall women's satisfaction with their height: General population data challenge assumptions behind medical interventions to stunt girls' growth. *Journal of Adolescent Health*, 40, 192-194.
- Lever, J., Frederick, D.A., & Peplau, L.A. (2006). Does size matter? Men's and women's views on penis size across the lifespan. *Psychology of Men & Masculinity*, 7, 129-143.
- Little, A.C., Jones, B.C., & DeBruine, L.M. (2011). Facial attractiveness: Evolutionary based research. *Philosophical Transactions of the Royal Society B*, 366, 1638-1659.
- McCreary, D.R., & Sasse, D.K. (2000). An exploration of the drive for muscularity in adolescent boys and girls. *Journal of American College Health*, 48, 297-304.
- McFarland, M.B., & Petrie, T.A. (2012). Male body satisfaction: Factorial and construct validity of the Body Parts Satisfaction Scale for men. *Journal of Counseling Psychology*, 59, 329-337.
- Mintz, L.B., & Betz, N.E. (1988). Prevalence and correlates of eating disordered behaviors among undergraduate women. *Journal of Consulting Psychology*, 35, 463-471.
- Morrison, T.G., Bearden, A.B., Ellis, S.R., & Harriman, R. (2005). Correlates of genital perceptions among Canadian post-secondary students. *Electronic Journal of Human Sexuality*, 8.
- Peplau, L.A., Frederick, D.A., Yee, C.K., Maisel, N., Lever, J., & Ghavami, N. (2009). Body image satisfaction in heterosexual, gay, and lesbian adults. *Archives of Sexual Behavior*, 38, 713.
- Pesa, J.A., Syre, T.R., & Jones, E. (2000). Psychosocial differences associated with body weight among female adolescents: The importance of body image. *Journal of Adolescent Health*, 26, 330-337.
- Petrie, T.A., Tripp, M.M., & Harey, P. (2002). Factorial and construct validity of the body parts satisfaction scale revisited: An examination of minority and nonminority women. *Psychology of Women Quarterly*, 26, 213-221.
- Pinhas, L., Toner, B.B., Ali, A., Garfinkel, P.E., & Stuckless, N. (1999). The effects of the ideal of female beauty on mood and body satisfaction. *International Journal of Eating Disorders*, 25, 223-226.

- Salska, I., Frederick, D.A., Pawlowski, B., Reilly, A., Laird, K., & Rudd, N. (2008). Conditional mate preferences: Factors influencing preferences for height. *Personality and Individual Differences, 44*, 203-215.
- Schmid, J., & Leiman, J.M. (1957). The development of hierarchical factor solutions. *Psychometrika, 22*, 53-61.
- Siever, M.D. (1994). Sexual orientation and gender as factors in socioculturally acquired vulnerability to body dissatisfaction and eating disorders. *Journal of Consulting and Clinical Psychology, 62*, 252-260.
- Stice, E., Hayward, C., Cameron, R.P., Killen, J.D., & Taylor, C.B. (2000). Body-image and eating disturbances predict onset of depression among female adolescents: A longitudinal study. *Journal of Abnormal Psychology, 109*, 438-444.
- Swami, V., Frederick, D.A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., ... Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin, 36*, 309-325.
- Thompson, J.K. (1995). Body image assessment: A review of figural drawing scales. *Personality and Individual Differences, 48*, 107-111.
- Tripp, M.M., & Petrie, T.A. (2001). Sexual abuse and eating disorders: A test of a conceptual model. *Sex Roles, 44*, 17-32.
- White, J., & Halliwell, E. (2010). Examination of a sociocultural model of excessive exercise among male and female adolescents. *Body Image, 7*, 227-2.

Faktorska struktura i valjanost Ljestvice zadovoljstva pojedinim dijelovima tijela – rezultati istraživanja iz 1972. u časopisu Psychology Today

Sažetak

Prvo je veće nacionalno istraživanje o slici tijela provedeno 1972. godine pod pokroviteljstvom časopisa Psychology Today. Slika tijela procjenjena je korištenjem Ljestvice zadovoljstva dijelovima tijela (Body Parts Satisfaction Scale), koja ispituje nezadovoljstvo koje ljudi doživljavaju u odnosu na 24 različita aspekta tijela. Iako u literaturi dolazi do kontinuiranoga oslanjanja na tu Ljestvicu i referiranja na imenovano istraživanje, podaci o faktorskoj strukturi ovoga instrumenta na uzorku odraslih osoba nisu do sada objavljeni, a citiranje se originalne Ljestvice temelji na neobjavljenom rukopisu (Bohnstedt, 1977). Eksploratorna je faktorska analiza, provedena na uzorku od 2013 odraslih osoba, pokazala faktore za muškarce (lice, seksualni organ, visina, donji dio tijela, srednji i gornji torzo, visina) i za žene (lice, seksualni organ, visina, donji dio tijela, srednji dio torza, ekstremiteti, grudi). Faktori su u međusobno slaboj do umjerenoj interkorelaciji, što sugerira da Ljestvica može biti analizirana po česticama, podljestvicama, ali i prema ukupnom rezultatu. Sudionici s višim rezultatima na Ljestvici nezadovoljstva pokazuju niže samopoštovanje te se osjećaju manje ugodno u interakciji s osobama suprotnoga spola. Analize daju korisnu točku usporedbe za istraživače koji žele ispitati spolne razlike u nezadovoljstvu specifičnim aspektima tijela, kao i faktorsku strukturu koja povezuje pojedine čestice.

Ključne riječi: Psychology Today, slika tijela, Ljestvica zadovoljstva dijelovima tijela, valjanost, prevalencija nezadovoljstva tijelom

Received: 27.03.2013.