

1 Running Head: THE BODY PARTS SATISFACTION SCALE

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

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24

Abstract

25 In 1972, the first major national study on body image was conducted under the auspices of *Psychology*  
26 *Today*. Body image was assessed with the *Body Parts Satisfaction Scale*, which examined the  
27 dissatisfaction people experienced with 24 aspects of their bodies. Despite the continued use of this scale,  
28 data on the validity of this measure have never been published. As the 40th anniversary of the first major  
29 national study on body image approaches, we take this opportunity to examine the prevalence and factor  
30 structure of body image concerns in 1972. An exploratory factor analysis conducted on 2,013 participants  
31 revealed factors that differed slightly for men (Face, Sex Organ, Height, Lower Body, Mid Torso, Upper  
32 Torso) compared to women (Face, Sex Organ, Height, Lower Torso, Mid Torso, Extremities, Breast).  
33 The factors were highly intercorrelated, suggesting the scale can be analyzed by item, by subscales, or by  
34 total score.

35

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

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, Kalakanis, Rubenstein, Larson, Hallam, & Smoot, 2000). Popular media images represent a narrow range of body types as being prestigious and physically attractive, and humans naturally aspire to attain traits that will give them greater social prestige. In every culture across the world, people attempt to enhance their appearance in the hopes of gaining greater social status (Etcoff, 1999).

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). This dissatisfaction is associated with social anxiety (Cash, Theriault, & Annis, 2004), depression (Stice, Hayward, Cameron, Killen, & Taylor, 2000), binge eating (Gordon, Holm-Denoma, Troop-Gordon, & Sand, 2012), a compulsive need for excessive exercise (White & Halliwell, 2010), negative impacts on many aspects of one's life (Cash, Jakatdar, & Williams, 2004), desire for cosmetic surgery (Frederick, Lever, & Peplau, 2007), and discomfort with one's sex life (Peplau, Frederick, Yee, Maisel, Lever, & Ghavami, 2010).

Despite the harmful effects of poor body image, 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, Ingolfsson, & Sigfusdottir, 2012; Cash & Henry, 1995; Cash, Winstead, &

59 Janda, 1986; Frederick, Peplau, & Lever, 2006; Swami et al., 2010; for a review, see Frederick, Jafary,  
60 Daniels, & Gruys, 2012).

61 The first large-scale attempt to assess the epidemiology of body dissatisfaction came in 1972, when  
62 Berscheid, Hatfield [Walster], and Bohrnstedt created the 109 item *Body Image Satisfaction Scale* and  
63 published it in the magazine *Psychology Today* and asked readers to complete the survey and mail it in.  
64 The authors then presented a subset of the results in *Psychology Today* (Berscheid, Hatfield [Walster], &  
65 Bohrnstedt, 1973).

66 Of most interest here are the first 24 items, which directly assessed dissatisfaction with different  
67 aspects of one's body, which have been termed the *Body Parts Satisfaction Scale*. This scale, or subsets of  
68 items from this scale, have been used by scholars conducting research on media (Cameron & Ferraro,  
69 2004; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999), body image (Petrie, Tripp, & Harey, 2002),  
70 sexual orientation (Bergeron & Senn, 1998), gender identity (Kimlicka, Cross, & Tamal, 1983), sexual  
71 dysfunction (Adersen & Legrand, 1991), and disordered eating (Brown, Cash, & Lewis, 2006; Mintz &  
72 Betz, 1988; Siever, 1994; Tripp & Petrie, 2001). Data on the concurrent validity and underlying factor  
73 structure of the full measure, however, have never been published. This paper is intended to remedy that  
74 omission.

75 Specifically, here we present the intercorrelations among the items, a factor analysis of the *Body*  
76 *Parts Satisfaction Scale*, and the internal consistency of the items within each factor. Further, we  
77 predicted that if the measure was valid, then higher levels of body dissatisfaction on this measure would be  
78 linked to lower levels of self-esteem (Pesa, Syre, & Jones, 2000), more difficulty interacting with the other  
79 sex (Davison & McCabe, 2006), and greater body mass (Frederick, Forbes, Grigorian, & Jarcho, 2007;  
80 Frederick, Peplau, & Lever, 2006).

81

## 82 **Overview of Research Goals**

83 To summarize, the goals of this study were:

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

89 **Goal 2: Identifying the factor structure and intercorrelations among items.** We present the  
90 intercorrelations among items and the factors that emerge through an exploratory factor analysis, as well  
91 as second order factors that may link together the lower order factors. That is, do people who score high  
92 on some items tend to score high on other specific items because responses to them are driven by a latent  
93 factor, how many of these latent factors can be identified by the responses, and are there additional factors  
94 that link together the first set of factors identified?

95 **Goal 3: Examining links between dissatisfaction with whole body and aspects of body.**

96 We examine the extent to which concerns with different aspects of the body predict one's feelings about  
97 their overall attractiveness. For example, are concerns with the mid torso area (e.g., abdomen) a better  
98 predictor of overall feelings of attractiveness than concerns with one's face, and do these associations  
99 differ for men and women?

100 **Goal 4: Establishing concurrent validity of the scale.** To demonstrate the predictive validity of  
101 the measure, we examine whether people who are more dissatisfied with their bodies report greater  
102 feelings of inadequacy, less comfort interacting with the other sex, and greater body mass.

## 103 **Method**

### 104 **Participants**

105           The data was collected using a questionnaire mailed to the readership of *Psychology Today*. More  
106 than 60,000 readers completed and mailed in the questionnaire. This large number of participants made it  
107 impossible to code and keypunch every questionnaire. Therefore, a sample of 2,013 (1000 men and 1013  
108 women) was drawn on which to base our analyses. In order to approximate the actual distribution of sex  
109 and age in the United States, a sample that had been stratified by sex and age was selected. The chosen  
110 sample included roughly 50% men and 50% women, and within each sex, 45% of the sample was 24 years  
111 of age or younger, 25% was 25-44 years of age, and 31% was 45 years of age or older.

## 112 **Procedure**

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

115           **Body Parts Satisfaction Scale.** Participants were presented with a list of 24 aspects of their bodies  
116 (see Table 1). They expressed their degree of satisfaction or dissatisfaction with each of these aspects  
117 using a six-point Likert scale (1 = Extremely Satisfied, 2 = Quite Satisfied, 3 = Somewhat Satisfied, 4 =  
118 Somewhat Dissatisfied, 5 = Quite Dissatisfied, 6 = Extremely Dissatisfied). To facilitate interpretation of  
119 the data, we created several different versions of this variable, including the percent expressing any  
120 dissatisfaction with each aspect of their body (scores of 4-6 for that item; see Tables 1 and 2) and those  
121 expressing substantial dissatisfaction (scores of 5-6) for each item (see Table 2). Higher scores on the  
122 items indicate greater dissatisfaction.

123           **Overall Body Dissatisfaction.** Participants rated their satisfaction with their "overall body  
124 appearance" on the six-point Likert Scale ranging from Extremely Satisfied to Extremely Dissatisfied  
125 mentioned above. Higher scores indicate greater dissatisfaction.

126           **Body Mass.** Participants reported their height in inches and weight in pounds. Their weight was  
127 then divided by their height to create an assessment of body mass. This approach differs from the

128 currently common convention of calculating body mass using the standard BMI formula (weight divided  
129 by height squared using metric system values) but provides a similar assessment of body mass. Higher  
130 scores indicate greater body masses.

131 **Feelings of Inadequacy.** Poor self-esteem was assessed with the Janis-Field Feelings of  
132 Inadequacy Scale, which measures lack of confidence with oneself in a variety of life domains and (Janis  
133 & Field, 1959). The measure included 10 items such as "How often do you feel self-conscious" (1 =  
134 Never, 5 = Very Often) and "When you talk in front of a class or group of persons your own age, how  
135 apprehensive do you usually feel?" (1 = Not at all apprehensive, 5 = Very Apprehensive). Cronbach's  $\alpha$   
136 for this measure were .84 for women and .82 for men. Higher scores on the scale indicate greater feelings  
137 of inadequacy.

138 **Difficulty Relating to Other Sex.** Participants were presented with the item "In general, I find it  
139 difficult to relate well to persons of the opposite sex". They recorded their answers on a Likert scale  
140 ranging from 1 (Strongly agree) to 6 (Strongly disagree). Higher scores indicate less difficulty interacting  
141 with the other sex.

## 142 **Results**

### 143 **Overview of Results**

144 Although the original dataset no longer exists, detailed archival records of the analyses conducted  
145 were maintained by George Bohrnstedt. Some of the data analytic procedures reported in this manuscript  
146 were state of the art at the time of the analyses, but may have been supplanted with more refined methods.  
147 For example, confirmatory factor analysis was just being developed at the time of study and was not  
148 conducted on the measure. Therefore, only results of an exploratory factor analysis are reported.

149 Consistent with Goal 1 (*extent of dissatisfaction*), report the percent who experience significant  
150 dissatisfaction as well as the overall percent dissatisfied, with the items grouped according to the subscales

151 generated by the factor analysis (Table 1). Consistent with Goal 2 (*factor structure*), we then present the  
152 intercorrelations among the items, showing the extent to which people who express dissatisfaction with  
153 one aspect of their bodies tend to express dissatisfaction with other aspects of their bodies (Table 2). We  
154 present the factor loadings of each item and the correlations among factors for men and women (Table 3),  
155 followed by the average level of dissatisfaction across each of the subscales for men and women (Table 4),  
156 as well as the overall intercorrelations among scores on these subscales. We then present the results of the  
157 second order factor analysis (Table 5).

158 Consistent with Goal 3 (*linking part to whole body dissatisfaction*), we then present the correlations  
159 between scores on each subscale and reports of overall body dissatisfaction, and well as a regression  
160 predicting overall body dissatisfaction (Table 6). Finally, consistent with Goal 4 (*establishing concurrent*  
161 *validity*), we present the extent to which people who report more body dissatisfaction on each subscale  
162 report more feelings of inadequacy and more difficulty interacting with members of the other sex (Table  
163 6).

#### 164 **Goal 1: Identifying the Extent of Body Dissatisfaction in 1972.**

165 It is clear that weight was on people's mind in 1972. As shown on Table 1, dissatisfaction with  
166 one's abdomen the most common source of dissatisfaction for both women (50%) and men (36%), and  
167 dissatisfaction with weight was ranked third for women (48%) and second for men (35%). Overall, traits  
168 that can be affected by increasing or decreasing body fat level, such as abdomen, hips, weight, and  
169 buttocks, were among the most common sources of dissatisfaction for women and men. The percentage  
170 expressing substantial dissatisfaction with those aspects of the body was substantially lower. Only 19% of  
171 women and 11% of men reported being substantially dissatisfied with their abdomen, and 21% of women  
172 and 10% of men were substantially dissatisfied with their weight.

173 Dissatisfaction with muscle tone was somewhat common for women (30%) and men (26%).



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

179 **Goal 2: Identifying the Factor Structure and Intercorrelations Among Items.**

180 **The multidimensional factor structure of body image.** A factor analysis was conducted to  
181 determine whether underlying factors could account for covariation among the individual body  
182 dissatisfaction items. The intercorrelations (Table 2) among the 24 body-image items were factor analyzed  
183 using a principal components algorithm with the square of the multiple correlations in the diagonal,  
184 followed by an oblimax rotation (Harman, 1967; see Table 3). Only loadings greater than or equal to .35  
185 are tabled. Two points are immediately clear. First, body image is not unidimensional: not one but five  
186 interpretable factors emerge. Second, while the loading patterns for men and women are similar, they are  
187 not exactly the same.

188 For both sexes, Factor I appears to be a *face factor*. For both sexes, the item primarily defining the  
189 factor is dissatisfaction with overall facial attractiveness. In addition, for women, dissatisfaction with their  
190 faces seems most heavily determined by dissatisfaction with complexion, nose, mouth, and eyes. For men,  
191 the relevant features appear to be dissatisfaction with mouth, nose, and chin. The most interesting  
192 difference between men and women on this factor is the absence of dissatisfaction with complexion for  
193 men and its rather prominent inclusion for women.

194 The items defining Factor II for women are dissatisfaction with shoulders, arms, hands, and feet.  
195 The emergence of this factor suggests that women see these body parts in a unitary way. Given the items  
196 that define this factor for the women, it has been named the *extremities factor*. No parallel factor for men

197 was found. Instead, Factor II for men appears to be an *upper torso factor*, defined by dissatisfaction with  
198 chest, shoulders, arms, and general muscle tone.

199 For both sexes, Factor III appears to be a *lower torso factor* for women and a *lower body factor*.  
200 For women dissatisfaction with hips and upper thighs, buttocks, legs, and ankles (in that order) define this  
201 factor. For men, dissatisfaction with feet also loads on this factor. Furthermore, the *pattern* of loadings is  
202 somewhat different for men. Dissatisfaction with legs and ankles appears to be the most important item  
203 for defining this factor, followed by dissatisfaction with hips/thighs, feet, and buttocks (in that order).

204 Factor IV is a *mid-torso factor* for both sexes. Dissatisfaction with weight and abdomen are the  
205 defining items for the women, while the same two items plus dissatisfaction with buttocks defines this  
206 item for the men. This last item is the only one that loaded on more than one factor (it also loaded on  
207 Factor IV), a fact that suggests the relative *conceptual* independence of the five factors for both sexes.  
208 When scores were constructed to represent the factors, this item was included with the lower-torso factor  
209 since it better fits that factor conceptually.

210 Factor V is a *sex organ factor* for both men and women. The two items defining the factor for both  
211 sexes are dissatisfaction with the size of one's sex organ and dissatisfaction with its appearance.

212 Some body parts often believed to be important to body dissatisfaction did not load significantly on  
213 any of the factors. For example, for both sexes, dissatisfaction with *height* is relatively independent of any  
214 factors. Similarly, for women, dissatisfaction with *breasts* is relatively independent of dissatisfaction with  
215 other body parts. This examination of the structure of body dissatisfaction suggests that these are best  
216 conceptualized of as specific single-item rather than multiple-item common factors (Harman, 1967).

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

218 **Constructing subscales.** To summarize, body dissatisfaction is clearly multidimensional and the  
219 items appear linked in ways that make conceptual sense. The factors were substantially correlated with

220 each other, however, with the average intercorrelation among factors being .31 for women and .38 for men  
221 (Table 3). The items for each factor identified above were averaged to create subscale scores. The items  
222 composing the various scores are shown in Table 4. In addition to these scores, a separate, one-item score  
223 representing dissatisfaction with height and a one-item score for dissatisfaction with breasts (women only)  
224 were also used.

225 Each score was constructed by summing the items and dividing by the total number of items in it in  
226 order to standardize the range of the scores. The means, standard deviations, in intercorrelations among  
227 the subscores are shown in Table 4. The items are scored so that the higher the score, the greater the  
228 dissatisfaction (Range = 1 to 6). While the actual sizes of the correlations are slightly different than those  
229 in Table 2 (since the subscores are factor-based, rather than actual factor scores), the pattern of  
230 relationships is virtually identical. The reliabilities of the subscores were estimated using Cronbach's  $\alpha$   
231 and are included in the main diagonal of Table 4. All are reasonable in size (ranging from .66 to .82 for  
232 women, and .74 to .84 for men).

233 **Second order factor analysis: Building a single body image score.** The high intercorrelations  
234 among the scores suggested that it might be fruitful to do a second-order factor analysis (Schmid &  
235 Leiman, 1957), where the intercorrelations among the factors were factor analyzed. If a single, second-  
236 order factor emerged, that finding would indicate the plausibility of building a single, overall *Body Image*  
237 *and Satisfaction-24* score as well as a set of subscores.

238 The results of the second-order factor analysis are shown in Table 4. For men, a single factor  
239 emerged that reflected the substantial intercorrelation among the various subscores. For the women, a  
240 strong first factor emerged together with a second weaker one. However, since (1) both subscores loaded  
241 *higher* on Factor I as well, and (2) the first factor accounted for 70% of the common variance in the  
242 correlation matrix, building a single, overall body-image score for women as well as men seemed

243 warranted. The internal consistency reliability estimates of the total score are .86 and .89 for women and  
244 men, respectively. It is not meant to imply that the subscores can now be discarded. However, when an  
245 overall score is desired, the findings indicate that its construction is justified.

246 **Goal 3: Examining Links between Dissatisfaction with Whole Body and Aspects of Body.**

247 To examine criterion-related validity, the subscores were correlated with an item that asked the  
248 respondent to rate dissatisfaction with *overall* body appearance on a six-point scale ranging from  
249 extremely satisfied to extremely dissatisfied. The correlation with this item of the total body  
250 dissatisfaction score is .78 for both sexes (all  $ps < .001$ ). In addition, the correlations of each subscore  
251 with the item were computed (see Table 6). They range in size from  $r = .24$  to .68, thus providing  
252 evidence for the validity of the subscores as well (see Table 5).

253 For women, dissatisfaction with their mid-torso area, followed by their dissatisfaction with lower-  
254 torso area, were most predictive of their ratings of overall body dissatisfaction. This interpretation is  
255 supported by the *beta* coefficients produced when dissatisfaction with overall body appearance is  
256 regressed on the seven subscores from the *Body Parts Satisfaction Scale* (Table 6). Dissatisfaction with  
257 the mid-torso area is clearly the most important determinant followed by dissatisfaction with the face and  
258 extremities. Although statistically significant, dissatisfaction with breasts, height, and sex organs were  
259 less predictive.

260 For men, the aspects of the body that were most predictive of overall body dissatisfaction differed  
261 from the aspects that were most predictive for women. Dissatisfaction with the mid- and upper-torso areas  
262 appears the prime determinant of dissatisfaction with men's overall body attractiveness, as both the zero-  
263 order correlations and the beta weights in Table 6 indicate. While dissatisfaction with the lower torso and  
264 body, face, and height made statistically significant contributions to the variance explained, they were  
265 considerably lower in strength.

266 **Goal 4: Establishing the Concurrent Validity of the Scale.**

267 To examine the construct validity of the *Body Parts Satisfaction Scale*, we examined whether  
268 people who scored higher on the subscales and overall scale score reported greater feelings of inadequacy,  
269 less comfort interacting with the other sex, and higher body masses.

270 **Feelings of inadequacy.** People who were more dissatisfied with their bodies, across all measures,  
271 reported greater feelings of inadequacy (all  $ps < .001$ ; Table 6), with the correlations ranging from  $r = .16$   
272 to  $r = .43$ . The pattern of results suggests that dissatisfaction with mid-torso, lower-torso, facial, and  
273 extremity areas were most highly related to feelings of inadequacy for women. Dissatisfaction with one's  
274 breasts and height appear to be less important. For men, dissatisfaction with the facial, upper-torso, and  
275 lower-torso areas along with dissatisfaction with their penises appear to be most highly related to self-  
276 esteem. Of less importance was dissatisfaction with height and the mid-torso area. The correlations  
277 between the total body dissatisfaction score and feelings of inadequacy were  $r = .45$  and  $r = .44$  for the  
278 women and men respectively, suggesting that the overall total dissatisfaction score has concurrent and  
279 construct validity.

280 **Cross-sex interactions.** Construct validity was also examined by correlating the scores with  
281 responses to the item dealing with degree of discomfort in cross-sex interactions (Table 6). For women,  
282 the correlations range from  $r = -.13$  to  $r = -.24$ ; for men, from  $r = -.12$  to  $r = -.27$ , with all  $ps < .001$ . While  
283 not large, these correlations do suggest, as hypothesized, that dissatisfaction with one's body is related to  
284 the less comfort interacting with the opposite sex. It is interesting that the pattern of correlations observed  
285 is nearly the same as the patterns of correlations between the scores and self-esteem. For the women,  
286 dissatisfaction with the face, extremities, lower-torso, mid-torso, and sex organs is most highly correlated  
287 with difficulty in cross-sex interactions. For men, the most important variables appear to be dissatisfaction  
288 with the face, upper-torso, lower-torso, and sex organs. The correlations of  $r = -.21$  and  $r = -.28$  between

289 the total score and difficulty in interacting with the opposite sex is evidence of the construct validity of this  
290 measure as well.

291 **Body mass.** Additional evidence for validity of this construct is provided by correlating body mass  
292 with the body dissatisfaction subscores and totals (Table 6). Among women, participants with greater  
293 body masses were more likely to be dissatisfied with their mid-torsos ( $r = .55, p < .001$ ), extremities ( $r =$   
294  $.23, p < .001$ ), and lower-torsos ( $r = .33, p < .001$ ). Body mass was uncorrelated with dissatisfaction with  
295 the face, sex organs, and height. Women with lower body masses were slightly more dissatisfied with  
296 their breasts. This relation, however, was a weak one ( $r = -.09, p < .001$ ). Unfortunately, the correlation  
297 between the total body dissatisfaction and body mass was not computed at the time these analyses were  
298 conducted and therefore is not reported in Table 6 for either sex.

299 Among men, participants with greater body masses were more likely to be dissatisfied with their  
300 mid-torsos ( $r = .38, p < .001$ ) but not their upper-torso area ( $r = -.15, p < .001$ ). Body mass was not  
301 significantly correlated with dissatisfaction with lower-torsos, face, or height. A small significant  
302 correlation was found between body mass and dissatisfaction with one's sex organs ( $r = .07, p < .05$ ),  
303 although the correlation is so small as to call into question its substantive importance.

## 304 **Discussion**

### 305 **Goal 1: Identifying the Extent of Body Dissatisfaction in 1972.**

306 It is clear that in 1972, many men and women were dissatisfied with aspects of their appearance,  
307 particularly aspects of their appearance that change notably as one gains weight. Consistent with much  
308 other research, women were more likely to be dissatisfied than men, but many men were also dissatisfied.  
309 The number of people who were significantly dissatisfied, however, was relatively low. A total of 23% of  
310 the women, and 15% of the men, indicated any dissatisfaction with *overall* body appearance, and 50% of  
311 women and 35% of men reported some dissatisfaction with their weight. It is unclear how this compares

312 to current levels of dissatisfaction. For example, in a sample of 52,677 heterosexual adults, 21% of  
313 women and 11% of men rated their overall body as unattractive, and 63% of women and 52% of men  
314 reported being to some degree self-conscious about their weight (Frederick, Peplau, & Lever, 2006).  
315 These numbers are not directly comparable to the 1972 results, however, because the wording of the  
316 questions and sample recruitment methods differ, and the population of the United States has increased in  
317 body mass across the past 40 years.

318 Consistent with the prestige attached to muscularity and muscle tone (e.g., Frederick, Fessler, &  
319 Haselton, 2005), dissatisfaction with muscle tone was relatively common for both men and women, which  
320 is consistent with modern research (McCreary & Sasse, 2000). For men, this is likely in part because men  
321 perceive that muscularity will make them more intimidating and attractive to women (Frederick et al.,  
322 2007) and because women prefer somewhat muscular men, especially in short-term affairs (Frederick &  
323 Haselton, 2007)

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

330 Given the link between breast size with femininity and penis size with masculinity, the relatively  
331 *low* degree of dissatisfaction with these aspects of the body parts is somewhat surprising. If the sample  
332 can be considered representative, these findings suggest that the popular press and the psychiatric  
333 literature of the 1970s had overemphasized the importance of these body parts for American men and  
334 women. These findings for women contrast with those of Forbes and Frederick (2008), who found that

335 61% of college women desired larger breasts whereas only 14% desired smaller breasts, and that 25%  
336 were often to always dissatisfied with their breast size. Similarly, 70% of women in a broad sample of  
337 adults indicated some degree of dissatisfaction with their current breast size or droopiness (Frederick,  
338 Peplau, & Lever, 2008). It is possible that more similar results would have been found had the 1972 study  
339 asked about self-ideal discrepancies in size and shape of breasts instead of asking only about satisfaction  
340 with breasts.

341 Similarly, the findings for men contrast with those of Lever, Frederick, & Peplau (2006), who  
342 found that 45% of adult men desired a larger penis (and 0.2% desired a smaller penis), and those of  
343 Tiggemann, Martins, and Churchett (2008), who found that 68% of adult men desired a larger penis (and  
344 1.6% desired a smaller penis). In contrast, however, Morisson, Bearden, Ellis, and Harriman (2005)  
345 asked about degree of dissatisfaction rather than desire for larger or smaller penis, and found that only  
346 29% of men were dissatisfied with the length of their non-erect penis, 5% with the length of their erect  
347 penis, 6% with the circumference of their erect penis, and 25% with the circumference of their non-erect  
348 penis. Few studies have been conducted on this topic, however, which is likely due in part to the potential  
349 stigma associated with conducting research on genitalia and sexuality more generally.

350 The findings highlight two additional aspects of the body that are rarely studied in the field of body  
351 image: height and feet. First, 13% of men and women were dissatisfied with their height. The low level  
352 of dissatisfaction is surprising. Taller men and earn higher salaries (Judge & Cable, 2004) and are  
353 perceived as more dominant (Boyson, Pryor, & Butler, 1999). Many people attend to height when  
354 selecting a partner, with people preferring a relationship in which the man is taller than the woman,  
355 although men are somewhat more willing to violate this male-taller norm (Salska, Frederick, Pawlowski,  
356 Laird, & Rudd, 2008). Jacobi and Cash (1994) found that men and women want to be a little over an inch  
357 taller on average. Lever, Frederick, Laird, and Sadeghi-Azar (2007) found that dissatisfaction with height



358 depended strongly on one's height, with shorter than average men and women expressing the most  
 359 dissatisfaction.

360 Finally, a surprisingly large number of women expressed dissatisfaction with their feet (20%), and  
 361 aspect of the body for which there is little research. Fessler et al. (2012) found consistent evidence across  
 362 seven studies that smaller feet in women are rated more attractive, which may partly explain the  
 363 dissatisfaction identified here.

#### 364 **Goal 2: Identifying the Factor Structure and Intercorrelations Among Items**

365 The factor analysis revealed factors that roughly translated into the following categories for men: face,  
 366 upper torso, lower body, midtorso, sex organ, and height. The factors were similar for women: face,  
 367 extremities, lower torso, mid torso, sex organ, breast, and height. These factors suggest that concerns with  
 368 one's body can be separated by different aspects of one's appearance. These factors are, however, fairly  
 369 highly intercorrelated, and a second order factor analysis suggests it may be defensible to create an overall  
 370 body dissatisfaction score from the items on the *Body Parts Satisfaction Scale*.

#### 371 **Goal 3: Examining Links between Dissatisfaction with Whole Body and Aspects of Body.**

372 Some aspects of appearance were more predictive of overall body dissatisfaction than others.  
 373 Dissatisfaction with the mid-torso was a particularly strong predictor for women ( $r = .68$ ), followed by the  
 374 lower torso ( $r = .59$ ), extremities ( $r = .50$ ), and face ( $r = .41$ ). The biggest contributors to body  
 375 dissatisfaction for men went up and down the entire torso, including upper torso ( $r = .61$ ), midtorso ( $r =$   
 376  $.60$ ), and lower body ( $r = .54$ ), with sex organs not far behind ( $r = .47$ ). Many of these aspects are heavily  
 377 influenced by body fat levels and degree of muscle tone, suggesting the primacy of these concerns when  
 378 people evaluate their overall attractiveness, in conjunction with how they feel about their faces.

#### 379 **Goal 4: Establishing the Concurrent Validity of the Scale**

380 The results supported the validity of the scale. People who reported higher levels of body

381 dissatisfaction on the *Body Parts Satisfaction Scale* tended to report greater feelings of dissatisfaction on a  
382 single item measure of dissatisfaction with appearance, higher body masses, greater feelings of  
383 inadequacy, and less comfort interacting with members of the other sex.

#### 384 ***Limitations***

385 While the readership was national in scope, it differed in several respects from a 1970s national  
386 probability sample of adults. The readership was somewhat younger and better educated than was the  
387 general population, and the sample overrepresented students and underrepresented minority groups.  
388 Despite its limitations, however, the sample was much broader than other samples drawn to examine body  
389 image at the time, which were primarily limited to college students (e.g., Berscheid, Dion, Hatfield  
390 [Walster] & Walster, 1971).

391 An additional limitation is the inability to further access the dataset for further statistical analyses,  
392 such as confirmatory statistical analysis. For example, the linear relationship between body mass and  
393 body dissatisfaction was assessed, but it is known that there is a strong curvilinear relationship between  
394 body mass and body dissatisfaction for men: skinny men tend to feel dissatisfied because they lack the  
395 powerful body build that is idealized, fat men tend to feel dissatisfied because body fat is stigmatized, and  
396 men in the normal and overweight categories tend to be most satisfied because they have a more powerful  
397 appearing body type (Frederick, Forbes, Grigorian, & Jarcho, 2007; Frederick, Peplau, & Lever, 2006).

#### 398 **Conclusion**

399 This study provides the first systematic investigation of the factor structure and validity of the  
400 *Body Parts Satisfaction Scale* in a large population of adults. The convergent and predictive validity of  
401 the scale suggests that it is useful for investigating body image dissatisfaction concerns across multiple  
402 aspects of the body, and that it useful to examine dissatisfaction with specific parts of the body via the  
403 individual items, general body areas through subscales identified , and through overall body dissatisfaction

404 with the total scale score.

405           This study provides a look into the body image concerns and their underlying structure forty years  
406 ago. Given that there has never been a nationally representative study of body image concerns, an  
407 examination of the prevalence and structure of body image concerns in the population would be a valuable  
408 next step for the field.

409

410

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