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## Body image in adult women: Associations with health behaviors, quality of life, and functional impairment

Carolyn B Becker<sup>1</sup>, Christina L Verziji<sup>1</sup>, Lisa S Kilpela<sup>2</sup>, Salome A Wilfred<sup>1</sup>, Tiffany Stewart<sup>3</sup>

<sup>1</sup>Trinity University, USA

<sup>2</sup>The University of Texas Health Science Center at San Antonio, USA

<sup>3</sup>Pennington Biomedical Research Center, USA

### Abstract

This study examined body image in adult women along with probable correlates including health behaviors, negative affect, quality of life, and functional impairment. Adult women ( $N = 738$ , age = 25–86 years) completed an online survey assessing these domains. Women across all ages reported similar body image concerns. Negative body image significantly correlated with poorer wellness behaviors, negative affect, quality of life, and functional impairment. The inverse held for positive body image. The majority of correlations remained even when controlling for negative affect. Further research is warranted to investigate nature of the correlational relationships identified in this study.

### Keywords

age; body image; health behavior; quality of life; women's health

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Substantial research indicates that negative body image (BI) is associated with numerous undesirable outcomes in adolescent girls and young adult women, including eating disorders, depression, unhealthy weight control behaviors, smoking, reduced physical activity, and reduced health-related quality of life (QOL) (e.g. Barker and Galambos, 2007; Clark et al., 2005; Neumark-Sztainer et al., 2006; Stice et al., 2000; Wilson et al., 2013). Research also indicates that BI concerns extend beyond the early stages of life for girls/women (e.g. Slevcek and Tiggemann, 2011; Tiggemann, 2004; Webster and Tiggemann, 2003). For instance, in a sample of over 1800 women aged 50+ years, Gagne et al. (2012) found that 71 percent of women reported dissatisfaction with weight.

With regard to BI correlates, the literature on adult woman lags behind that for younger girls/women, despite indications that BI may be more complex later in life secondary to age-related body changes (e.g. menopause and weight gain), increased rates of disease (e.g.

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**Corresponding author:** Carolyn B Becker, Department of Psychology, Trinity University, One Trinity Place, San Antonio, TX 78212-7200, USA. [cbecker@trinity.edu](mailto:cbecker@trinity.edu).

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cancer), and pregnancy (Kilpela et al., 2015). Some research areas, however, are more underrepresented than others. For instance, whereas there is a moderately substantial and growing literature for adult women on the association between BI and aging anxiety, self-objectification, and eating disorders (Kilpela et al., 2015; Slevic and Tiggemann, 2011), relatively few studies have investigated the association between BI and health/wellness behaviors (Kilpela et al., 2015).

More specifically, four studies have investigated BI and smoking behavior in adult women, each of which largely supported a relationship (Ben-Tovim and Walker, 1991; King et al., 2000, 2005; Perkins et al., 2001). Three studies also support an association between exercise motivation and BI (Liechty et al., 2006; Prichard and Tiggemann, 2008; Segar et al., 2006). With regard to functional impairment, Muennig et al. (2008) found that ideal versus actual weight discrepancy better predicted unhealthy days over the past month as compared to body mass index (BMI) in women aged 18–65+years.

For QOL, Mond et al. (2013) examined the association of adult women's BI and QOL in a very large sample ( $N = 5255$ ). Unfortunately, Mond et al. assessed BI using only two questions, which is less than optimal assessment, and the age range only extended to 42 years. Results indicated that mental health QOL, psychosocial functioning, and some aspects of physical health functioning decreased as negative BI increased. More recently, Van Zutven et al. (2015) found that weight/shape concerns correlated with general psychological distress and worsened life satisfaction in women aged 20–44 years. This study assessed BI using a more comprehensive measure of negative BI.

Importantly, none of these studies examined the association of positive BI with QOL and functional impairment. This is a limitation. Although positive BI inversely correlates with negative BI, positive BI is not a mirror image of negative BI, but a separate construct that includes body appreciation, body acceptance, and adaptive appearance investment (Tylka and Wood-Barcalow, 2015). As such, it is important to examine whether positive BI has different relationships with health-related QOL and functional impairment compared to negative BI.

The primary aim of this study was to examine the association of BI in adult women (age=25–86 years) along with potential correlates drawn from two interrelated areas: health behaviors and QOL/functional impairment. For health behaviors, based on Kilpela et al. (2015), this study assessed self-reported consumption of nutrient-dense food, sleep, and exercise. We also investigated whether negative affect accounted for any identified relationships between BI and health behaviors. With regard to QOL, this study investigated four domains of health-related QOL, as well as self-reported functional impairment directly associated with BI concerns. We hypothesized that negative BI would be associated with worse outcomes on all health/wellness outcomes and worse health-related QOL and functional impairment. We hypothesized the inverse for positive BI.

In a recent review regarding prevalence of negative BI in the US adults, Fiske et al. (2014) identified several shortcomings. These limitations included the following: (1) reports of means and standard deviations (SDs) without sample prevalence (i.e. frequencies); (2)

frequent use of single-item measures, which lack psychometric rigor, and/or use of only one BI measure even though BI is multi-dimensional; and (3) lack of sample prevalence across diverse subgroups, such as age and ethnicity. Thus, a secondary aim was to begin to address these limitations by including frequencies, using multiple BI measures, and reporting sample prevalence across different age groups. Frequencies, which are easier to understand than means, are important for (1) documenting the degree to which a problem is normative enough to be considered a potential public health problem and (2) communicating with community stakeholders, including policy makers (Becker, 2017; Fiske et al., 2014). Thus, it is important to begin to document frequencies of participants scoring at different levels of different BI measures.

A final aim was to respond to increasing recognition (Becker, 2017; Brownell and Roberto, 2015) that standard academic approaches to asking questions and presenting results (e.g., means, correlations) appear insufficient for engaging clinicians and stakeholders in translating research to meaningful day-to-day clinical impact. Becker called for increased reporting of statistics that can be used to convey scientific findings in easy-to-understand or “digestible” formats that facilitate better communication with stakeholders about both the nature of the problems clinical researchers study and interventions effects. Thus, we sought to provide digestible information about the self-reported functional impact of negative BI that may help non-researchers understand and communicate regarding the suffering that negative BI can cause.

## Methods

### Participants

Participants included 738 women recruited via snowball sampling with a mean BMI of 25.43 ( $SD = 6.31$ ). Participants ages ranged from 25 to 86 ( $M = 41.17$ ,  $SD = 12.58$ ) years. Regarding race/ethnicity, 89.3 percent endorsed Caucasian, 8.8 percent Hispanic, 2.4 percent Asian, 2.3 percent Black, 2.0 percent American Indian/Alaska native, and 3.4 percent endorsed multiple races. The sample was highly educated with 84.6 percent reporting at least a bachelor’s degree.

### Procedure

The study received Institutional Review Board’s approval. The study team recruited women of 25 years or older with recruitment scripts distributed via personal and professional networks through email, social networking sites (e.g. Facebook), and word of mouth. We also recruited via social media pages dedicated to women’s fitness, BI, and wellness (e.g. Black Fitness Women). All communications requested that women forward the invitation to their own networks.

The study was described as exploring adult women’s attitudes and feelings about their bodies in relation to health and wellness. After providing informed consent, 774 participants completed self-report questionnaires online. Upon completion, participants could provide email addresses to enter a lottery for a US\$200 Amazon gift card. We removed 36

participants from analyses due to (1) identified age below 25 years ( $n = 33$ ) or (2) missing age data ( $n = 3$ ).

## Measures

**Demographic information.**—Participants reported age, height, weight, race/ethnicity, and highest level of education. Although gathering participants' height and weight data via self-report is not optimal, due to the survey nature of the study, we were unable to collect these objectively.

**BI.**—Because BI is a multi-dimensional construct, we operationalized BI using three measures. The Body Shape Questionnaire (BSQ; Cooper et al., 1987) assessed shape/weight concerns. We used an 8-item version (BSQ-8D; Evans and Dolan, 1993) to reduce participant burden. The BSQ uses a 6-point Likert scale (1 = *Never*, 6 = *Always*). Scores are summed; higher scores indicate greater concerns. A sample question is “*have you been so worried about your shape that you have been feeling you ought to diet?*” Research supports the BSQ's reliability and validity (Rosen et al., 1996) and indicates that shortened versions have similar convergent and discriminant validity (Evans and Dolan, 1993). We replaced two questions from BSQ-8D (e.g. *have you imagined cutting off fleshy areas of your body*) with items from the BSQ-8B (e.g. *have you avoided wearing clothes which make you particularly aware of the shape of your body?*) to target less pathological BI concerns. Internal consistency for the modified BSQ-8D sample was excellent (Cronbach's  $\alpha = .92$ ).

We also administered the Body Parts Satisfaction Scale–Revised (BPSS-R; Petrie et al., 2002). BPSS-R uses a 7-point Likert scale (1 = *extremely dissatisfied*, 7 = *extremely satisfied*) and asks participants to rate 14 body parts (e.g. weight, shoulders, and stomach) plus general muscle tone and overall body size/shape. Items are averaged; higher scores indicate greater satisfaction. The BPSS-R differs from other BI measures by focusing on (dissatisfaction with specific body parts versus attitudes/behaviors. Research supports construct and concurrent validity (Petrie et al., 2002); internal consistency with this sample was high ( $\alpha = .92$ ).

The 13-item Body Appreciation Scale (BAS; Avalos et al., 2005) assessed four aspects of positive BI: favorable opinions of one's body, body acceptance despite imperfections, respect for the body by attending to its needs, and protection of the body by rejecting media ideals. Items are rated on a 5-point Likert scale (1 = *never*, 5 = *always*). Sample items include “*my feelings towards my body are positive for the most part.*” Responses are averaged; higher scores indicate greater body appreciation. Research supports BAS psychometric properties (Avalos et al., 2005), which evidenced excellent internal consistency in this sample ( $\alpha = .95$ ).

**Wellness behaviors.**—The 19-item Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989) assesses past-month self-reported sleep. The PSQI includes seven component sleep scores: quality, latency, duration, efficiency, disturbances, use of sleep medication, and daytime dysfunction. A global score is computed by summing the seven scores; lower scores indicate better sleep. The PSQI has demonstrated internal consistency and reliability ( $\alpha = .83$ ; Buysse et al., 1989). We found good internal consistency ( $\alpha = .83$ ).

The International Physical Activity Questionnaire–Short Form (IPAQ-SF; Patterson, 2002) assesses physical activity over the past 7 days. The IPAQ-SF measures days and duration of walking, moderate physical activity, vigorous physical activity, and sitting. Continuous MET (METs are multiples of the resting metabolic rate) scores are calculated for the three activity subscales by multiplying the appropriate MET number by duration per day and days per week. A total score is computed by summing MET walking, moderate, and vigorous. IPAQ-SF reliability is acceptable (Craig et al., 2003).

The 8-item Physical Activity Enjoyment Scale (PACES; Mullen et al., 2011) assessed positive affect associated with physical activity (e.g. “*when I am physically active I find it pleasurable*”). Items are rated on a 5-point Likert scale (1 = *Disagree a lot*, 5 = *Agree a lot*). Scores are summed; higher scores indicate greater physical activity enjoyment. Internal consistency in this sample was high ( $\alpha = .96$ ).

Two items measured self-reported consumption of fruits, vegetables, and nutrient-dense foods. Item-1 asked how often participants consciously tried to increase nutrient density in meals over the past week. Item-2 asked how often participants ate fresh fruits and vegetables over the past week. Items were rated on a 5-point Likert scale (1 = *consume at every meal*, 5 = *never*). We summed individual items; higher scores indicate less attempts to eat nutritionally dense foods.

**Negative affect.**—We used 17 items comprising the fear, guilt, and sadness subscales of the Positive and Negative Affect Schedule Expanded (PANAS; Watson and Clark, 1999; Watson et al., 1988) to assess negative affect. Items are rated on a 5-point Likert scale (1 = *very slightly or not at all*, 5 = *extremely*) to measure negative affect over the past 3 weeks. Higher total score indicates greater experience of negative emotions. Research supports construct validity (Watson and Clark, 1999), with high internal consistency with the current sample ( $\alpha = .97$ ).

**QOL and engagement in key life activities.**—The 26-item short version of the World Health Organization Quality of Life Scale (WHOQOL-BREF; Skevington et al., 2004) measures overall QOL within four domains over the last 4 weeks: physical health (e.g. activities of living), psychological health (e.g. self-esteem), social relationships (e.g. social support), and environment (e.g. financial resources) using a 5-point Likert scale. Subscales are summed for a raw score, which is transformed by subtracting the lowest possible raw score from the actual raw score and dividing by possible raw score range. This score is then multiplied by 100 to obtain a final score; higher scores indicate better QOL. Research supports the internal consistency of the subscales (Skevington et al., 2004). Internal consistency in this sample was good ( $\alpha$ : physical health = .81, psychological = .89, environment = .82, social relationships = .76).

The 16-item Clinical Impairment Assessment Questionnaire (CIAQ; Bohn et al., 2008) assesses impairment in four domains of life (mood/self-perception, cognitive functioning, interpersonal functioning, and work performance) secondary to eating, exercise, and weight and shape concerns over the past 28 days (e.g. “*over the past 28 days, to what extent have your eating habits, exercising, or feelings about your eating, shape or weight stopped you*”).

from going out with others?"). Items are rated on a 4-point Likert scale (1 = *not at all*, 4 = *a lot*) and are summed; higher scores indicate greater impairment. We excluded eating and exercise from the question stem to focus on shape/weight concerns (i.e. "... *to what extent have your feelings about your shape and weight*"). Research supports CIAQ internal consistency and construct validity (Bohn et al., 2008). The modified version demonstrated high internal consistency ( $\alpha = .96$ ).

## Results

Because our sample consisted of a wide age range, we divided participants into four groups, consistent with past research (Becker et al., 2013). We created groups with the following considerations: (1) ages that clustered in terms of life stages and (2) a manageable number of groups with reasonably large sample sizes. We consulted the lifespan literature (Levinson, 1985) and a life-span developmental psychologist in creating the groups. Groups were as follows: 25–30 years; 31–45 years; 46–60 years; and 61 years and older. Analyses of variance (ANOVAs) indicated that BMI differed across groups ( $F(3, 665) = 6.49, p = .0001, \eta_p^2 = .028$ ). Post hoc analyses indicated that the youngest group reported a lower mean BMI ( $M = 23.83$ ) than other groups ( $M$  range = 25.56–26.83), which did not differ from one another. Thus, we co-varied for BMI in subsequent age group analyses.

### BI across age groups

Four univariate analyses of covariance (ANCOVAs) for BMI indicated that age groups significantly differed on mean BAS ( $F(3, 664) = 8.45, p = .0001, \eta_p^2 = .037$ ) but not BPSS-R ( $F(3, 664) = 1.53, p = .205, \eta_p^2 = .007$ ) or BSQ scores ( $F(3, 664) = 1.06, p = .366, \eta_p^2 = .005$ ) (Table 1). Follow-up paired  $t$ -tests indicated that the oldest group showed greater body appreciation (BAS) compared to each of the other groups; the younger three groups did not differ from one another.

Responding to Fiske et al.'s (2014) call for sample prevalences for BI using multiple measures in different groups, we categorized BI concerns for each measure. We utilized existing short-form cutoffs to create BSQ categories (no concern =  $<19$ , mild concern = 19–25; moderate concern = 26–33; marked concern =  $>33$ ; <http://www.psych.org/tools/bsq/>; Table 1). Approximately 50 percent of the total sample reported moderate or marked BI concerns, and this held for all groups with a slight decrease for the oldest group.

We could not identify established cutoffs for the BPSS-R or the BAS. Consistent with Mond et al. (2013), we used the actual item labels (e.g. extremely dissatisfied to extremely satisfied) to categorize participants using their average BPSS score. We created five groups: extremely dissatisfied/dissatisfied, somewhat dissatisfied, neutral, somewhat satisfied, and extremely satisfied/satisfied. We collapsed the ends of the 7-point scale for two reasons. First, few participants scored in the extreme ranges. Second, the other two measures yielded four and five groups; thus, a five-group breakdown for the BPSS-R makes it easier to compare across measures. We took a similar approach for the BAS such that participants whose average indicated that they "always" appreciated their body were placed in the "always" category and likewise for "often," "sometimes," "seldom," and "never" (see Table

1). For the BPSS-R, approximately 25 percent of the sample reported being at least somewhat dissatisfied with their bodies. On the flip side, 40 percent or more of the total sample and each age group reported being at least somewhat satisfied. For the BAS, a similar pattern emerged. Whereas 14 percent of the total sample (7%–15% among the age groups) reported seldom or never engaging in body appreciation, 52 percent of the total sample (46%–73% in the age groups) endorsed often or always engaging in body appreciation.

### **Association between BI and indices of health and functioning**

As noted above, the oldest age group differed from the younger three groups on the BAS (i.e. 17% of pairwise comparisons), but no other differences emerged. To simplify analyses, we collapsed age groups for subsequent correlational analyses. Of note, exploratory correlational analyses were largely the same for the oldest group as compared to the overall sample, thus supporting the decision to collapse groups.

Correlations indicated that the three BI measures were highly correlated (absolute value  $r$  range = .710 to .774; all  $ps < .0001$ ). Consistent with hypotheses, results indicated that increased BSQ scores correlated with worse scores on all health/wellness variables except physical activity level (Table 2). An identical pattern emerged for body dissatisfaction, although because of the BPSS-R scoring direction, actual correlations are inverse compared to the BSQ. Also consistent with hypotheses, the BAS was inversely correlated with worse scores on all health/wellness variables with the exception of physical activity.

Because there is a well-recognized bi-directional relationship between negative BI and negative affect in younger women (Stice et al., 2000; Wertheim et al., 2001), we conducted partial correlations controlling for negative affect (Table 2). Results indicated that all correlations remained significant for the BPSS-R and BAS. For the BSQ, the correlations with sleep, impairment in functioning, physical health, and psychological health QOL remained significant. These results suggest that the association of BI with health and wellness variables, health-related QOL, and functional impairment is not merely due to negative affect.

### **Functional impairment and distress frequencies**

To provide easy-to-understand statistics about the self-reported functional impact of negative BI, we report frequencies for specific types of functional impact secondary to BI concerns using the CIAQ, which directly targets the functional outcomes of BI concerns. Because the BSQ targets weight/shape concerns, which best matches CIAQ language, and because the BSQ has established cutoffs, we used the BSQ instead of the BPSS-R or BAS to categorize participants.

Before running frequencies, we confirmed that overall CIAQ scores differed between BSQ groups controlling for negative affect ( $F(3, 733) = 101.88, p = .0001, \eta_p^2 = .294$ ). Next, we explored which CIAQ items differed significantly between groups controlling for negative affect. Results indicated that all items differed across groups at  $p < .005$ . Thus, we concluded it was reasonable to provide descriptive statistics for individual items with the

aim of providing a more digestible picture of self-reported BI-related functional impairment that could be used to communicate with stakeholders (see Table 3).

## Discussion

To date, limited research has explored the association between BI and health-related correlates in adult women (Kilpela et al., 2015). Significant limitations also exist in the basic literature aimed at documenting BI in adult women, and much of what exists is not easy for potential stakeholders to understand. This study sought to begin to address these areas.

With respect to prevalence of women's BI concerns across the lifespan, results suggest few age differences. We found no BSQ or BPSS-R differences between age cohorts. Furthermore, only the oldest cohort (61+ years) reported a significant difference with respect to positive BI, despite the fact that this same group reported the highest level (i.e. almost 10%) of extreme body dissatisfaction. This seemingly contradictory finding is actually consistent with past research and may indicate that even as women continue to feel dissatisfied with their bodies, they are able to increasingly appreciate and respect their bodies with aging (Tiggemann and McCourt, 2013). Overall, however, adult women at different stages in life report relatively similar BI concerns.

With respect to sample prevalence of positive and negative BI, approximately 50 percent of participants reported at least moderate shape/weight concerns (BSQ). In contrast, only a quarter reported being at least somewhat dissatisfied with their bodies (BPSS-R), and less than 20 percent scored low on body appreciation (BAS). These results highlight the importance of assessing BI with multiple measures. Although measures correlated highly, when results were translated into a format that is (1) more common in public health (i.e. sample prevalence; Fiske et al., 2014) and (2) more useful for communicating with stakeholders (Becker, 2017), the degree to which different validated measures assess different aspects of BI became clear. Researchers have long known that BI is a multifactorial construct. Thus, women may respond differently to a measure investigating feelings and behaviors related to BI (e.g. feeling fat when naked or pinching body to assess fat) versus a measure asks how satisfied they are with specific body parts. Furthermore, measures of body parts satisfaction typically view all body parts as being equal, and sum or average responses across body parts. However, some women might deeply hate one or two areas and experience significant distress and associated behaviors while reporting high satisfaction with other body parts. In this case, an affective/behavioral measure may better capture negative BI compared to a body parts satisfaction measure. In summary, further research needs to identify best practices with regard to sample prevalence of negative and positive BI.

As hypothesized, negative BI significantly correlated with self-reported worsened sleep, decreased consumption of nutrient-dense foods, less physical activity enjoyment, increased negative affect, increased functional impairment, and lowered QOL. We found the inverse for positive BI. Thus, results for positive BI simply mirrored those for negative BI and did not change results. Future research should tease out when the addition of positive BI measures help tell a more nuanced picture and when they do not.



Even after controlling for negative affect, all correlations remained for the BAS and BPSS-R, and half remained for the BSQ. Because this study is correlational, we do not know whether BI has a causal relationship with the other variables explored. For instance, it is likely that additional variables not included in this study play a role in worsening multiple dimensions of BI and QOL. This highlights why we need more research. Furthermore, we need to understand when variables have a bi-directional or even more complex relationship. For instance, lack of sleep may worsen appearance (Sundelin et al., 2013), which may increase negative BI, which in turn may worsen negative affect, which could worsen sleep. In summary, results suggest that further research is needed to understand adult women's BI and the variables examined in this study.

Although the correlational nature of the study severely limits ability to propose causal relationships, one measure (i.e. CIAQ) directly asked participants to report to what degree shape/weight concerns caused daily-life impairment. Results indicated that those who reported moderate/marked BI concerns reported frequently experiencing the following problems as a result of their shape/weight concerns, feeling critical about themselves (67%), upset (43%), ashamed (41%), guilty (43%), worry (41%), and failure (33%). Additionally, 24 percent reported interference with doing things formerly enjoyed and 22 percent interference with relationships. These results suggest that BI concerns result in significant negative outcomes for many adult women who experience them and that increased research is needed to determine the best way to address BI in adult women.

There are various limitations in this study. First, we used a convenience snowball sample. Second, due to the online survey, we utilized only self-report measures. Additionally, use of the Internet may have resulted in a selection bias. For instance, this sample skewed toward a higher socioeconomic status (SES) than is representative of community samples; it also skewed more homogeneous and White/Caucasian than the overall population for the United States (<https://www.census.gov/quickfacts/table/PST045216/00>). Future research should utilize more inclusive sampling methodologies and alternative measures, including structured interviews.

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**Table 1.**

Means, standard deviations, and frequencies of shape/weight concerns, body satisfaction, and body appreciation by age.

<b>Shape and weight concerns (BSQ)</b>		<b>None (%)</b>	<b>Mild (%)</b>	<b>Moderate (%)</b>	<b>Marked (%)</b>
	<i>M (SD)</i>				
Total sample	26.87 (9.75)	20.3	28.6	23.3	27.8
25–30	26.41 (9.98)	23.4	26.0	25.0	25.5
31–45	26.76 (10.03)	21.8	28	22.5	27.7
46–60	27.91 (9.10)	13.3	31.3	24.1	31.3
61+	25.53 (9.61)	25.8	30.6	19.4	24.2
<b>Body dissatisfaction (BPSS-R)</b>		<b>Extremely satisfied/satisfied (%)</b>	<b>Neutral (%)</b>	<b>Somewhat dissatisfied (%)</b>	<b>Extremely dissatisfied/dissatisfied (%)</b>
	<i>M (SD)</i>				
Total sample	4.29 (1.11)	17.5	30.2	21.7	4.6
25–30	4.30 (1.16)	19.3	27.1	24	5.2
31–45	4.27 (1.11)	15.9	29.4	28.7	5.9
46–60	4.27 (1.09)	16.4	34.4	22.6	2.6
61+	4.45 (1.03)	22.6	30.6	19.4	9.7
<b>Body appreciation (BAS)</b>		<b>Always (%)</b>	<b>Sometimes (%)</b>	<b>Seldom (%)</b>	<b>Never (%)</b>
	<i>M (SD)</i>				
Total sample	3.48 (0.84)	11.4	34.4	11.8	1.8
25–30	3.37 <sup>a</sup> (0.86)	8.9	38.5	12	3.1
31–45	3.44 <sup>a</sup> (0.84)	10.4	32.9	14.2	1.7
46–60	3.52 <sup>a</sup> (0.78)	10.8	37.4	9.7	1.0
61+	3.86 <sup>b</sup> (0.83)	25.8	19.4	6.5	0.0

BSQ: Body Shape Questionnaire; BPSS-R: Body Parts Satisfaction Scale-Revised; BAS: Body Appreciation Scale; SD: standard deviation.

Subgroupings with different superscript differ significantly at  $p < .02$ . Subgroupings with the same superscripts did not differ. Higher scores indicate higher body satisfaction for BPSS-R and BAS, whereas lower scores indicate better body image on BSQ. Total  $N = 738$ ; age = 25–30 years,  $n = 192$ ; age = 31–45 years,  $n = 289$ ; age = 45–60 years,  $n = 195$ ; age = 61+ years,  $n = 62$ . Frequency scores on the left side of the table represent better body image relative to the right.

**Table 2.**

Correlations between body image and indices of wellness/health and functioning.

	Total sample				Controlling for negative affect			
	BSQ	BPSS-R	BAS	BAS	BSQ	BPSS-R	BAS	BAS
Measures for which higher scores = increased dysfunction								
PSQI	.316***	-.337***	-.341***	.154***	-.170***	-.159***		
Nutrition	.179***	-.284***	-.299***	.072	-.200***	-.186***		
Negative affect	.520***	-.547***	-.619***					
Impairment in functioning	.688***	-.630***	-.746***	.513***	-.389***	-.526***		
Measures for which higher scores = decreased dysfunction								
Total exercise	.024	.057	.043	.027	.077*	.050		
Enjoy; physical active	-.191***	.349***	.341***	-.053	.253***	.217***		
Physical health QOL	-.363***	.497***	.469***	-.089*	.280***	.198***		
Psychological QOL	-.544***	.639***	.749***	.256***	.398***	.534***		
Environment QOL	-.314***	.420***	.424***	-.004	1.52***	.112**		
Relationship QOL	-.301***	.420***	.408***	-.047	.205***	.179***		

BSQ: Body Shape Questionnaire; BPSS-R: Body Parts Satisfaction Scale-Revised; BAS: Body Appreciation Scale; QOL: quality of life.

BSQ—higher scores indicate greater body shape/weight concerns; BAS and BPSS-R—higher scores indicate greater body appreciation/satisfaction.

\*  $p < .05$ ;

\*\*  $p < .01$ ;

\*\*\*  $p < .001$ .

**Table 3.**

Frequencies of responses to individual items on the CIAQ by BSQ groups.

	Shape and weight concern	Not at all (%)	A little (%)	Quite a bit or a lot (%)
Made it difficult to concentrate	None/mild	88	11	1
Made you feel critical of yourself	Moderate/marked	52	34	14
Stopped you going out with others	None/mild	31	58	11
Affected your work performance	Moderate/marked	3	30	67
Made you forgetful	None/mild	93	6	1
Affected your ability to make everyday decisions	Moderate/marked	62	24	14
Interfered with meals with family/friends	None/mild	96	3	1
Made you feel ashamed	Moderate/marked	81	12	7
Made you feel guilty	None/mild	96	4	0
Interfered with doing things you used to enjoy	Moderate/marked	75	17	8
Made you absent minded	None/mild	96	3	1
Made you feel a failure	Moderate/marked	74	15	11
Made you feel upset	None/mild	89	10	2
Made you feel critical of yourself	Moderate/marked	60	22	17
Made you feel ashamed	None/mild	61	37	2
Made it difficult to eat out with others	Moderate/marked	17	40	43
Made you feel guilty	None/mild	74	24	2
Interfered with doing things you used to enjoy	Moderate/marked	20	39	41
Made you absent minded	None/mild	93	6	1
Made you feel a failure	Moderate/marked	63	19	18
Made you feel upset	None/mild	70	26	4
Made you feel critical of yourself	Moderate/marked	20	37	43
Made you feel a failure	None/mild	91	8	1
Made you feel upset	Moderate/marked	52	24	24
Made you feel a failure	None/mild	97	3	0
Made you feel upset	Moderate/marked	76	15	9
Made you feel a failure	None/mild	88	10	2

**Over the past 28 days, to what extent have your feelings about your shape or weight ...**

	Shape and weight concern	Not at all (%)	A little (%)	Quite a bit or a lot (%)
Interfered with your relationships with others	Moderate/marked	36	30	33
	None/mild	88	11	1
Made you worry	Moderate/marked	49	29	22
	None/mild	69	28	3
	Moderate/marked	24	35	41

CIAQ: Clinical Impairment Assessment Questionnaire; BSQ: Body Shape Questionnaire.

BSQ groups collapsed from 4 (none, mild, moderate, marked) to 2 (none to mild, moderate to marked); ratings of “quite a bit” and “a lot” collapsed to one ranking.