Development and Validation of the Body Concealment Scale for Scleroderma (BCSS)

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ABSTRACT

Objectives: Body concealment is a component of social avoidance among people with visible differences from disfiguring conditions, including systemic sclerosis (SSc). The study objective was to develop a measure of body concealment related to avoidance behaviors in SSc.

Methods: Initial items for the Body Concealment Scale for Scleroderma (BCSS) were selected using item analysis in a development sample of 93 American SSc patients. The factor structure of the BCSS was evaluated in 742 Canadian patients with one-factor, two-factor, and bifactor confirmatory factor analysis models. Convergent and divergent validity were assessed by comparing the BCSS total score with the Brief-Satisfaction with Appearance Scale (Brief-SWAP) and measures of depressive symptoms and pain.

Results: A two-factor model (CFI=0.99, TLI=0.98, RMSEA=0.08) fit substantially better than a one-factor model (CFI=0.95, TLI=0.94, RMSEA=0.15) for the 9-item BCSS, but the Concealment with Clothing and Concealment of Hands factors were highly correlated (0.79). The bifactor model (CFI=0.99, TLI=0.99, RMSEA=0.08) also fit well. In the bifactor model, the omega coefficient was high for the general factor (ω=0.80), but low for the Concealment with Clothing (ω=0.01) and Concealment of Hands (ω=0.33) factors. The BCSS total score correlated more strongly with the Brief-SWAP Social Discomfort (r=0.59) and Dissatisfaction with Appearance (r=0.53) subscales than with measures of depressive symptoms and pain.

Conclusion: The BCSS sum score is a valid indicator of body concealment in SSc that extends the concepts of body concealment and avoidance beyond the realms of body shape and weight to concerns of individuals with visible differences from SSc.

Significance and Innovation:

- Social avoidance behaviors due to body image concerns are common in people with visible differences from disfiguring medical illnesses, such as scleroderma (systemic sclerosis; SSc).
- Skin problems and appearance changes to the hands may be central to body avoidance behaviors, such as concealment, in SSc.
- The Body Concealment Scale for Scleroderma (BCSS) is a brief, valid measure to assess body concealment in SSc that extends the concept of body concealment and body image avoidance to visible differences due to a rheumatic condition.
- The creation of the BCSS will benefit researchers and clinicians looking to develop and evaluate interventions to support people living with SSc.

Systemic sclerosis (SSc) or scleroderma, is a rare chronic autoimmune connective tissue disease that affects organs including the skin, lungs, gastrointestinal tract, and kidneys. SSc often alters physical appearance in visible and socially relevant body parts, including the face, mouth, neck, and hands (1-3). Treatments can mitigate the impact of some symptoms, but do not alleviate manifestations of irreversible tissue damage that affect appearance.

Concerns about appearance are particularly salient among people with visible differences from injury or illness (4,5). Many people with acquired disfigurement from injury or illness have difficulty achieving healthy social interactions, and some experience negative interpersonal relations due to their different appearance (6-9). Many appearance changes common in SSc, such as changes in skin pigmentation, telangiectasias (visible dilation of blood vessels beneath skin), hand contractures, and altered facial features, are distinct from appearance changes in other medical conditions. Visual manifestations of SSc are associated with greater body image dissatisfaction and social discomfort, poorer appearance self-esteem, more depressive symptoms, and reduced overall psychosocial functioning (10-15).

Appearance concerns among individuals with visible differences can lead to fear of negative evaluation and social anxiety (5), which, in turn, can lead to behaviors aimed at concealing visible differences or avoiding social situations where attention may be given to physical appearance (5,16-20). Body image avoidance generally refers to avoidance behaviors associated with negative body image, such as avoiding looking at one's own body, avoiding being looked at by others, avoiding body image-related media, or concealing the body (17). Concealment behaviors may take a variety of forms, including the use of clothing to hide certain body parts (21); however, in SSc, appearance changes to the hands or face are difficult to conceal via clothing. This may have significant implications for people with SSc, since joint contractures,

digital ulcers, loss of digits, changes in pigmentation, calcinosis, and Raynaud's Phenomenon are common manifestations affecting these body parts (3).

Body image-related concealment has not been studied in SSc, and there are no measures assessing concealment behaviors that reflect disease-specific appearance changes. The Body Image Avoidance Questionnaire (BIAQ) (17) includes several items related to concealment with clothing, but it focuses on concealment of weight, shape, or size and has no subscale that assesses concealment specifically. The five-item Body Concealment subscale of the Body Image Behavior Scale (22) is based on items from the BIAQ (17) and the Attention to Body Shape Scale (23), but it is not validated, and its items similarly focus on general concealment, but not strategies associated with disfiguring conditions. More general measures of distress related to physical appearance, such as the Derriford Appearance Scale (24,25), include items that reflect attempts at concealment, but these items do not generate a single score that reflects concealment behaviors.

Given the significance of concealment as a coping strategy among people with visible differences, including the popularity of clothing, make-up, and accessories as concealment methods (21), it is important to be able to accurately measure appearance-related concealment. Some concealment behaviors in SSc may be similar to behaviors common to other visible differences. The distinctive physical appearance changes (e.g., telangiectasias, skin hardening and tightening, unique facial changes, hand involvement) in SSc, however, make it essential to assess concealment behaviors in a manner that reflects the experience of individuals with the disease. Concealment of the hands, for instance, may be a behavior particularly common in SSc, but less so in other conditions.

The objective of this study was to develop and validate the Body Concealment Scale for Scleroderma (BCSS). First, in a development sample, we conducted preliminary testing of items from the BIAQ potentially relevant to body image concerns in SSc, as well as original items developed to reflect concealment behaviors in SSc. Second, in a larger validation sample, we assessed the BCSS factor structure and convergent and divergent validity. We hypothesized that the BCSS would correlate strongly with other measures of body image distress, moderately with measures of depressive symptoms, and to a lesser degree with a measure of pain.

PATIENTS AND METHODS

Development and Validation Samples

Development Sample. The development sample consisted of patients diagnosed with SSc based on American College of Rheumatology criteria (26) who were undergoing treatment at the Johns Hopkins Scleroderma Center, were enrolled in a longitudinal study examining psychosocial adjustment to SSc, and completed all items of a preliminary version of the BCSS. Items under consideration for inclusion in the BCSS were initially generated by two psychologists and were then reviewed by three experts in body image research. Subsequently, the revised items were reviewed by two rheumatologists and a nurse with expertise in SSc. Items were administered to SSc patients between August 2004 and January 2005. The study was approved by the Johns Hopkins University School of Medicine Internal Review Board, and informed consent was obtained from all participants.

Validation Sample. The validation sample consisted of SSc patients enrolled in the Canadian Scleroderma Research Group's (CSRG's) multi-center Registry who completed the BCSS between July 2008 and May 2013 with fewer than three items missing. Registry patients must have a diagnosis of SSc from a Registry rheumatologist, be $\geq$18 years of age, and be fluent

in English or French. Only patients who completed the BCSS in English were included in the present study. Over 98% of patients in the Registry meet the 2013 ACR/EULAR classification criteria for SSc (27,28). The CSRG Registry was approved by the Research Ethics Office of McGill University. All patients provided informed consent.

In both the development and validation samples, some patients completed study measures more than once, but only data from the first administration were analyzed.

Measures

Disease-related Characteristics. Disease duration was measured in years since onset of the first non-Raynaud's Phenomenon disease symptoms. Limited SSc was defined as skin involvement distal to the elbows and knees only, whereas diffuse SSc was defined as skin involvement proximal to the elbows and knees, and/or the trunk (26).

The Body Concealment Scale for Scleroderma (BCSS). The preliminary version of the BCSS administered to the development sample was comprised of 13 items, including three items from the BIAQ (17) and 10 newly developed items that reflected SSc-specific body concealment behaviors. Items retained from the BIAQ included three of nine items on the BIAQ Clothing factor: *I wear clothes I do not like*; *I avoid wearing revealing clothes (e.g., bathing suits, tank tops, shorts);* and *I wear clothes that will divert attention from my appearance ("appearance" changed from "weight" in the original BIAQ).* All other BIAQ items were unrelated to concealment. Ten newly developed SSc-specific concealment-related items included: *I wear long sleeves to hide skin changes*; *I wear clothes that hide the changes to my skin; I wear gloves to hide my hands; I wear make-up to hide skin discoloration; I avoid shaking hands with people; I get regular manicures; I wear high-necked shirts; I hide my hands so that people don't see them; I consider having plastic or reconstructive surgery;* and *I avoid directly giving change or*

other items to people. Analogous to the BIAQ, BCSS item response categories are scored on a 0-5 scale and reflect frequency of current behaviors (*never, rarely, sometimes, often, usually, always).*

The Brief-Satisfaction with Appearance Scale (Brief-SWAP). The six-item Brief-SWAP (29), which was adapted from the original 14-item SWAP (30), assesses dissatisfaction with appearance and social discomfort related to visible differences from SSc. Items are scored on a seven-point scale ranging from 0 (*strongly disagree)* to 6 (*strongly agree*) and are summed to create subscale scores (Dissatisfaction with Appearance and Social Discomfort). Higher scores indicate greater dissatisfaction or social discomfort. In a study of 654 CSRG Registry patients (29), internal consistency reliability was good for both subscales (α=0.81 for both). In the present study, α=0.80 in the validation sample for both subscales. The Brief-SWAP subscales were used to assess convergent validity, with each subscale hypothesized to correlate strongly with the BCSS total score (i.e., $r \geq 0.50$), and with the Social Discomfort subscale hypothesized to correlate more strongly than the Dissatisfaction with Appearance subscale.

Center for Epidemiologic Studies Depression Scale (CES-D). The 20-item CES-D assesses frequency of depressive symptoms during the past week on a 0-3 scale (*rarely, none of the time, most of the time, all of the time*). The CES-D had good internal consistency reliability (α=0.87) and convergent validity with related self-report measures among 470 CSRG Registry patients (31) and good internal consistency reliability (α=0.79) in the present validation sample. The CES-D was included as a measure of divergent validity and to assess the degree to which the BCSS specifically measures body image-related distress versus general psychological distress as reflected by CES-D scores. It was hypothesized to have a moderate correlation (i.e., $0.30 \leq r < 0.50$) with the BCSS total score.

Patient Health Questionnaire-9 (PHQ-9). The nine-item PHQ-9 assesses frequency of depressive symptoms over the past two weeks on a 0-3 scale (*not at all* to *nearly every day).* The PHQ-9 had good internal consistency reliability (α=0.87) and convergent validity in a study of 566 CSRG Registry patients (32) and good internal consistency reliability (α=0.88) in the present validation sample. As with the CES-D, the PHQ-9 was used to assess the degree to which the BCSS specifically measures body image distress versus more general psychological distress, with a moderate correlation (i.e., $0.30 \leq r < 0.50$) hypothesized.

McGill Pain Questionnaire (MPQ). The MPQ (33) includes 15 descriptors that reflect sensory (11 items) and affective (4 items) pain, with higher scores reflecting greater pain. Each descriptor is ranked on a four-point intensity scale (0-3; *none* to *severe*), and total scores range from 0-45. The MPQ has been used extensively in various populations and has excellent psychometric properties (33), including good internal consistency reliability (α=0.92) in the present validation sample. The MPQ was used to examine divergent validity and was hypothesized to have a relatively low correlation (i.e., $r < 0.30$) with BCSS total score because patients with worse disease may experience greater pain and body image distress; however, it is likely that this relationship will be less robust compared to self-report measures of body image and depressive symptoms.

Data Analysis

Preliminary Assessment of BCSS Items in the Development Sample. Preliminary item analysis was conducted with the initial 13-item version of the BCSS to determine items to be administered in the CSRG Registry validation sample. Items from the preliminary version were administered in the validation sample if the corrected item-total correlations (i.e., correlations of each item with the total from all other items) were $\geq$0.40 and if removal did not substantively

reduce internal consistency reliability (34). Items were examined and removed iteratively, one at a time, beginning with the items with the lowest item-total correlations.

Assessment of the Factor Structure of the BCSS in the Validation Sample. Confirmatory factor analysis (CFA) was conducted with Mplus 7 (35) in the validation sample, and three alternative models of the factor structure were tested: a single-factor model, a two-factor model (consistent with expected concealment strategies related to Concealment of Hands and Concealment with Clothing), and a bifactor model.

Bifactor models evaluate the degree to which covariance among a set of item responses can be accounted for by a single general factor that reflects common variance among all scale items, as well as specific factors reflecting additional common variance among clusters of items with similar content (36-38). The bifactor model can provide a useful alternative to standard correlated factor models for assessing aspects of multidimensionality and can be useful for providing possible explanations when there is not clarity about dimensionality. The bifactor model can also be useful for evaluating whether a unit-weighted composite score for a single latent trait can be reasonably interpreted, versus creating subscales, in the context of identifiable multidimensionality (36-38).

In the bifactor model, the general factor represents the broad overarching construct that is being measured, and the group factors represent more narrowly defined subdomains (36). In the case of the BCSS, the general factor represented the use of strategies to conceal disfiguring aspects of appearance. The subdomains reflected the more specific subscales, represented by the two proposed factors, Concealment of Hands and Concealment with Clothing (36). In the bifactor model, all items were specified to load on the general factor plus their designated specific factor (Concealment of Hands or Concealment with Clothing), and the general and

specific factors were specified to be orthogonal. In order to assess the contribution of the general factor and the specific factors to explaining item covariance, we calculated explained common variance (ECV), which is the ratio of variance explained by the general factor divided by variance explained by the general plus the specific factors (36). In addition, coefficient omega was generated for the full scale BCSS, which is a model-based reliability estimate analogous to coefficient alpha. Coefficient omega hierarchical was also calculated for the general factor and the two specific factors, in order to evaluate the degree to which the subscales reflected reliable variance beyond variance captured by the general factor (36).

For all models, item responses for the BCSS were modeled as ordinal Likert data in Mplus, using the weighted least squares estimator with a diagonal weight matrix and robust standard errors and a mean- and variance-adjusted chi-square statistic with delta parameterization (35). A full information maximum likelihood (FIML) procedure was used to estimate models that included patients with missing data. Modification indices were used in attempt to identify pairs of items within scales for which model fit would improve if error estimates were freed to covary and for which there appeared to be theoretically justifiable shared method effects (e.g., similar wording) (39). A chi-square goodness-of-fit test and three fit indices were used to assess model fit, including the Tucker-Lewis Index (TLI) (40), the Comparative Fit Index (CFI) (41), and the Root Mean Square Error of Approximation (RMSEA) (42). Since the chi-square test is highly sensitive to sample size and can lead to the rejection of well-fitting models, practical fit indices were emphasized (43). Models with a TLI and CFI close to 0.95 or higher, and RMSEA close to 0.06 or lower are representative of good fitting models (44). A CFI of 0.90 or above (45) and a RMSEA of 0.08 or less (46) may also be considered to represent reasonably acceptable model fit.

Assessment of the Reliability and Validity of the BCSS in the Validation Sample. Cronbach's alpha was computed for the BCSS total score to measure internal consistency reliability. Convergent and divergent validity were assessed by calculating Pearson's bivariate correlations with 95% confidence intervals of the BCSS total summed score and the summed scores of the items on the two proposed factors with the Brief-SWAP subscale scores, and CES-D, PHQ-9, and MPQ total scores. These analyses were conducted using SPSS, Version 20.

RESULTS

Sample Characteristics

As shown in Table 1, in the development sample, 93 patients had complete data on all initial BCSS items and were included in analyses. Eleven patients who were missing one to three items were not included in analyses. The majority of patients were women (90%), White (85%), and had limited SSc (76%). Mean age was 54.8 years (SD=11.6).

There were 742 English-speaking patients in the CSRG validation sample included in analyses (730 with no missing items on the BCSS and 12 with one missing item). Three patients were excluded because they were missing more than three items. The majority of patients were women (88%), White (88%), and had limited SSc (71%). Mean age was 56.9 years (SD=11.9). See Table 1.

Preliminary Item Analysis

Four of the original 13 BCSS items had corrected item-total correlations <0.40 and were not administered in the CSRG validation sample as their removal did not negatively affect internal consistency reliability. These excluded items were: (1) *I get regular manicures,* (r=-0.03), (2) *I consider having plastic or reconstructive surgery* (r=0.12), (3) *I wear high-necked shirts* (r=0.24), and (4) *I wear make-up to hide skin discoloration* (r=0.33). This left nine items

with corrected item-total correlations ≥0.40 for possible inclusion in the final version of the BCSS (α=0.79).

Assessment of the Factor Structure of the BCSS

Model fit for the single-factor CFA was good based on the CFI and TLI, but less than ideal based on the RMSEA ($\chi^2(27)$=503.96, CFI=0.95, TLI=0.94, RMSEA=0.15). The two-factor model, consisting of items assigned based on content to either a Concealment of Hands or Concealment with Clothing subscale fit well ($\chi^2(26)$=156.63, CFI=0.99, TLI=0.98, RMSEA=0.08). The correlation between the Concealment with Clothing and Concealment of Hands latent factors was 0.79.

Model fit was also strong for the bifactor model, ($\chi^2(19)$=106.99, CFI=0.99, TLI=0.99, RMSEA=0.08). Coefficient omega was 0.88, and coefficient omega hierarchical for the general factor was 0.80. The coefficient omega was lower for the Concealment of Hands (ω=0.33) and negligible for the Concealment of Clothing (ω=0.01) factors. No item error estimates were freed to covary in any models. Factor loadings, parameter estimates, and item statistics for all models are shown in Table 2.

Assessment of the Reliability and Validity of the BCSS Total Score

Cronbach's alpha for the BCSS total score was 0.88. All convergent and divergent validity correlations were consistent with hypotheses. Specifically, the BCSS total score and the Concealment with Clothing and Concealment of Hands subscale scores correlated strongly with the Social Discomfort subscale of the Brief-SWAP, moderately to strongly with the Brief-SWAP Dissatisfaction with Appearance subscale, moderately with the PHQ-9 and CES-D, and somewhat less with the MPQ. See Table 3.

DISCUSSION

In the present study, we found that a single-factor model of the 9-item BCSS fit well based on the CFI and TLI fit indices, but not based on the RMSEA. A two-factor model, which specified Concealment with Clothing and Concealment of Hands factors, provided a better fit to the data. However, the correlation between the two factors was high (0.79). Consistent with this, convergent and divergent validity correlations with other measures were similar for the BCSS total score and the two subscale scores.

The bifactor model can be useful in contexts where multidimensionality is identified, but when it is not clear whether a multidimensional framework adds meaningfully to a single score approach. When the omega coefficient for the general factor is high, a single summed score can be interpreted as reflecting a single common source, even when data are multidimensional (36). Analysis with the bifactor model in our context identified a strong general factor that explained a large proportion of item covariance. Reliability indices calculated for the specific Concealment with Clothing and Concealment of Hands factors, on the other hand, were very low, suggesting that their interpretation as reliable indictors of unique constructs would be extremely limited and that little reliable variance exists beyond that explained by the general factor (36). The presence of identifiable multidimensionality alone does not necessitate the creation and scoring of subscales or substantively hinder the interpretability of a single unit-weighted composite score when the general factor accounts for a large proportion of item covariance, but the specific factors do not. Thus, the totality of the evidence from the present study supports the use and interpretation of a single summed score for the BCSS.

Results from this study build upon pre-existing measures that assess behaviors related to body image distress and self-consciousness (24,25), body image avoidance among individuals with weight concerns (17), and more general body image concealment issues (22), to provide a

mechanism to assess body concealment related to avoidance among individuals with visible difference due to SSc. This addresses an important gap in the study of body image concerns related to acquired disfigurement from medical illnesses like SSc and will be useful in assessing programs designed to address body image concerns in this patient group. Social interaction skills training programs (47,48) and cognitive behavioral therapy (CBT) (19) have been recommended as strategies to reduce avoidance behaviors and body image distress among individuals with visible differences. These interventions focus on teaching techniques that allow people with a visibly different appearance to effectively anticipate and manage the reactions of others and to increase their own confidence and self-esteem in social settings, as well on helping these individuals re-evaluate the importance of appearance for their self worth (9). A review of interventions for individuals with visible differences (49) found some evidence in support of social interaction skills training and CBT, although there remains a lack of strong evidence for any one particular therapeutic intervention (9). Furthermore, none of these types of interventions have been tested in patients with visible differences resulting from SSc and none address the particular concealment behaviors relevant to the disease, such as those related to hiding of the hands or covering up the skin. The development of the BCSS is a first step toward better assessment of body image avoidance behaviors through the mechanism of concealment in SSc. Future research is needed regarding interventions that address such avoidance behaviors as a result of anxiety related to appearance changes in SSc, and currently, the Scleroderma Patient-centered Intervention Network (SPIN) is developing an online intervention for this purpose (50).

There are limitations that should be considered when interpreting results from this study. First, both the development and validation samples were convenience samples of SSc patients receiving treatment at either the Johns Hopkins Scleroderma Center or from centers involved in

the CSRG Registry, and results may depart to some degree from what might be found in a community setting and for different SSc patient groups, given the fact that our study was conducted with cases from such specialty centers. Second, items for the BCSS were generated by a group of experts in body image research, but did not include patients with SSc; therefore, no direct feedback was given on the items from people living with the disease. While it would have been preferable to involve SSc patients in the development of BCSS items, as a first step, the approach taken was able to demonstrate that the items generated worked well. Third, female and male participants were combined in the current study, and it is possible that there are differences between sexes in terms of the manifestations of body concealment behaviors. However, there were too few men in the study to test separate factor structures by sex. Finally, the majority of our sample (88%) was White, and as such, our results may not be representative of the experience of body concealment among individuals from different racial backgrounds.

In sum, body concealment related to avoidance is a significant issue for individuals with visible differences. Prior to this study, there were no validated measures of body concealment behaviors and no measures that address the unique appearance changes central to SSc, such as disfigurement of the hands and skin. The present study involved the development and validation of a brief, disease-specific measure to assess specific concealment behaviors relevant to SSc, the BCSS. Results from this study highlight body concealment as an important mechanism of avoidance for people with SSc and provide evidence for the validity of the BCSS.

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Table 1. Sociodemographic and Disease Variables for Scleroderma Patients in Development and Validation Samples

Sociodemographic Variables	**Johns Hopkins (Development) Sample**	**Canadian Scleroderma Research Group (Validation Sample)**
	N = 93	**N = 742**
Age (*mean, SD)*	54.8 (11.6)[a]	56.9 (11.9)
Female *(n, %)*	82 (90%)[b]	650 (88%)
White *(n, %)*	77 (85%)[b]	649 (88%)
Greater than High School Education (*n, %)*	63 (68%)	380 (51%)[c]
Employed *(n, %)*	42 (46%)[d]	295 (40%)[e]
Married or Living as Married *(n, %)*	64 (69%)	443 (60%)
Disease Variables:		
Diffuse Scleroderma *(n, %)*	22 (24%)	195 (28%)[f]
Disease Duration in Years (*mean, SD)*	12.5 (8.1)[g]	12.9 (9.4)[h]

[a]N= 83; [b]N= 91; [c]N=741; [d]N= 92; [e]N=738; [f]N=693; [g]N=73; [h]N=732

Table 2. Confirmatory Factor Analysis Models and Parameter Estimates for BCSS[a] (N=742)

		Single-Factor Model	Two-Factor Model		Bifactor Model			
Item	**Mean (SD)**	**Factor Loadings**	**Factor Loadings – Clothing[b,c]**	**Factor Loadings – Hands[b,c]**	**Factor Loadings[d] – General**	**Factor Loadings[d] – Clothing[c]**	**Factor Loadings[d] – Hands[c]**	**θ**
1. I wear clothes I do not like	0.45 (0.90)	0.67	0.70		0.77	-0.34		0.53
2. I wear long sleeves to hide skin changes	0.73 (1.26)	0.84	0.84		0.83	0.14		0.54
3. I avoid wearing revealing clothes (e.g., bathing suits, tank tops, or shorts)	1.60 (1.86)	0.82	0.82		0.79	0.23		0.57
4. I wear clothes that hide the changes to my skin	1.01 (1.48)	0.95	0.95		0.92	0.36		0.38
5. I wear clothes that will divert attention from my appearance	0.67 (1.24)	0.83	0.86		0.87	0.05		0.49
6. I wear gloves to hide my hands	0.50 (1.08)	0.73		0.75	0.50		0.57	0.65
7. I avoid shaking hands with people	0.80 (1.40)	0.79		0.85	0.69		0.47	0.55
8. I hide my hands so that	0.90	0.82		0.82	0.65		0.62	0.43

people don't see them	(1.40)						
9. I avoid directly giving change or other items to people	0.52 (1.15)	0.83		0.89	0.73	0.48	0.49

[a]BCSS responses are scored on a six-point scale ranging from 0-5 (0=never, 1=rarely, 2=sometimes, 3=often, 4=usually, 5=always). [b]Correlation between factors=0.79. [c]Clothing=Concealment with Clothing factor; Hands=Concealment of Hands factor. [d]Factor loadings are unstandardized, raw factor loadings. θ=Square root of the error variance; Sum of error variances=6.55; ECV (explained common variance)=0.79; coefficient ω (omega)=0.88; coefficient $\omega_{H\text{-}GEN}$ (omega hierarchical – general=0.80; $\omega_{H\text{-}Clothing}$=0.01; $\omega_{H\text{-}Hands}$=0.33; PUC (percent of contaminated correlations)=56%.

Table 3. Correlations and 95% Confidence Intervals of Summed BCSS Score and Summed Subscale Scores with Other Patient-reported Outcome Measures

Measure	BCSS Total	Concealment with Clothing Subscale	Concealment of Hands Subscale
Brief-Satisfaction with Appearance: Social Discomfort Subscale	0.59 (0.54-0.63)	0.50 (0.44-0.55)	0.57 (0.52-0.61)
Brief-Satisfaction with Appearance: Dissatisfaction with Appearance Subscale	0.53 (0.48-0.58)	0.49 (0.44-0.55)	0.47 (0.41-0.53)
Patient Health Questionnaire-9	0.39 (0.32-0.45)	0.36 (0.29-0.42)	0.35 (0.28-0.41)
Center for Epidemiologic Studies Depression Scale	0.39 (0.33-0.45)	0.36 (0.30-0.43)	0.34 (0.27-0.40)
McGill Pain Questionnaire	0.30 (0.22-0.38)	0.26 (0.17-0.34)	0.29 (0.21-0.37)