The Validity of the Satisfaction with Appearance Scale and the Brief Satisfaction with Appearance Scale for Patients With Limited and Diffuse Systemic Sclerosis

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Evidence Based Medicine: Key References


Visible Differences in Systemic Sclerosis (SSc)

• Disfigurement in highly visible and socially relevant areas of the body
  - Face, hands, forearms, feet
• Body image distress is common
• Associations with psychological distress and social isolation

Measurement of Body Image Distress in SSc

• The 14-item Satisfaction With Appearance Scale (SWAP)
• The 6-item Brief Satisfaction With Appearance Scale (Brief-SWAP)
  - Both yield factor-analytically derived subscales
  - Both have been adapted for and validated in SSc
  - Factor structures have never been compared for use with patients with limited versus diffuse SSc
    - Don’t know if subscales differ

Limited versus Diffuse SSc

• Shown to differ on functioning and psychosocial outcomes
  - Self-reported physical and mental health
  - Impact of physical symptoms
  - Health-related quality of life
  - Global and functional ability
  - Appearance-related self-esteem

Disclosures

• Khanna: Pulmonary Hypertension Association, Scleroderma Foundation, 5, Actelion, Gilead, Baye, DIGNA, Roche, BMS, United Therapeutics, 8
• Furst: Abbott, Actelion, Amgen, BMS, Janssen, Gilead, GSK, NIH, Novartis, Pfizer, Roche/Genentech, UCB, 2, 5, 8
• All other authors have no conflicts of interest to disclose
### Objective

To determine the comparability of the subscales of the SWAP and the Brief-SWAP for patients with limited versus diffuse SSc

### Participants

- Patients with limited ($n = 101$) or diffuse ($n = 82$) SSc
- Part of the University of California Los Angeles (UCLA) Scleroderma Quality of Life Study
- Recruited during pre-scheduled medical appointments at the UCLA Medical Center
- Informed consent and Health Insurance Portability and Accountability Act (HIPAA) forms
- Eligibility:
  - At least 18 years old
  - Diagnosed with SSc, as confirmed by a study physician

### Sample Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Limited ($n = 101$)</th>
<th>Diffuse ($n = 82$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>54.59 (16.11)</td>
<td>47.56 (14.15)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13 (12.9)</td>
<td>18 (22.0)</td>
</tr>
<tr>
<td>Female</td>
<td>88 (87.1)</td>
<td>64 (78.0)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>82 (81.2)</td>
<td>51 (62.2)</td>
</tr>
<tr>
<td>Not white</td>
<td>19 (18.8)</td>
<td>31 (37.8)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ High School</td>
<td>19 (18.8)</td>
<td>14 (17.1)</td>
</tr>
<tr>
<td>&gt; High School</td>
<td>80 (78.2)</td>
<td>68 (82.9)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>59 (58.4)</td>
<td>47 (57.3)</td>
</tr>
<tr>
<td>Not married</td>
<td>42 (40.6)</td>
<td>35 (42.7)</td>
</tr>
</tbody>
</table>

*Mean (Standard Deviation); n (%)*

### The SWAP

- Satisfaction With Appearance Scale (SWAP)
  - 14 items
  - 7-point scale
    - 1 = strongly disagree to 7 = strongly agree
  - Higher scores indicate greater body image distress
  - 4 subscales:
    - Social Distress (3 items)
    - Facial Features (4 items)
    - Non-facial features (4 items)
    - Perceived Social Impact (3 items)

Heinberg et al., 2007; Lawrence et al., 1998

### The Brief-SWAP

- Brief-Satisfaction with Appearance Scale (Brief-SWAP)
  - 6-item short form of the SWAP
  - Response scale and scoring are the same as the SWAP
  - 2 subscales:
    - Social Discomfort (3 items)
    - Dissatisfaction with Appearance (3 items)

Jewett et al., 2010

### Multiple-group confirmatory factor analysis (CFA)

- Do we get the same number of subscales with the same items on them?
  - Configural invariance
- In addition, do the items form the subscales in the same way/at the same level?
  - Metric invariance
- In addition, is the spread of responses on a given subscale, and the way that the subscales relate to each other, the same?
  - Factor variance/covariance invariance
How these questions were answered

- Descriptive (CFI, SRMR, RMSEA) indicators of model fit
  - CFI: ≥ .90
  - RMSEA and SRMR: ≤ .08

- Statistical (Satorra-Bentler Chi Squared [S-By^2]) indicator of model fit
  - S-By^2 difference tests compared models

Multiple Group CFA Results: Brief-SWAP

<table>
<thead>
<tr>
<th>Reference Model</th>
<th>S-By^2</th>
<th>df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>Reference Model #</th>
<th>χ^2</th>
<th>df</th>
<th>p</th>
<th>Model Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Configural</td>
<td>145.563</td>
<td>142</td>
<td>.983</td>
<td>.049</td>
<td>.053</td>
<td>2</td>
<td>143</td>
<td>71</td>
<td>.001</td>
<td>The factor variance/covariance invariance model fit the data best</td>
</tr>
<tr>
<td>2. Metric</td>
<td>223.409</td>
<td>162</td>
<td>.949</td>
<td>.064</td>
<td>.068</td>
<td>1</td>
<td>140</td>
<td>51</td>
<td>.080</td>
<td></td>
</tr>
<tr>
<td>3. Factor</td>
<td>228.591</td>
<td>172</td>
<td>.953</td>
<td>.068</td>
<td>.077</td>
<td>2</td>
<td>140</td>
<td>30</td>
<td>.069</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions and Implications

- Support was found for the SWAP’s four subscales and for the Brief-SWAP’s two subscales
- Brief-SWAP for quick assessments
- SWAP for more detailed information
- Cross-group comparisons possible
Limitations and Future Directions

- Limitations
  - Administered only 14-item SWAP
  - Cultural considerations
- Future directions
  - Use either/both

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- Colleagues and co-authors
- Project staff
- Participants

Additional References


Questions?