Validation of the Michigan Hand Outcomes Questionnaire (MHQ) in Systemic Sclerosis (SSc)

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Abstract

Rationale:

To examine the test-retest reliability and the concurrent validity of the MHQ in SSc patients.

- Hand involvement is universal in SSc
- Hand impairment is a key factor of functional status
- Hand specific hand function outcome measures do exist (e.g. Hand Mobility in Scleroderma Test, Arthritis Hand Function Test) but require training and special equipment
- A need exists for an easy to use hand specific function outcome measure in SSc
- The MHQ is a self-administered hand specific function outcome measure which has been validated across several disabilities and disease groups

Methods and Patients:

Ambulatory SSc patients completed the MHQ along with SF-36 and SHAQ. 32 subjects underwent repeated testing (2 week interval) to assess test-retest reliability. MHQ responses were compared with detailed clinical measurements of SSc.

Results:

94 SSc patients were studied, including 47 with limited and 47 with diffuse SSc. 81 (86%) were female. Mean age was 51 y ± 12 and disease duration 7y ± 7. Test-retest reliability for MHQ was .84 (Spearman correlation), which ranged from .61 for aesthetic to .86 for ADL subscales. Internal consistency including overall MHQ and each subscale was >.80 except for a .62 correlation with aesthetic scale. Both limited and diffuse groups had similar internal consistency scores.

Conclusions:

The MHQ has test-retest reliability and good internal consistency in a large sample of SSc patients. MHQ has construct validity for SSc because its function and pain domains correlated with similar domains in SHAQ and the SF-36. The non-significant low correlation between the MHQ and the SF-36 mental scale is sensible, while the low correlation between the MHQ aesthetic domain and other functional domains adds to the construct validity of the aesthetic domain, which is often overlooked. The MHQ is a promising outcome tool for SSc and its responsiveness will be tested in clinical trials.

Methods

Subjects:

- 94 patients with diagnosis of SSc by ACR classification criteria
- Patient characteristics:
  - 47 patients with limited and 47 with diffuse SSc
  - Age: 51 y ± 12
  - Gender: 81 (86%) females
  - Duration of Disease: 7y ± 7

Test-Retest:

- 32 patients completed repeated testing of the MHQ in a 2-week interval (similar in characteristics to the total group)

Construct Validity:

Subjects’s Correlations between the MHQ, SHAQ and subscales of SF-36

<table>
<thead>
<tr>
<th>Subscale</th>
<th>MHQ</th>
<th>SHAQ</th>
<th>SF-36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>.81</td>
<td>.79</td>
<td>.71</td>
</tr>
<tr>
<td>Work</td>
<td>.70</td>
<td>.69</td>
<td>.62</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>.67</td>
<td>.65</td>
<td>.54</td>
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</tbody>
</table>

Conclusions

- The MHQ has shown reliability and validity in this study of SSc patients.
- The MHQ shows promise as a measure of hand function in SSc patients.
- A major advantage of the MHQ is its ease of administration (patient self-report).
- The MHQ includes a measure of satisfaction with aesthetics which is often overlooked in SSc research. The results in this study show this to be a separate domain.
- Further studies are needed to test its responsiveness to measure change.

References