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

Rationale:
Hand involvement is a universal feature of systemic sclerosis (SSc) and hand impairment is a key determinant of functional status in SSc. Validated outcome measures that are practical for SSc are lacking. The MHQ is a 37-item hand-specific outcomes questionnaire with 6 subscales: overall hand function, activities of daily living (ADL), pain, work performance, aesthetics, and patient satisfaction with hand function. The MHQ has been validated in rheumatoid arthritis (RA) and has face and content validity for application in SSc.

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 7 y ± 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 all scored >.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 outcomes 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: 7 y ± 7

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

Results

Test-Retest:

Subjective Correlations between SF-36, SHAQ, and subscales of SF-36

Construct Validity:

- MHQ function domains show significant correlations with similar domains in SHAQ and SF-36
- MHQ pain domain showed significant correlation with similar domain in SF-36
- MHQ overall and subscales have no correlation with SF-36 Mental
- MHQ Aesthetics has very low correlation with function domains

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