The Multiple Sclerosis Self-Management Scale: Clinimetric Testing

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Background
- Self-management is the ability to manage everyday life with the physical & psychosocial changes inherent with a chronic condition.
- Effective self-management in MS has been shown to be related to:
  - higher self-efficacy
  - improved psychological health
- Multiple Sclerosis Self-Management Scale (MSSM) is the first tool to evaluate self-management among individuals with MS. It has
  - good internal consistency (α = 0.85) &
  - construct validity of MSSM has been demonstrated; however, other clinimetric properties have not been established.

Objective
1. To evaluate the MSSM for criterion validity & face validity.
2. To evaluate the MSSM for test-retest reliability.

Method
Participants eligibility criteria are: 19 years and older; speak and write in English; have a confirmed diagnosis of MS; and have no other serious medical conditions such as cancer, arthritis and diabetics.

Time 1:
- A package is provided to participants that includes the MSSM and 2 measures to test criterion validity. These measures are:
  - Partners in Health (PH-12)
  - Health Education Impact Questionnaire (heiQ).
- Also included in the package is a questionnaire to evaluate face validity...
  - That is in Likert scale format.
  - Asks to rate how well the MSSM reflects their self-management & components related to self-management.
  - Has a comments section & room to list missing items, if needed.
- Analysis is completed using correlational stats. Missing data were substituted with a neutral score (3.5 for heiQ & 3 for the MSSM items).

Time 2:
To determine test-retest reliability, the MSSM will be sent to participants within 2 weeks of completion of the package provided at Time 1. Reminder calls will be made to facilitate return. Analysis will include use of intra-class correlation coefficient.

Results

| Time 1: | 8 individuals with MS met the criteria and participated. Demographic characteristics of participants are presented in Table 1.
| Time 2: | To be completed June-August 2012. |

Table 1: Demographic Information

<table>
<thead>
<tr>
<th>Continuous variables</th>
<th>Range</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27-68</td>
<td>51.5</td>
</tr>
<tr>
<td>Years Since Diagnosis</td>
<td>Range</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td>2-13</td>
<td>6.0</td>
</tr>
<tr>
<td>Categorical variables</td>
<td>n (%)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>6(75)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>2(25)</td>
</tr>
</tbody>
</table>

Marital Status
- Single: 2(25)
- Common law/married: 5(63)
- Separated/Widowed: 1(13)

Education Level
- High school or less: 1(13)
- Trade School or University: 7(88)

Employment Status
- Employed: 3(38)
- Unemployed: 5(63)

Household Income (9monthly)
- Less than $3000: 2(25)
- Between $3000 to $4000: 0(0)
- More than $4000: 4(50)
- Unknown: 2(25)

Type of MS
- Relapsing-remitting: 5(63)
- Primary Progressive: 1(13)
- Secondary Progressive: 2(25)

Table 2: Criterion Validity

<table>
<thead>
<tr>
<th>Scale</th>
<th>r</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH-12</td>
<td>-0.69</td>
<td>0.057</td>
</tr>
<tr>
<td>Skill and Technique Acquisition</td>
<td>0.89</td>
<td>0.003**</td>
</tr>
<tr>
<td>Social Integration and Support</td>
<td>0.88</td>
<td>0.004**</td>
</tr>
<tr>
<td>Health Services Navigation</td>
<td>0.79</td>
<td>0.020*</td>
</tr>
</tbody>
</table>

Table 3: Face validity

<table>
<thead>
<tr>
<th>Items participants indicated as missing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stress reduction strategies (such as meditation, yoga)</td>
</tr>
<tr>
<td>2. Life style choices such as specific diet and exercise</td>
</tr>
<tr>
<td>3. Alternative therapies used by some patient</td>
</tr>
<tr>
<td>4. Add an item related to the injections for Disease Modifying Therapies.</td>
</tr>
</tbody>
</table>

Interpretation:
- Results of the criterion and face validity testing suggests that the MSSM would have enhanced ecological validity by:
  - including items related to life style choices
  - being sensitive to the uniqueness of MS for each person
- There were items in the MSSM that were not applicable to some participants.

Conclusion
- Correlational testing with the MSSM:
  - confirmed criterion validity with 3 out of the 5 subscales in the heiQ.
  - suggests that it is approaching criterion validity with the PH-12.
- Face validity evaluation suggests that for people with MS, the MSSM has:
  - moderate validity
  - life-style self-management related items that are missing

Future research should be directed at further developing this tool or creating a new measure that includes items related to:
- life-style choices (e.g. exercise and diet)
- use of complementary and alternative methods
- stress reduction strategies

Acknowledgement
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References
5. Malcomson, K. S., Low-Strong, A. S., & Dunsmore, L. What can we learn from the personal insights of individuals living and coping with Multiple Sclerosis? Disability and Rehabilitation, 2008; 30(9), 662-674.