Assessing Relapse in Multiple Sclerosis (ARMS) Questionnaire: Pilot Study

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INTRODUCTION

Relapses are a hallmark of multiple sclerosis (MS) and are often associated with increased disability, symptom burden, and healthcare utilization (1, 2). However, these events are difficult to ascertain and only between patients, but also between relapses in the same patient (3—5). Relapses are often too erratic and may be difficult to recognize, particularly for nonhemorrhagic or subtle relapses (6). Thus, tools are needed to correctly identify relapses and to help identify patients with a subclinical relapse component.

METHODS

Patients: Patients were recruited from the MS clinic at the Carolinas Medical Center in the Charlotte area.

Inclusion criteria: Patients 18 years of age or older with a MS diagnosis, who were able to read and understand English, and were willing to participate in the study.

Exclusion criteria: Patients with a history of a psychiatric disorder, a history of alcohol or drug abuse, a history of learning disability, or a history of significant medical comorbidity that could interfere with the completion of the study.

Design: A prospective, self-report assessment tool that was developed by a panel of expert MS nurses. It consists of 7 questions to evaluate treatment effectiveness.

Procedure: Part 1 of the ARMS questionnaire was administered at the initial assessment. It consists of 7 questions to evaluate treatment effectiveness.

Data analysis: – Demographic and baseline characteristics were summarized using descriptive statistics. – Response to each item in Part 1 and 2 of the ARMS questionnaire was evaluated using descriptive statistics. Responses to items in Part 2 of the ARMS questionnaire (relapse treatment) and ADL and RSH scales analyzed differences between treatment groups using the t-test. – Patient’s self-reported data were analyzed using the McNemar test.

RESULTS

Part 1—Assessment of New Relapse

– A total of 103 patients were enrolled and all completed the study (Table 1).

Table 1. Demographics and Characteristics of Current Relapse

<table>
<thead>
<tr>
<th>Score type</th>
<th>Score range</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCS</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>PCS</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
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<tr>
<td>ADL</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
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<tr>
<td>RSH</td>
<td>0–100</td>
<td>50 (15)</td>
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Part 2—After relapse treatment

– The change in the TCS was also computed and summarized.

Table 2. Scores for Total and Partial Composite Scores, Activities of Daily Living (ADL) and Relapse Symptoms (RSH)

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<tr>
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<tr>
<td>Total composite score</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Part 1 composite score (PCS)</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
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<tr>
<td>Part 2 composite score (RSH)</td>
<td>0–100</td>
<td>50 (15)</td>
<td>50</td>
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Part 3—Follow-up

– The TCS was computed for all patients who had a relapse and a relapse treatment.

Table 3. Summary of Changes in Total Composite Score (TCS), Part 1 Composite Score (PCS), and Part 2 Composite Score (RSH)

<table>
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CONCLUSIONS

- The ARMS questionnaire is a useful tool for monitoring relapse in MS patients.
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ACKNOWLEDGMENTS

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- 7. Amy Perrin Rose, APN, MSN, CNRN, MSN; John Newcomer, Pharmac; Nicole Motschel, PhD

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