Development and Validation of the MS Resiliency Scale
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Introduction
Resiliency is a common pattern of adjustment, in which the individual is able to keep a relatively healthy and stable level of psychological and physical functioning after a traumatic experience [1-2]. For some individuals, having a major medical diagnosis such as multiple sclerosis (MS) may be a traumatic experience. Within MS and other chronic illness literature, factors such as hope, adaptive coping styles, physical activity, social support, and emotional awareness have been associated with resiliency [2-7].

While there have been measures of resiliency developed, few focus on chronic illness and none are MS-specific.

This study aimed to develop and validate the MS Resiliency Scale (MSRS), a multidimensional measure of resiliency. By pinpointing the factors associated with resiliency in MS, the MSRS could be used to identify patients who are at increased risk of becoming distressed and may benefit from psychological interventions.

Methods
Seventy-five items for the MSRS were generated from the resiliency and MS adjustment literatures that were anticipated to be related to MS-specific resiliency. Five subscales were hypothesized: Hopefulness and Optimism, Physical Well-Being, Cognitive Processes, Emotional Management, and Support System.

Participants (N = 1038) were individuals with MS who were recruited through the North American Research Committee on MS (NARCOMS) who completed the survey online: 106 participants were removed from the analyses due to missing data. The majority of respondents were women (n = 766) with relapsing remitting MS (n = 577) in middle adulthood (M = 56.35 yrs ± SD = 9.55).

Principal components analysis was run to determine construct validity. The (non-MS specific) Resiliency Scale and Hospital Anxiety and Depression Scale (HADS) were used to establish convergent and divergent validity.

| Subscale 1 | .915 | .835 | I can deal with the stress related to my MS |
| Subscale 2 | .793 | .728 | Thinking about my MS makes me feel like I am falling apart |
| Subscale 3 | .823 | .711 | Thinking about the future makes me feel depressed |
| Subscale 4 | .797 | .704 | Having MS makes me feel hopeless |
| Subscale 5 | .822 | .571 | I feel I have control over my life |

Table 1: Reliability (internal consistency) and component loadings for the 25-item MSRS

Results
Using an unforced solution with oblique (promax) rotation and Kaiser normalization, and suppressing items with coefficients below 0.4, 25 items were retained in five subscales that accounted for 42.75% of the variance.

Each subscale had high reliability, and the subscales were weakly to moderately and significantly correlated with each other, with the exception of Spirituality and Physical Well-Being subscales, which were nearly significant (r = .061, p = .068).

The total score was positively correlated with the Resiliency Scale (r = .632, p < .001), and negatively correlated with HADS Depression (r = -.721, p < .001) and Anxiety (r = -.559, p < .001).

Discussion
Although not exactly as originally hypothesized from the general literature, the subscales that emerged strongly supported the construct validity of the MSRS.

The 25-item MSRS enables clinicians to assess multiple domains associated with adjustment in MS in a brief measure. In addition to quantifying overall adjustment, they can focus on one particular area, which may help target where their patients need additional intervention and support.

References
1. Bonanno GA. Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? American Psychologist. 2004; 59: 20-28

Results (Cont.)

<table>
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<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>1. Emotional and Cognitive Strategies</td>
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<td>190***</td>
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<td>165***</td>
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<td>2. Physical Well-Being</td>
<td>.153***</td>
<td>106***</td>
<td>165***</td>
<td>165***</td>
<td>150***</td>
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<td>3. Information Seeking</td>
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<td>.399***</td>
<td>.326**</td>
<td>.639***</td>
<td>.639***</td>
</tr>
</tbody>
</table>

Table 2: Correlations between MSRS total and subscale scores

** p < .01
*** p < .001

Acknowledgements
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