DEVELOPMENT AND VALIDATION OF A MENINGIOMA-SPECIFIC QUALITY OF LIFE QUESTIONNAIRE

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The authors do not have any financial or organizational relationships with commercial interests or other entities. We certify that to the best of our knowledge, no aspect of our current personal or professional circumstances places me in the position of having a conflict of interest with my duties, responsibilities and exercise of independent judgment as an Officer Member of the Board of Directors, Nominee for Office, Educational Presenter and/or a representative of AANS/NREF/NPA.
INTRODUCTION

BACKGROUND
- Meningioma patients report impaired health-related quality of life (HRQOL) even after treatment
- Lack of meningioma-specific patient reported outcome measures (PROM)
- Presently, generic questionnaires are utilized (e.g. FACT-Br, SF-36, EQ-5D)
  - Limited in ability to capture nuanced changes related specifically to disease

STUDY OBJECTIVE
- Develop and validate a meningioma-specific quality of life questionnaire, utilizing a patient-centered methodology
METHODS

ITEM GENERATION
- Semi-structured interviews
- Preliminary list items generated

ITEM REDUCTION
- Clinical Impact Method
- Statistical-Analytical Item Reduction

VALIDATION
- Test-Retest Reliability (2-4 week gap)
- Concurrent Validity
- Extreme-Group Validity
## RESULTS

### Item Generation
- Interviews with patients (n = 30), caregivers (n = 12), HCPs (n = 8)
- Preliminary list of 187 items

### Item Reduction
- Domains: Symptoms, Vitality, Cognition, Family, Social well-being, Emotional well-being, Anxiety, Functional well-being, Physical Appearance
- Items reduced to 70 items in 9 domains

### Validation and Feasibility
- Moderate to strong correlation demonstrated between MQoL, FACT-Br, and SF-36
- MQoL takes 11 minutes on average to complete
# RESULTS: Test-retest Pearson’s Correlation Coefficients

<table>
<thead>
<tr>
<th>MQoL Domains</th>
<th>Pearson’s correlation coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>0.79</td>
</tr>
<tr>
<td>Vitality</td>
<td>0.49</td>
</tr>
<tr>
<td>Cognition</td>
<td>0.64</td>
</tr>
<tr>
<td>Family</td>
<td>0.79</td>
</tr>
<tr>
<td>Social well-being</td>
<td>0.59</td>
</tr>
<tr>
<td>Emotional well-being</td>
<td>0.62</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.79</td>
</tr>
<tr>
<td>Functional well-being</td>
<td>0.74</td>
</tr>
<tr>
<td>Physical well-being</td>
<td>0.52</td>
</tr>
<tr>
<td>Overall</td>
<td>0.75</td>
</tr>
</tbody>
</table>
### RESULTS: Correlations Between MQoL and SF-36, FACT-Br, EQ-5D

<table>
<thead>
<tr>
<th>MQoL Domains</th>
<th>Corresponding domains (SF-36, FACT-Br, EQ-5D)</th>
<th>Pearson’s correlation coefficient</th>
</tr>
</thead>
</table>
| MQoL: Vitality     | SF-36: Vitality  
FACT-Br: Physical well-being  
EQ-5D: Mobility                                                  | 0.58  
0.62  
0.37  |
| MQoL: Functional well-being | SF-36: Physical functioning  
FACT-Br: Functional well-being  
EQ-5D: Usual activities                                  | 0.75  
0.65  
0.57  |
| MQoL: Family       | SF-36: Social functioning  
FACT-Br: Family well-being                                        | 0.58  
0.65  |
| MQoL: Social well-being | SF-36: Social functioning  
FACT-Br: Social well-being                                        | 0.63  
0.71  |
| MQoL: Emotional well-being | SF-36: Mental health  
FACT-Br: Emotional well-being                                       | 0.76  
0.72  |
| MQoL: Anxiety      | SF-36: Mental health  
EQ-5D: Anxiety/Depression                                            | 0.56  
0.21  |
| MQoL: Cognition    | SF-36: Role limitation due to emotional problems                    | 0.55  |
DISCUSSION

- Lack of disease-specific tools in meningioma patients constituted a need for a tool that can capture relevant changes specific to meningioma.

- Patient-centered approach used ensures content validity and relevance to target patient population.

- Developed questionnaire (MQoL) possess items that have been identified by those with lived experience of meningioma, which sets it apart from existing generic tools.

- Specificity of questionnaire ensures sensitivity in detecting changes as a result of meningioma.
SUMMARY POINTS

- Developed MQoL takes 11 minutes to complete on average, and contains 70 questions that comprises of 9 separate domains

- MQoL contains domains specific to meningioma (e.g. symptoms, anxieties, personal appearance)

Limitations
- Greater input from male meningioma patients may be beneficial

- Shorter test-retest period of 1 week can be used to ensure clinically relevant changes not measured during test-retest