Establishing Validity Evidence of the Pittsburgh Impairment Testing Tool (PITT)

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INTRODUCTION

Rehabilitation of individuals with Spina Bifida (SB) aims to preserve ambulation and transfer ability.

The motor level of lesion is inversely associated with ambulatory status and are thus useful in an individual's rehabilitation.

Manual muscle testing (MMT) is supported as the best method of evaluating and establishing the extent of motor impairment.

However, published motor impairment scales vary in their complexity and correlation with ambulation ability.

A practical scale based on clearly defined MMT grades is therefore needed for busy clinic settings and research.

OBJECTIVES

To measure the content validity of the Pittsburgh Impairment Testing Tool (PITT)

The target benchmark was a CVR ≥ 0.8 for each level of lesion and the overall scale.

MATERIALS & METHODS

Development of tool

The scale was developed in prior work using specific muscle strength patterns seen in patients at the UPMC Adult Spina Bifida (SB) Clinic.

Development of survey

A survey was distributed to collect expert feedback for the analysis of content validity through Lawshe's method.

Recruitment of expert panel

Experts with experience in the SB population and an understanding of motor level testing were recruited.

Phase 1

In Phase 1, all experts expressing interest received the survey and a document describing the scale's content validity study.

Phase 2

In Phase 2, the revised survey was re-distributed to all participants.

Data analysis

Data from Phase 2 were used to calculate the content validity ratio (CVR) with critical values recommended by Wilson and colleagues.

RESULTS

Summary of CVR for Phase 2 of PITT study

<table>
<thead>
<tr>
<th>Option</th>
<th>CVR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0.95</td>
</tr>
<tr>
<td>Thoracic</td>
<td>0.9</td>
</tr>
<tr>
<td>Hip Flexor dominant</td>
<td>0.89</td>
</tr>
<tr>
<td>Knee extensor...</td>
<td>0.82</td>
</tr>
<tr>
<td>Overall Scale</td>
<td>0.89</td>
</tr>
</tbody>
</table>

The target benchmark of CVR ≥ 0.8 for each impairment level and the overall scale was exceeded.

CONCLUSIONS

The scale's high content validity originates from the muscle strength patterns it uses to categorize individuals.

Expert feedback revealed ways to improve the scale but also the value in preserving the ease and simplicity of the scale.

Future work should address the tool’s additional psychometric properties with a focus on construct validity to advance the validity of the scale.

REFERENCES

- Wilson FR, Pan WS, Schumsky DA: Recalculating the Critical Values of Lawshe’s Content Validity Ratio. URL: [http://dxdoiorg/101177/0748175612440286](http://dxdoiorg/101177/0748175612440286)

ACKNOWLEDGEMENTS or CONTACT

We would like to thank the experts who participated in this research.