The accuracy of kinesiology-style manual muscle testing (MMT): A proposed testing protocol and results from a pilot study

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Table 1 - Comparison of Practitioner Characteristics Trained and Untrained in MMT

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Practitioners</th>
<th>Trained</th>
<th>Untrained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean # Years in Practice ± SD</td>
<td>20.4 ± 19.0</td>
<td>20.9 ± 11.2</td>
<td>19.4 ± 8.6</td>
</tr>
<tr>
<td>Mean # Years MMT Experience ± SD</td>
<td>14.9 ± 7.3</td>
<td>15.0 ± 7.1</td>
<td>14.9 ± 7.3</td>
</tr>
<tr>
<td>Range of MMT Experience (Years)</td>
<td>7.0-30.0</td>
<td>7.2-30.0</td>
<td>6.8-28.6</td>
</tr>
<tr>
<td>Self-Reported MMT Expertise (0-4) ± SD</td>
<td>3.6 ± 0.5</td>
<td>3.6 ± 0.5</td>
<td>3.6 ± 0.5</td>
</tr>
<tr>
<td>Mean Age (years) ± SD</td>
<td>51.3 ± 6.8</td>
<td>52.3 ± 7.1</td>
<td>49.8 ± 5.3</td>
</tr>
<tr>
<td>Gender (Male Female)</td>
<td>10/2</td>
<td>0/2</td>
<td>10/2</td>
</tr>
<tr>
<td>Practitioners by Profession</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chiropractors</td>
<td>9</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Physiotherapists / Counsellors</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Athletic Trainers</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Mean Overall Accuracy (95% CI)</td>
<td>62.4% (52.6% to 72.2%)</td>
<td>67.7% (57.0% to 78.4%)</td>
<td>51.7% (41.1% to 62.3%)</td>
</tr>
</tbody>
</table>

The Development of MMT

Kinesiology-style MMT
- Muscle Response Testing
- Arm Response Testing

Applied Kinesiology MMT
Goodheart, Walthé

Ortho/Neuro MMT
- Lovett & Martin
- Kendall & Kendall

Methods
- Practitioner immediately performs muscle test
- Consultant immediately records practitioner's outcome as "strong" or "weak"
- Practitioner advances to the next pictures / statement
- Practitioners may at any time:
  - Check polarity
  - Balance
  - Test statements

Results
- Pilot study, possibly underpowered
- Test anxiety in practitioners
- Generalizability to other applications?

Discussion
- Reproducibility of practitioner accuracy
- Reasons for high variance in accuracies
- Investigation of influence of patient bias
- Consensus on MMT terminologies (Delphi)

Suggested Improvements
- Addition of a controlled “guessing” condition
- Use only practitioners formally trained in MMT
- Change primary outcome to % correct when practitioner is only viewing BLANK screens

Limitations
- Addion of a controlled “guessing” condition
- Use only practitioners formally trained in MMT
- Change primary outcome to % correct when practitioner is only viewing BLANK screens

FUTURE RESEARCH
- Reproducibility of practitioner accuracy
- Reasons for high variance in accuracies
- Investigation of influence of patient bias
- Consensus on MMT terminologies (Delphi)