Test-retest reliability of pain location using three different body chart grids

A study on healthy volunteers

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Background: pain drawing in research

‘Does the use of different grids for pain drawing analysis influence the test-retest reliability of pain location?’

Participants
40 (27 women, 13 men)

Pain provocation test
ULNT1 (Butler 2000)

Two digital pain drawings
PD1 and PD2
Overlap analysis with the Jaccard Similarity Coefficient (JSC)
(Jaccard 1908, Barbero et al 2015)

JSC = 12630/12630+492+873 = 0.90
Three body chart grids (G1, G2, G3) for pain location detection

- **G1**: 205,000 pixels
- **G2**: 90 small-anatomic regions
- **G3**: 17 macro-anatomic regions
  
  (Margolis et al 1986)
Automatic overlap analysis: JSC results based on three grids
(Barbero et al 2015)

<table>
<thead>
<tr>
<th>Grid</th>
<th>Median JSC (min ; max)</th>
<th>Friedman test (G1–G2; G2–G3; G1–G3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>0.73 (0.15 ; 0.88)</td>
<td>(H0: δ = 0)</td>
</tr>
<tr>
<td>G2</td>
<td>0.91 (0.50 ; 1.00)</td>
<td>p &lt; 0.0167</td>
</tr>
<tr>
<td>G3</td>
<td>1.00 (0.50 ; 1.00)</td>
<td></td>
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</tbody>
</table>
Conclusions

The use of different grids influences the test-retest reliability of pain location (PL)

The pixel and the macro-anatomic grids are the more and less sensitive, respectively, to PL differences

Despite some difference between PD1 and PD2 the test-retest reliability of PL is high

Choose the most suitable grid based on the aim of the measurement

Thanks for your ‘5 min’ attention!

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