Psychometric properties of patient reported outcomes measures for hip arthroscopy.

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PROs (patient reported outcome measures) are an important tool in evaluating pain and function.

Psychometric properties of commonly used PROs in a hip arthroscopy population have not been well established (Kemp et al 2011, Thorborg et al 2011, Tijssen et al 2011).

**AIM**
To establish the psychometric properties of commonly used patient reported outcome (PRO) measures of hip pain and function for a hip arthroscopy population.
Methodology:

**Reliability**
- Test retest (ICC)
- Minimal detectable change (MDC)

**Validity**
- Construct (convergent and divergent)
- Content validity
- Ability to detect a difference between groups

**Acceptability**
- Floor/ceiling effect

50 hip arthroscopy subjects recruited from a single surgeon
50 healthy controls recruited from the community
Cross-sectional study design
PROs FOR EVALUATION

MHHS Modified Harris Hip Score
HOS Hip outcome score
HOOS Hip osteoarthritis outcome score
HAGOS Copenhagen hip and groin outcome score
IHOT-33 International Hip Outcome Tool

50 hip arthroscopy subjects recruited from a single surgeon
50 healthy controls recruited from the community
Cross-sectional study design
Results: Test – Retest Reliability

All measures demonstrated excellent test – retest reliability (ICC > 0.90)
Results: Minimal Detectable Change (MDC)

All measures demonstrated MDC of less than 20 points out of a maximum of 100 points.
Results: Construct and Content Validity

All measures demonstrated acceptable construct validity when compared to the SF-36 score (p<0.01)

The IHOT-33 had appropriate content validity in a hip arthroscopy population

The HOOS and HAGOS had appropriate content validity in other hip pain populations

The HOS and MHHS did not have acceptable content validity
Results: Validity

Ability to detect a difference between hip scope and controls

All scores were able to detect a difference between healthy people and those post hip arthroscopy for all measures.
Results: Floor and Ceiling effects

No measures had floor effects

The MHHS, HOS and subscales of the HOOS and HAGOS had ceiling effects
# Conclusions: Summary

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Construct Validity</th>
<th>Content Validity</th>
<th>Floor/ceiling effect</th>
<th>Ability to detect a difference ($p&lt;0.05$)</th>
<th>MDC $&lt;20%$</th>
<th>Test/retest reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHHS</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>HOS</td>
<td>+</td>
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<tr>
<td>HOOS</td>
<td>+</td>
<td>+$^o$</td>
<td>+ (not ADL)</td>
<td>+</td>
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<tr>
<td>HAGOS</td>
<td>+</td>
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<td>IHOT-33</td>
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- Negative finding

+ Positive finding

$+ = \text{positive rating (hip arthroscopy population)}$;  
$+^o = \text{positive rating (other population)}$;  
- = negative rating;
Conclusions:

Five commonly used PROs all demonstrate adequate reliability for use in groups, the HOOS, HAGOS & IHOT-33 have acceptable validity; and all have a high ability to detect a difference between groups.

Ceiling effects are present in the MHHS, HOS, one subscale of the HOOS and two subscales of the HAGOS which may limit their usefulness in this population.

The HOOS, HAGOS and IHOT-33 can be recommended for use in a hip arthroscopy population.

In people between 12 and 24 months post hip arthroscopy.
REFERENCES:


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