Assessing Functional Status in Children: A Review of the Childhood HAQ for Non-Arthritis Indications

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Background

INTRODUCTION

Historically, assessment of the health-related quality of life (HRQoL) of children has received considerably less attention than the HRQoL of adults.1

Few pediatric HRQoL instruments have been developed and validated.2

HRQoL instruments used in adults, but not validated in children, typically do not account for important cognitive, physical, emotional and social development issues of children.

Use of adults as proxy may lead to inaccurate assessments of pediatric HRQoL.

Therefore, both generic and disease-specific instruments to measure health-related outcomes in children are needed.

ABOUT THE CHAQ

The Childhood Health Assessment Questionnaire (CHAQ) was developed in 1994 as a parent or well-adult-administered instrument for measuring the functional health status of children with juvenile rheumatoid arthritis.3

The CHAQ was adapted from the Stanford Health Assessment Questionnaire (HAQ) by the Arthritis Health Assessment Group.4

The CHAQ includes both a disability and discomfort index:

• The disability index measures physical functioning, difficulty in performing daily functions, use of special aids and assistance from another person in eight domains. These include dressing, eating, walking, hygiene, reach, grab, and activities.

• The discomfort index is measured by the Pain Visual Analog Scale (VAS) and is a measure of joint pain.

• The CHAQ takes less than 10 minutes to administer.

In contrast to the extensive use of the HAQ in multiple disease populations, the CHAQ has primarily been used in children with arthritic conditions.

Objectives

This study was conducted to systematically examine the use of the CHAQ in measuring functional status of children and young adults with non-arthritic conditions, and to assess the validity of effects observed in clinical trials of drug treatments.

Methods

A computerized literature search conducted in the MEDLINE database (1986-present) identified English-language publications with the term “Childhood Health Assessment Questionnaire.”

Additional searches were conducted to identify the use of the CHAQ in clinical studies of specific juvenile arthropathies for comparisons, including all forms of juvenile rheumatoid arthritis (polychondritis, pauciarthritis, and systemic), juvenile spondyloarthropathy, and juvenile idiopathic inflammatory myopathies, such as juvenile dermatomyositis.

The electronic database findings were supplemented by manual searches cross-referenced from bibliographies of the articles retrieved.

Articles were selected for detailed review if they met specific criteria related to the CHAQ’s development and use.

The following aspects were examined in the articles selected:

• Study type
• Country
• Patient Population
• Psychometric validity in a specified patient population
• Correlations with objective clinical measures, such as joint range of motion

There have been relatively few observational studies using the CHAQ; most of these studies were descriptive and uncontrolled in design.

Only one study identified was a randomized clinical trial.

Table 1. Summary of CHAQ Studies

<table>
<thead>
<tr>
<th>Type of Study</th>
<th>Published Year</th>
<th>Title</th>
<th>Disease</th>
<th>CHAQ Used</th>
<th>Disability Instrument</th>
<th>Discomfort Instrument</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case-control</td>
<td>2004</td>
<td></td>
<td>Juvenile Rheumatoid Arthritis</td>
<td>Yes</td>
<td>Physical Functioning</td>
<td>Disability Index</td>
<td>Descriptive study</td>
</tr>
<tr>
<td>Cross-sectional</td>
<td>2005</td>
<td></td>
<td>Juvenile Rheumatoid Arthritis</td>
<td>Yes</td>
<td>Physical Functioning</td>
<td>Disability Index</td>
<td>Descriptive study</td>
</tr>
</tbody>
</table>

Table 2. Validated Cultural and Language Translations of the CHAQ

<table>
<thead>
<tr>
<th>Language</th>
<th>Version</th>
<th>Translation/Adaptation</th>
<th>Validation Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td></td>
<td>Spanish-English</td>
<td>Cross-cultural</td>
<td></td>
</tr>
<tr>
<td>Danish</td>
<td></td>
<td>Danish-Danish</td>
<td>Cross-cultural</td>
<td></td>
</tr>
<tr>
<td>Portuguese</td>
<td></td>
<td>Portuguese-English</td>
<td>Cross-cultural</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Reliability, Validity, and Parent-Child Correlations of the CHAQ

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Cronbach’s alpha of 0.94</td>
</tr>
<tr>
<td>Validity</td>
<td>Face validity, content validity, convergent validity, divergent validity, discriminant validity</td>
</tr>
<tr>
<td>Parent-child correlations</td>
<td></td>
</tr>
</tbody>
</table>