Measurement Characteristics and Clinical Utility of the Awareness Questionnaire in Individuals With Traumatic Brain Injury

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Traumatic brain injury (TBI) is an injury that disrupts normative function of the brain by means of a bump, blow, or jolt to the head and ranges in severity from mild (concussion) to severe. \(^1\) Approximately 30% of all injury deaths are caused by TBI.\(^1\) Patients with TBI often demonstrate impaired awareness to their limitations, which leads to low motivation for treatment.\(^2\) The Awareness Questionnaire (AQ) is an assessment developed to measure the awareness of patients with TBI in terms of cognitive, behavioral/affective, and motor/sensory characteristics. The AQ focuses on differences in functioning pre- and postinjury. The AQ is administered to the patient and a family member or clinician. The patient and family member versions have 17 items, whereas the clinician version contains 18 items.\(^3\) Each question is scored on a 5-point Likert-type scale with answers ranging from much worse to much better after injury.\(^4\) Differences between patient-clinician scores and patient-family scores are calculated to assess awareness; higher difference scores indicate lower awareness of limitations. The AQ has adequate construct and criterion validity,\(^3,5-8\) adequate to excellent test-retest reliability,\(^4\) and excellent internal consistency.\(^2,4\) Administration of the AQ is free and simple, requiring <10 minutes, and only involves the questions themselves. The Traumatic Brain Injury Taskforce states that the tool is appropriate for use in intervention research studies. The assessment can be found on the TBI Model Systems website created by the Center for Outcome Measurement in Brain Injury.\(^3\)

BIBLIOGRAPHY


This abbreviated summary provides a review of the psychometric properties of the AQ in people with traumatic brain injury. A full review of the AQ and reviews of >400 other instruments for patients with various health conditions can be found at www.sralab.org/rehabilitation-measures.

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This instrument summary is designed to facilitate the selection of outcome measures by clinicians. The information contained in this summary represents a sample of the peer-reviewed research available at the time of this summary’s publication. The information contained in this summary does not constitute an endorsement of this instrument for clinical practice. The views expressed are those of the summary authors and do not represent those of the authors’ employers, the instrument owner(s), the Archives of Physical Medicine and Rehabilitation, the Rehabilitation Measures Database, or the U.S. Department of Health and Human Services. The information contained in this summary has not been reviewed externally.

The Rehabilitation Measures Database and Instrument Summary Tear-sheets were initially funded by the National Institute on Disability, Independent Living, and Rehabilitation Research, U.S. Department of Health and Human Services, through the Rehabilitation Research and Training Center on Improving Measurement of Medical Rehabilitation Outcomes (grant no. H133B090024).
Characteristics/utility of awareness questionnaire in TBI

**Measure Name:** Awareness Questionnaire

**Acronym:** AQ

**Summary Authors:** E. Engel, A. Peipert & L. Ehrlich-Jones

<table>
<thead>
<tr>
<th>Populations Reviewed:</th>
<th>Required Equipment:</th>
<th>Training Required:</th>
<th>Admin Time:</th>
<th>Items:</th>
<th>Score:</th>
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<td>None</td>
<td>None</td>
<td>10 min</td>
<td>17-18</td>
<td>5 point scale</td>
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**Purpose and Administration Instructions:**

The Awareness Questionnaire measures the degree of impairment to self-awareness after an acquired brain injury. The questionnaire is administered to the patient and either a family member or clinician and compared.

**Validity:**

*Predictive Validity:*
Difference in patient and family ratings are significantly associated with employment status and productivity outcomes ($X^2=17.71, R^2=0.33$).

*Construct Validity:*
Clinician and Patient scores have Adequate correlation with Satisfaction with Life Scale ($r=0.34-0.39$).

*Content Validity:*
AQ demonstrates three factors: cognitive, behavioral/affective, and motor/sensory. A factor structure with 12 items accounts for 50.9% of the variance.

*Convergent Validity:*
Adequate correlation with Patient Competency Rating Scale (Spearman $r=0.50-0.69$).

Adequate correlation with Patient-Clinician Difference and Patient Family difference ($r=0.65$).

Adequate correlation with Wisconsin Card Sorting Test (Pearson $r=.390-.590$).

| SEM is 3.265 for the patient questionnaire and 2.800 for the family questionnaire calculated from provided values. |

**Reliability:**

*Internal Consistency:*
Excellent consistency ($\alpha=.88$)

Excellent on patients version ($\alpha=.80$)

Excellent on relatives version ($\alpha=.82$)

*Test-Retest Reliability:*
Excellent (ICC=0.80) overall for patients

Adequate to Excellent by category breakdown (ICC=0.59-0.74)

 Adequate overall for relatives (ICC=0.66) and Adequate to Excellent by category breakdown (ICC=0.61-.82)

**Professional Considerations**
The Traumatic Brain Injury Taskforce (TBI EDGE) states that the tool is appropriate for use in intervention research studies.

**Cut-Off Scores:**
Scores range from 17-85. A score of 51 is "about the same as before injury". Difference scores range from -68 to 68. Difference score >20 correlates to impaired self-awareness.

**Floor / Ceiling Effects:**
None were found upon analysis.

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<th>Cut-off Criteria:</th>
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