

Center for Outcome Measurement in Brain Injury (COMBI): An accessible, cost effective, web based resource for reliable and valid measures

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ABSTRACT

With an amplified need for ongoing accreditation and evidence-based medicine and rehabilitation after disability, an increased call for rigor in research, and mounting costs of clinical trial research, reliable and valid measurement of outcomes is paramount. Many clinicians and researchers have developed home-grown tools to meet an immediate need. However, many have not been psychometrically tested and also duplicate already existing reliable and valid measures. In order to avoid duplication of effort and to help disseminate reliable and valid measures of outcomes following brain injury, the Center for Outcome Measurement in Brain Injury (COMBI) was developed.

The COMBI is a web-based collaborative project of 16 brain injury facilities or centers, most of them Traumatic Brain Injury Model Systems. The COMBI currently provides comprehensive information on 31 outcome measures used in acute care, rehabilitation, and community settings following brain injury. For each supported measure there is syllabus and training information, rating forms, background information on validity and reliability, a reference list of published studies, testing materials and ongoing testing certification.

The COMBI has implications to a broad-based national and international audience. Recent review has shown that the COMBI serves more than 1000 visitors per day and that an average of 230-PDF versions of instruments are downloaded each day. Effectiveness of the COMBI is also analyzed and presented.

The COMBI will continue to add measures and serve as a resource to the acute, rehabilitation, and community-based providers of brain injury services. Additional disability-specific outcome measurement resources are planned.

OBJECTIVES

1. Describe the need for affordable, reliable, and valid brain injury outcome measures.
2. Identify reliable and valid outcome measures for assessment after brain injury.
3. Explain steps for accessing online resources including background psychometric information, actual outcome measure rating forms, and training materials.

INTRODUCTION

COMBI The Center for Outcome Measurement In Brain Injury

Identified Need

- Lack of affordable, reliable and validated measures for brain injury research and clinical description
- Validated measures not available in a consistent and accessible format.
- Little to no support or feedback for measure users.
- Use of "home-grown" measures

The COMBI Solution

- Collaborative effort of 16 brain injury facilities, bringing together national and international measurement experts
- Information provided in a consistent and accessible format
- Consistent administration and scoring through training
- Experts respond to questions and comments
- Widespread dissemination of validated instruments

COMBI Instruments

<p>Agitated Behavior Scale (ABS) A 14-item instrument used for serial assessment of agitation by clinicians raters.</p> <p>Apathy Evaluation Scale (AES) An 18-item instrument used for evaluation of apathy. Can be self-rated or rated by a clinician or significant other.</p> <p>Awareness Questionnaire (AQ) An 18-item measure of self-awareness. Can be self-rated or rated by a clinician or significant other.</p> <p>Cognitive Log (Cog-Log) A 10-item measure used for serial measurement of cognition by clinicians raters.</p> <p>Coma/Near Coma Scale (CNC) An 11-item instrument used by clinicians to assess low-level brain-injured patients.</p> <p>Coma Recovery Scale- Revised(CRS-R) A 23-item instrument used to assist with differential diagnosis, prognostic assessment, and treatment planning with patients with disorders of consciousness.</p> <p>Confusion Assessment Protocol (CAP) A 58-item instrument used by clinicians to measure confusion.</p> <p>Community Integration Questionnaire (CIQ) A 15-item instrument used to measure community integration. Can be self-rated or rated by a clinician or significant other.</p> <p>The Craig Handicap Assessment and Reporting Technique (CHART) A 32-item instrument used to measure participation. Can be self-rated or rated by a clinician or significant other.</p> <p>The Craig Handicap Assessment and Reporting Technique Short Form (CHART SF) A 19-item instrument used to measure participation (a shorter version of the CHART). Can be self-rated or rated by a significant other.</p> <p>The Craig Hospital Inventory of Environmental Factors (CHIEF) A 25-item instrument used to measure environmental factors and the impact of environmental factors. Self-rated.</p> <p>Disability Rating Scale (DRS) An 8-item instrument used by clinicians to measure disability. (Study) Employment Variables after TBI A report on research having to do with employment following brain injury, and how to measure employment.</p> <p>The Family Needs Questionnaire (FNO) A 40-item instrument used to measure family needs as rated by a significant other. Proprietary.</p> <p>Functional Assessment Measure (FAM) A 12-item adjunct or addition to the FIM(TM) adding more brain injury/stroke related items. Rated by clinicians.</p> <p>Functional Independence Measure (FIM(TM)) An 18-item instrument used by clinicians to measure disability. Proprietary.</p> <p>Glasgow Outcome Scale (GOS) A 1-item instrument used by clinicians to measure disability.</p>	<p>Extended Glasgow Outcome Scale (GOS-E) An extension of the GOS that has 8 categories rather than 5.</p> <p>High Level Mobility Assessment Tool (HIMAT) A 13-item measure used to quantify high-level mobility outcomes following traumatic brain injury (TBI).</p> <p>Level of Cognitive Functioning Scale (LCFS) A 1-item instrument used by clinicians to assess cognitive functioning. Commonly referred to as the Rancho Scale.</p> <p>Mayo Portland Adaptability Inventory (MPI) A 35-item instrument that measures problems after brain injury. Can be self-rated or rated by a clinician or significant other.</p> <p>Mississippi Aphasia Screening Test (MAST) A 46-item instrument used by clinicians to measure communication and language skills.</p> <p>Moss Attention Rating Scale (MARS) A 22-item observational instrument to measure attention related behavior.</p> <p>Neurobehavioral Functioning Inventory (NFI) A 76-item instrument used to measure symptoms and behaviors after brain injury. Proprietary.</p> <p>The Orientation Log (O-Log) A 10-item measure used by clinicians to serially assess orientation.</p> <p>The Patient Competency Rating Scale (PCRS) A 30-item measure of self-awareness. Can be self-rated or rated by a clinician or significant other.</p> <p>Participation Objective, Participation Subjective The instrument asks questions regarding 26 activities or elements of participation. Objective questions relate to the frequency of an activity, subjective questions relate to the importance of an activity and the satisfaction with their current participation in an activity.</p> <p>Satisfaction With Life Scale (SWLS) A 5-item instrument used to measure life satisfaction. Self-rated.</p> <p>(Problematic) Substance Use Identified in the TBI Model Systems National Dataset A report on research involving substance use and traumatic brain injury, and how to measure substance use.</p> <p>Service Obstacle Scale (SOS) A 6-item instrument that measures perceptions regarding brain-injury related services. Can be self-rated or rated by a significant other.</p> <p>Supervision Rating Scale (SRS) A 1-item instrument used by clinicians to measure amount of received supervision.</p>
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INCREASING ACCESSIBILITY

Scale Example: DRS

Introduction: A brief summary on the scale and its uses

Syllabus: Detailed information on administration and scoring

FAQ: Frequently Asked Questions (and answers!)

Rating Form: Downloadable in Portable Document Format (PDF)

Rating Form: HTML formatting keeps instruments consistent for viewing and printing

Training: Other materials for learning about administration and scoring

Testing materials: For certification in administration

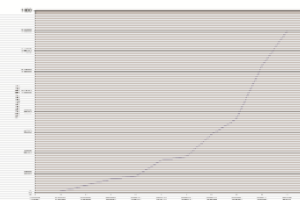
Properties: Information on reliability, validity, and other psychometrics

References: Essential articles concerning the measure and its development

The Disability Rating Scale (DRS) is a widely used measure of disability following brain injury. The COMBI provides information on administration and scoring, downloadable rating forms, training, certification, information on psychometrics, and a bibliography of additional references and published articles. This information is provided free of charge.
www.tbms.org/combi/drs

EXAMINING EFFECTIVENESS

COMBI Usage



COMBI Collaborators



- Since 1996, the COMBI has had more than 3 million visitors.
- Over 10% of visitors are from outside the US.
- 230 instruments are downloaded each day (saving more than \$35000 in postage and \$80000 in printing and handling yearly).
- COMBI is widely cited in professional publications.
- COMBI information is listed at the top of most search engines
- An international collaborative success.

SUPPORT

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