

STARS Education and Research Alliance

CREATING KNOWLEDGE | TRANSFORMING CARE

STARS Critically Appraised Topic
(CAT) Group
Assessment of cognitive
communication disorders after ABI

STARS Critically Appraised Topic (CAT) Group: Assessment of cognitive communication disorders after ABI

Specific Question:

"What are the best evidence-based assessments for cognitive communication disorders for adults with Acquired Brain Injury (including Traumatic Brain Injury) in post-acute rehabilitation settings?"

Clinical bottom line

Based on two relevant guidelines, assessment of cognitive-communication should be timely, person-centred, dynamic, symptoms-focused and use a range of subjective and objective measures with demonstrated construct and ecological validity. Recommended areas for assessment include social cognition, communication in context and goal attainment and these should take into account a range of person-specific factors obtained through interview and patient-reported outcome measures (PROMs). Assessment of vision and hearing should also be routinely conducted. There is a lack of specific guidance around interprofessional assessment.

Why is this important?

Communication impairments after Acquired Brain Injury (ABI) are highly prevalent and can have a devastating impact on the individual and their networks. Communication deficits can disrupt family communications, social participation, independence in community, and occupational participation. Therefore, it is vital that individuals receive equitable and timely access to interventions that address these concerns. This requires assessment methods that consider the cognitive, emotional, cultural, contextual and physical influences on real world communication. Assessment measures that are sensitive to change and ecologically valid are vital to assessment.

Cognitive-communication disorders are defined as difficulties in communicative competence (listening, speaking, reading, writing, conversation, and social interaction) that result from underlying cognitive impairments (attention, memory, organization, information processing, problem solving, and executive functions). Cognitive-communication disorders are complex, multifaceted, and require patient-centred management. At STARS, there are a range of clinicians involved in cognitive-communication rehabilitation of individuals after ABI. However, currently there is limited interprofessional collaboration with regards to the assessment and treatment of these disorders. Understanding best research evidence about assessment of cognitive-communication disorders, including assessment choice, timing, and assessment completion training and skill requirements will facilitate these interprofessional discussions. Optimising assessment processes across the STARS multidisciplinary team will enhance person-centred approaches that are more cost effective, efficient, enhance team communication and reduce duplication.

Inclusion Criteria

As per PICOT table below.

Search dates

Last 10 years (2013-2023).

Type of Study

As per PICOT table below.

PICOT

	Description	Search terms
Population and Setting	<p>Included: Inpatient rehabilitation All acquired brain injury (incl. TBI) Adults / Acquired</p> <p>NB:</p> <ul style="list-style-type: none"> - search term may not require specification - when reviewing articles exclude progressive neuro (e.g. dementia) - interested in sub-acute (open to outpatient context) - focused on moderate-severe TBI versus mild TBI (however not to exclude in search because of potential mixed severity in studies) <p>Excluded (not recommended for search): Progressive neuro, Congenital/Neurodevelopment disorders, Developmental</p>	<p>From IDT CAT: TBI, Stroke, Haemorrhage, Tumour, Meningitis, Hypoxic</p> <p>Acquired Adult</p> <p>Rehabilitation</p>
Intervention or Exposure (ie what is being tested)	<p>Cognitive-communication disorders / secondary language disorders</p> <p>Screening for variables such as:</p> <p>Reading comprehension, Auditory comprehension, Story retell, Verbal abstract reasoning, Discourse comprehension, Discourse production, Prosody (receptive and expressive), Pragmatics, Verbal fluency, Problem-solving, Executive functions, Lexical-semantics, Function communication,</p> <p>Assessment / framework / approach</p>	<p>Cognitive-communication, Cognitive communication, Secondary language disorders, High level language disorder/deficit/impairment/difficulty, High level cognitive language, Cognitive language, Right hemisphere (communication) disorders/deficits/impairment/difficulty, Social communication disorder/deficit/impairment/difficulty</p> <p>Assessment Approach Framework Theory Recommendation Guideline, Guidance, Screeener, Protocol, Service delivery</p>
Comparison, if any	Not relevant	
Outcomes of interest	Sensitivity to change Validity	
Types of studies	High-quality; look for when screening Remove search terms/filters for types of articles 10 year limit (15 if limited relevant returns)	

Databases Searched

PubMed, CINAHL Complete, Embase, Cochrane Library

Date of search

6 October 2023

Search Strategies (including subject headings)

PubMed 291 results

("cognitive communication"[tiab] OR "cognitive-communication"[tiab] OR "cognitive language"[ti] OR (("right hemisphere"[ti] OR "social communication"[ti] OR "secondary language"[ti] OR "high level language"[ti]) AND ("disorder"[ti] OR "disorders"[ti] OR "deficit"[ti] OR "deficits"[ti] OR "impairment"[ti] OR "impairments"[ti] OR "difficulty"[ti] OR "difficulties"[ti])) OR ("Communication Disorders"[Mesh] OR "communication"[ti] OR "communicative"[ti] OR "language"[ti]) AND ("Cognition Disorders"[Mesh] OR "cognitive"[ti] OR "cognition"[ti])) AND ("Brain Injuries"[Mesh] OR "Meningitis"[Mesh] OR "Stroke"[Mesh] OR "acquired brain injury"[tiab] OR "acquired brain injuries"[tiab] OR "ABI"[tiab] OR "ABIs"[tiab] OR "traumatic brain injury"[tiab] OR "traumatic brain injuries"[tiab] OR "TBI"[tiab] OR "TBIs"[tiab] OR "stroke"[tiab] OR "strokes"[tiab] OR "cerebrovascular accident"[tiab] OR "cerebrovascular accidents"[tiab] OR "CVA"[tiab] OR "CVAs"[tiab] OR "meningitis"[tiab] OR (("haemorrhage"[tiab] OR "haemorrhages"[tiab] OR "hemorrhage"[tiab] OR "hemorrhages"[tiab] OR "tumour"[tiab] OR "tumours"[tiab] OR "tumor"[tiab] OR "tumors"[tiab] OR "hypoxic"[tiab] OR "hypoxia"[tiab] OR "anoxic"[tiab] OR "anoxia"[tiab]) AND ("brain"[tiab] OR "cerebral"[tiab] OR "cerebrovascular"[tiab])) AND ("Neuropsychological Tests"[Mesh] OR "Guidelines as Topic"[Mesh] OR "Guideline" [Publication Type] OR "assessment"[tiab] OR "assessments"[tiab] OR "assessed"[tiab] OR "test"[tiab] OR "tests"[tiab] OR "testing"[tiab] OR "tool"[tiab] OR "tools"[tiab] OR "identification"[tiab] OR "approach"[tiab] OR "framework"[tiab] OR "theory"[tiab] OR "recommendation"[tiab] OR "recommendations"[tiab] OR "guideline"[tiab] OR "guidelines"[tiab] OR "guidance"[tiab] OR "model"[tiab] OR "models"[tiab] OR "screeener"[tiab] OR "protocol"[tiab]) AND 2013:2023[dp] AND (eng[la] OR und[la]) NOT (animals [mh] NOT humans [mh]) NOT ("pediatric"[ti] OR "pediatrics"[ti] OR "children"[ti])

CINAHL Complete (EBSCOhost) 197 results

(TI("cognitive communication" OR "cognitive-communication" OR "cognitive language") OR AB("cognitive communication" OR "cognitive-communication") OR ((TI("right hemisphere" OR "social communication" OR "secondary language" OR "high level language")) AND (TI("disorder" OR "disorders" OR "deficit" OR "deficits" OR "impairment" OR "impairments" OR "difficulty" OR "difficulties")) OR ((MH "Communicative Disorders+" OR TI("communication" OR "communicative" OR "language")) AND (MH "Cognition Disorders+" OR TI("cognitive" OR "cognition")))) AND (MH "Brain Injuries+" OR MH "Meningitis+" OR MH "Stroke+" OR TI("acquired brain injury" OR "acquired brain injuries" OR "ABI" OR "ABIs" OR "traumatic brain injury" OR "traumatic brain injuries" OR "TBI" OR "TBIs" OR "stroke" OR "strokes" OR "cerebrovascular accident" OR "cerebrovascular accidents" OR "CVA" OR "CVAs" OR "meningitis") OR AB("acquired brain injury" OR "acquired brain injuries" OR "ABI" OR "ABIs" OR "traumatic brain injury" OR "traumatic brain injuries" OR "TBI" OR "TBIs" OR "stroke" OR "strokes" OR "cerebrovascular accident" OR "cerebrovascular accidents" OR "CVA" OR "CVAs" OR "meningitis") OR ((TI("haemorrhage" OR "haemorrhages" OR "hemorrhage" OR "hemorrhages" OR "tumour" OR "tumours" OR "tumor" OR "tumors" OR "hypoxic" OR "hypoxia" OR "anoxic" OR "anoxia") OR AB("haemorrhage" OR "haemorrhages" OR "hemorrhage" OR "hemorrhages" OR "tumour" OR "tumours" OR "tumor" OR "tumors" OR "hypoxic" OR "hypoxia" OR "anoxic" OR "anoxia")) AND (TI("brain" OR "cerebral" OR "cerebrovascular") OR AB("brain" OR "cerebral" OR "cerebrovascular")))) AND (MH "Neuropsychological Tests+" OR MH "Practice Guidelines" OR TI("assessment" OR "assessments" OR "assessed" OR "test" OR "tests" OR "testing" OR "tool" OR "tools" OR "identification" OR "approach" OR "framework" OR "theory" OR "recommendation" OR "recommendations" OR "guideline" OR "guidelines" OR "guidance" OR "model" OR "models" OR "screeener" OR "protocol") OR AB("assessment" OR "assessments" OR "assessed" OR "test" OR "tests" OR "testing" OR "tool" OR "tools" OR "identification" OR "approach" OR "framework" OR "theory" OR "recommendation" OR "recommendations" OR "guideline" OR "guidelines" OR "guidance" OR "model" OR "models" OR "screeener" OR "protocol")) AND PY 2013-2023 AND (LA English) NOT ((MH "Animals+" OR MH "Animal Studies" OR TI animal model*) NOT MH "Human") NOT (TI ("pediatric" OR "pediatrics" OR "children"))

Embase (Elsevier) 218 results

Limited to articles/articles in press/reviews due to high number of conference abstracts in Embase

("cognitive communication":ti,ab OR "cognitive-communication":ti,ab OR "cognitive language":ti OR (("right hemisphere":ti OR "social communication":ti OR "secondary language":ti OR "high level language":ti) AND ("disorder":ti OR "disorders":ti OR "deficit":ti OR "deficits":ti OR "impairment":ti OR "impairments":ti OR "difficulty":ti OR "difficulties":ti)) OR (('communication disorder'/de OR "communication":ti OR "communicative":ti OR "language":ti) AND ("cognitive defect"/de OR "cognitive":ti OR "cognition":ti))) AND ('brain injury'/de OR 'meningitis'/de OR 'cerebrovascular accident'/de OR "acquired brain injury":ti,ab OR "acquired brain injuries":ti,ab OR "ABI":ti,ab OR "ABIs":ti,ab OR "traumatic brain injury":ti,ab OR "traumatic brain injuries":ti,ab OR "TBI":ti,ab OR "TBIs":ti,ab OR "stroke":ti,ab OR "strokes":ti,ab OR "cerebrovascular accident":ti,ab OR "cerebrovascular accidents":ti,ab OR "CVA":ti,ab OR "CVAs":ti,ab OR "meningitis":ti,ab OR ("haemorrhage":ti,ab OR "haemorrhages":ti,ab OR "hemorrhage":ti,ab OR "hemorrhages":ti,ab OR "tumour":ti,ab OR "tumours":ti,ab OR "tumor":ti,ab OR "tumors":ti,ab OR "hypoxic":ti,ab OR "hypoxia":ti,ab OR "anoxic":ti,ab OR "anoxia":ti,ab) AND ("brain":ti,ab OR "cerebral":ti,ab OR "cerebrovascular":ti,ab))) AND ('neuropsychological assessment'/de OR 'practice guideline'/de OR "assessment":ti,ab OR "assessments":ti,ab OR "assessed":ti,ab OR "test":ti,ab OR "tests":ti,ab OR "testing":ti,ab OR "tool":ti,ab OR "tools":ti,ab OR "identification":ti,ab OR "approach":ti,ab OR "framework":ti,ab OR "theory":ti,ab OR "recommendation":ti,ab OR "recommendations":ti,ab OR "guideline":ti,ab OR "guidelines":ti,ab OR "guidance":ti,ab OR "model":ti,ab OR "models":ti,ab OR "screener":ti,ab OR "protocol":ti,ab) AND [2013-2023]/py AND [english]/lim NOT ('animal experiment'/de NOT ('human experiment'/de OR 'human'/de)) NOT ("pediatric":ti OR "pediatrics":ti OR "children":ti) AND ([article]/lim OR [article in press]/lim OR [review]/lim)

Cochrane Library (Wiley) 40 results, including 1 Cochrane Reviews and 39 Trials*Limited trials to year published 2013 – present*

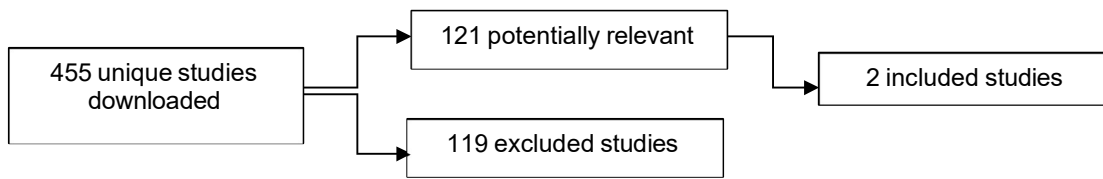
Advanced search > Search manager

ID	Search Hits	
#1	("cognitive communication" OR "cognitive-communication" OR "cognitive language"):ti,ab,kw	200
#2	((("right hemisphere" OR "social communication" OR "secondary language" OR "high level language") AND ("disorder" OR "disorders" OR "deficit" OR "deficits" OR "impairment" OR "impairments" OR "difficulty" OR "difficulties"))):ti	44
#3	MeSH descriptor: [Communication Disorders] explode all trees	2400 #4
	("communication" OR "communicative" OR "language"):ti	5653
#5	#3 OR #4	7579
#6	MeSH descriptor: [Cognition Disorders] explode all trees	7304 #7
	("cognitive" OR "cognition"):ti	37233
#8	#6 OR #7	40018
#9	#5 AND #8	325
#10	#1 OR #2 OR #9	543
#11	MeSH descriptor: [Brain Injuries] explode all trees	3264
#12	MeSH descriptor: [Meningitis] explode all trees	835
#13	MeSH descriptor: [Stroke] explode all trees	15152
#14	("acquired brain injury" OR "acquired brain injuries" OR "ABI" OR "ABIs" OR "traumatic brain injury" OR "traumatic brain injuries" OR "TBI" OR "TBIs" OR "stroke" OR "strokes" OR "cerebrovascular accident" OR "cerebrovascular accidents" OR "CVA" OR "CVAs" OR "meningitis"):ti,ab,kw	81501
#15	#11 OR #12 OR #13 OR #14	83078
#16	((("haemorrhage" OR "haemorrhages" OR "hemorrhage" OR "hemorrhages" OR "tumour" OR "tumours" OR "tumor" OR "tumors" OR "hypoxic" OR "hypoxia" OR "anoxic" OR "anoxia") AND ("brain" OR "cerebral" OR "cerebrovascular"))):ti,ab,kw	18419
#17	#15 OR #16	94180
#18	MeSH descriptor: [Neuropsychological Tests] explode all trees	18748
#19	MeSH descriptor: [Guidelines as Topic] explode all trees	3300
#20	MeSH descriptor: [Guideline] explode all trees	1015
#21	("assessment" OR "assessments" OR "assessed" OR "test" OR "tests" OR "testing" OR "tool" OR "tools" OR "identification" OR "approach" OR "framework" OR "theory" OR "recommendation" OR "recommendations" OR "guideline" OR "guidelines" OR "guidance" OR "model" OR "models" OR "screener" OR "protocol"):ti,ab,kw	1000091
#22	#18 OR #19 OR #20 OR #21	1004280
#23	#10 AND #17 AND #22 with Cochrane Library publication date from Jan 2013 to present	44

Search process

Exported results from databases to EndNote, removed duplicates using the SR Accelerator Deduplicator tool (focused algorithm) <https://sr-accelerator.com/#/deduplicator>. Also removed results not relevant to inclusion criteria to identify potentially relevant studies. Copied annotated bibliography for potentially relevant results into word document for screening title and abstracts.

Results total number of results from database searches = 746, deduplicated number of results = 455



First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Togher L et al (2023) Guidelines	TBI, inpatient and outpatient settings	Cognitive-communication management	<p>The guidelines highlighted the following considerations for clinical practice:</p> <p>Need for cognitive-communication assessments to evaluate individual factors, which could be addressed using a patient interview proforma (e.g. similar to Functional Communication Therapy Planner). Interprofessional practice points include liaison with Social Work who routinely complete psychosocial assessments and Occupational Therapy who assess previous levels of functioning and the home environment.</p> <p>Need for social cognition assessment, which can be facilitated with completion of the Montreal Evaluation of Cognition (MEC) and The Awareness for Social Inference Test (TASIT). Interprofessional practice points include liaison with Psychology.</p> <p>Recommendation for Goal Attainment Scaling (GAS) supported by Level A recommendation (I.e. supported by at least one meta-analysis, systematic review, or RCT of appropriate size with relevant control group).</p> <p>Recommendation for hearing and vision screening, however unspecified if visuo-perceptual etc). Currently, visual processing screened by multiple professionals.</p> <p>Use of the Measure of Skill in Conversation (MSC) and Measure of Participation in Conversation (MPC) for communication partner training (CPT).</p> <p>Limited guidance around timing of assessment, professional to administer assessment or rationale for assessment.</p>	<p>The Appraisal of Guidelines for REsearch & Evaluation (AGREE II) instrument was used to critically appraise the guideline's quality, across the following domains: scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence.</p> <p>The following items were raised:</p> <p>No clear consumer representation (unclear if "advocate" had lived experience of cognitive-communication difficulties)</p> <p>No clear clinician representation</p> <p>Unclear if all authors constituted the panel reviewing the cognitive-communication evidence or whether a subgroup was formed, which affected knowledge of stakeholder involvement</p> <p>Review not pre-registered</p> <p>Selection bias during guideline development, as known articles were not included for review</p> <p>Overall assessment of the quality of the guideline: 5/7</p> <p>The guideline was recommended for use, with modifications</p>

<p>Brown J et al (2022) Guidelin</p>	<p>ABI, inpatient and outpatient ettings</p>	<p>Cognitive-communication management</p>	<p>The guidelines highlighted the following considerations for clinical practice:</p> <p>Timely, symptom-focused assessment of cognitive- communication skills by SP</p> <p>Comprehensive assessment by SP should include a variety of objective, subjective, and ecologically valid measures appropriate for detecting functionally significant impairments in the ABI population</p> <p>Dynamic assessment, repeated across recovery and rehabilitation</p> <p>Recommended use of a Patient Reported Outcome Measure (PROM) and GAS for outcome measurement</p>	<p>The Appraisal of Guidelines for REsearch & Evaluation (AGREE II) instrument was used to critically appraise the guideline’s quality, across the following domains: scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability and editorial independence.</p> <p>The following items were raised:</p> <p>Evidence mapping to statements inconsistent and unclear.</p> <p>Consensus points developed during consensus meetings; potential to have missed relevant evidence to inform this given the search was conducted for very specific questions.</p> <p>Limited to studies with a control group – strength and weakness (increases level of evidence, but potentially missing clinically-relevant studies).</p> <p>Rigorous systematic review (+ comprehensive database searches)</p> <p>Some inconsistencies with recommendation and the evidence for this (e.g. no difference reported).</p> <p>Overall assessment of the quality of the guideline: 5/7</p> <p>The guideline was recommended for use, with modifications</p>
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Summary

Assessment of cognitive-communication should be timely, person-centred, dynamic, symptoms-focused and use a range of subjective and objective measures with demonstrated construct and ecological validity. Recommended areas for assessment include social cognition, communication in context and goal attainment which should take into account a range of person-specific factors. Person-specific factors may be obtained through interview and patient-reported outcome measures (PROMs). Assessment of vision and hearing should also be routinely conducted. There was a lack of specific guidance around interprofessional assessment, however areas of overlap were discussed and identified (including personal and environmental factors (social work), social cognition (psychology), and everyday function in meaningful contexts (occupational therapy)).

The guidelines each incorporated a range of measures to improve rigour (e.g. systematic review of the evidence, consensus group which included a broad range of stakeholders, methods for rating the quality of individual studies). However, there were methodological gaps in each guideline which reduced their quality and thus confidence in the recommendations. Further, the recommendations lacked applicability to context and provided limited guidance about how they could be implemented in practice. As such, both guidelines were considered appropriate for use with modification and caution about their interpretation.

Questions that arose during discussion that could not be answered by the guidelines reviewed:

- Sharing assessment across team, reducing duplication – what are the different discipline roles and purpose of assessment across the MDT?
- Are there specific recommendations for patient-reported outcome measures (PROMs) and dynamic assessment in terms of what is available and how to optimise these assessments?
- What are the considerations around timing of assessment?
- What is the purpose of assessment within different rehabilitation settings across the MDT (e.g. baseline, identifying/rule out deficits, purpose of re-assessing, identifying strengths for compensation, predictive tests, setting goals for therapy)?

Implications for Practice/Research

Current practice in STARS adheres to recommendations around assessment of cognitive-communication. However, workflows could be optimised to better integrate an interprofessional approach which would improve service efficiency and patient-centred care. Proposed next steps following completion of the CAT are:

1. Further quality improvement work across the team to address questions raised around who and when to assess within a multidisciplinary/interprofessional framework.
 - a. Requires support from director/s of allied health disciplines
 - b. Consider interprofessional lead guidance via workshop/s e.g., Karina O'Leary (STARS Interprofessional education and practice lead) and the STARS Allied Health Director
2. The speech pathology team will continue to review the evidence for specific assessment tools within a journal club setting to ensure awareness of the best available tools across the speech pathology team.

What would you tweet? (140 characters)

Assessment of cognitive-communication in adults with ABI at STARS meets international guidelines, however greater interprofessional practice would improve service efficiency.

Critical Appraisal Topic Group Team Members

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Maddison Campbell (Senior Neuropsychologist, STARS)

References

MacDonald, S. (2017). "Introducing the model of cognitive-communication competence: A model to guide evidence-based communication interventions after brain injury." *Brain Inj* 31(13-14): 1760-1780