Cincinnati Children's

LEGEND: Evidence Appraisal of a Single Study
Diagnosis / Assessment
Psychometric Study

Project/Topic of your Clinical Question: _____

Reviewer: _____ **Today's Date:** _____ **Final Evidence Level:** _____

Article Title: _____

Year: _____ **First Author:** _____ **Journal:** _____

Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question?

☐ **Yes** ☐ **No** ☐ **Unknown**

- Study Aim/Purpose/Objectives:
- Inclusion Criteria:
- Exclusion Criteria:

When reading the bolded questions, consider the bulleted questions to help answer the main question.
If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance:
CCHMC Evidence Experts: http://groups/ce/NewEBC/EBDMHelp.htm
Unfamiliar terms can be found in the LEGEND Glossary: http://groups/ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf

VALIDITY: ARE THE RESULTS OF THE PSYCHOMETRIC STUDY VALID OR CREDIBLE?

1. **Was the study purpose focused on examining one or more measurement properties** *(i.e., validity, reliability)***?** ☐ **Yes** ☐ **No** ☐ **Unknown**
   Comments:

2. **Was the instrument clearly described?** ☐ **Yes** ☐ **No** ☐ **Unknown**
   Comments:

3. **Was the protocol for administration and scoring standardized?** ☐ **Yes** ☐ **No** ☐ **Unknown**
   Comments:

4. **Were the observers/raters appropriately trained or certified?** ☐ **Yes** ☐ **No** ☐ **Unknown**
   Comments:

5. **Were the data collected on a representative sample?** ☐ **Yes** ☐ **No** ☐ **Unknown**
   Comments:

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6. Was the sample size adequate? ☐ Yes ☐ No ☐ Unknown

- Do authors discuss whether the sample size is adequate?

Comments:

7. Did the instrument make intrinsic sense – face validity *(expert opinion/consensus)***?** ☐ Yes ☐ No ☐ Unknown

Comments:

8. Did the instrument sample the content/domain adequately? ☐ Yes ☐ No ☐ Unknown

Comments:

9. Was there evidence of the test's construct validity *(factor analysis)***?** ☐ Yes ☐ No ☐ Unknown

- Did the test discriminate between two groups *(known-groups method)*?
- Did the test values agree with values of a similar test or gold standard *(concurrent/convergent validity)* or with a future outcome *(predictive validity)*?

  If yes, then:

  - What was the strength of the correlation?
  - What were the confidence limits, if given?

Comments:

10. Was there freedom from conflict of interest? ☐ Yes ☐ No ☐ Unknown

- Sponsor/Funding Agency or Investigators

Comments:

RELIABILITY: ARE THE VALID STUDY RESULTS IMPORTANT?
ARE THE RESULTS OBTAINED WITH THESE MEASURES REPLICABLE? (TESTS, MEASURES, SCALES, INSTRUMENTS, ETC.)

11. What was the internal consistency *(i.e., Cronbach's alpha)***?**

(Relevant where scales have multiple items that sum up to a total score)

Comments:

12. Were appropriate statistical measures used to assess agreement between two or more occasions using the same observer *(i.e., intra-rater reliability)***?** ☐ Yes ☐ No ☐ Unknown

Comments:

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13. Were appropriate statistical measures used to assess agreement between two or more observers *(i.e., inter-rater reliability)***?** ☐ Yes ☐ No ☐ Unknown

Comments:

14.* Were appropriate statistical measures used to assess test-retest reliability** *(i.e., stability coefficient)?** ☐ Yes ☐ No ☐ Unknown

- Was an appropriate test-retest interval used?

Comments:

15. Did the instrument capture important change *(e.g., clinical significance)***?** ☐ Yes ☐ No ☐ Unknown

Comments:

16. Was there evidence of floor or ceiling effects? ☐ Yes ☐ No ☐ Unknown

Comments:

APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?

17. Can the results be applied to my population of interest? ☐ Yes ☐ No ☐ Unknown

- Is use of the instrument feasible in my care setting?
- Is the setting of the study applicable to my population of interest?
- Do the patient outcomes apply to my population or question of interest?
- Are the likely benefits worth the potential harm and costs?
- Were the patients in this study similar to my population of interest?

Comments:

18. Are my patient's and family's values and preferences satisfied by the use of the diagnostic test? ☐ Yes ☐ No ☐ Unknown

Comments:

19. Would you include this study/article in development of a care recommendation? ☐ Yes ☐ No ☐ Unknown

Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

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QUALITY LEVEL / EVIDENCE LEVEL

- *Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.*
- *Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article*

THE EVIDENCE LEVEL IS:

☐ **Good Quality Psychometric Study** (2a)
☐ **Lesser Quality Psychometric Study** (2b)
☐ **Not Valid, Reliable, or Applicable**

TABLE OF EVIDENCE LEVELS							
	TYPE OF STUDY / STUDY DESIGN						
DOMAIN OF CLINICAL QUESTION	**Systematic Review Meta–Analysis**	**CCT + Cohort – Prospective**	**Psychometric Study**	**Cohort – Retrospective**	**Cross–Sectional**	**Epidemiology Descriptive Case Series**	**Expert Opinion Case Reports**
Diagnosis / Assessment	**1a 1b**	**2a 2b**	**2a 2b**	**3a 3b**	**4a 4b**	**4a 4b**	**5a 5b**

+ *CCT = Controlled Clinical Trial*

Development for this appraisal form is based on:

1. Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: Users' guides to the medical literature : a manual for evidence-based clinical practice. *Users' guides to the medical literature : a manual for evidence-based clinical practice:* "JAMA & archives journals." Chicago, IL, 2002
2. Melnyk, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
3. Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from http://www.cebm.net/index.aspx?o=1025.
4. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs,* 2(3): 157-60, 2005.
5. Jerosch-Herold, C., An evidence-based approach to choosing outcome measures: a checklist for the critical appraisal of validity, reliability and responsiveness studies. British Journal of Occupational Therapy, 2005. 68(8): p. 347-53.

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