CREATION OF AN INSTITUTIONAL QUALITY ASSESSMENT TOOL REPOSITORY

Leila Ledbetter, MLIS, AHIP; Steph Hendren, MLIS
Duke University Medical Center Library & Archives

PROBLEM: Librarians conducting systematic reviews are frequently asked to suggest quality assessment tools. Tools are scattered and not easily findable.

SOLUTION: We created a comprehensive, searchable, open access repository of quality assessment and risk of bias tools.

BACKGROUND

The Duke Medical Center Library & Archives comprehensive literature search service primarily focuses on expert searching and guidance on general evidence synthesis methodology. We have experienced an increase in the number of questions about quality assessment tools. Our practice is to suggest the most commonly used tools. However, teams sometimes reported these tools did not meet their needs. To solve this problem, we created a repository and finding aid of quality assessment tools. This allowed us to become more familiar with the array of tools available, along with their purposes and features, and ultimately was helpful for our research teams.

DESCRIPTION

To construct our repository we conducted a literature search for quality assessment and risk of bias tools. Data we collected for each tool was:

- Tool's name
- Description
- Citation
- Intended use
- Whether it was validated
- Notable details

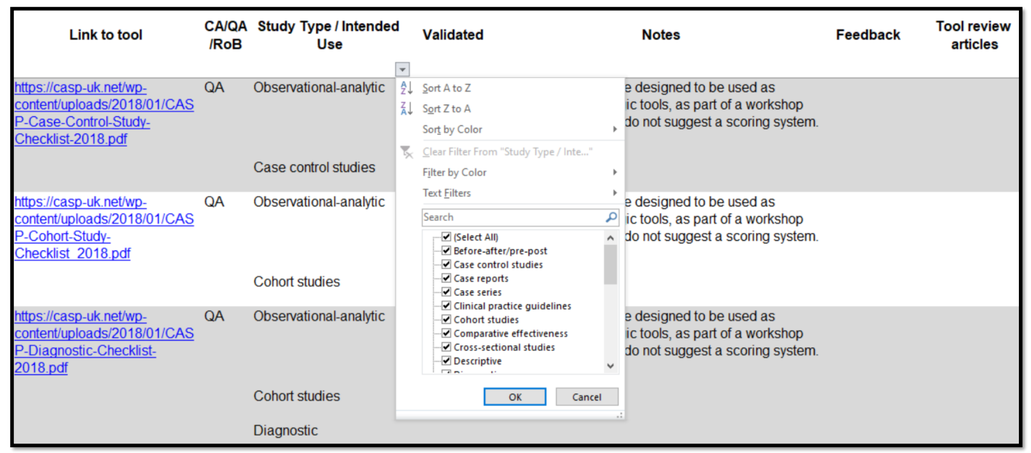
We included tools whose purpose was to evaluate the methodological quality or risk of bias of study designs. In most cases, we omitted critical appraisal tools, which we defined as anything that was designed solely to be used by clinicians or students to evaluate the quality of an article for class work or patient care. Our final product is a comprehensive, searchable table that is freely available on our systematic review services guide.

Alphabetical List of Tools

Tool Name	Tool Desciption	Citation
AGREE II - clinical practice guideline	:E II is an international tool to assess the quality and reporting of practice guid	Brouwers, Melissa C et al. "AGREE II: advancing guideline development, reporting and evaluation in health care." CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne vol. 182,18 (2010): E839-42. doi:10.1503/cmaj.090449
AMSTAR 2	AMSTAR 2 was developed to be able to assess non-randomized controlled trials in addition to RCTs. This tool has 16 items and includes a more comprehensive user guide; the tool does not provide an explicit overall score.	Shea BJ, Reeves BC, Wells G, Thuku M, Hamel C, Moran J, Moher D, Tugwell P, Welch V, Kristjansson E, Henry DA. Shea, Beverley J et al. "AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both." BMJ (Clinical research ed.) vol. 358 j4008. 21 Sep. 2017, doi:10.1136/bmj.j4008
AXIS	Contains 20 items. a critical appraisal tool that addressed study design and reporting quality as well as the risk of bias in cross-sectional studies	Downes, Martin J., et al. "Downes, Martin J et al. "Development of a critical appraisal tool to assess the quality of cross-sectional studies (AXIS)." BMJ open vol. 6,12 e011458. 8 Dec. 2016, doi:10.1136/bmjopen-2016-011458
CAMELOT	Under development - phase 1 completed, citation to publication available.	Munthe-Kaas, Heather Menzies et al. "Systematic mapping of existing tools to appraise methodological strengths and limitations of qualitative research: first stage in the development of the CAMELOT tool." BMC medical research methodology vol. 19,1 113. 4 Jun. 2019, doi:10.1186/s12874-019-0728-6
CASP: Case Controlled Study Checklist	Critical Appraisal Skills Program (CASP): Case Controlled Study Checklist is a methodological checklist which provides key criteria relevant to case controlled studies. This tool does NOT provide a score.	Critical Appraisal Skills Programme (2021). CASP: Case Controlled Study Checklist. [online] Available at: https://casp-uk.net/casp-tools-checklists/ Accessed: Date Accessed.

Sort and Filter by Study Type:

Link to tool	CA/QA /RoB	Study Type / Intended Use	Validated	Notes	Feedback	Tool review articles
https://casp-uk.net/wp-content/uploads/2018/01/CASP-Case-Control-Study-Checklist-2018.pdf	QA	Observational-analytic Case control studies		e designed to be used as ic tools, as part of a workshop do not suggest a scoring system.		
https://casp-uk.net/wp-content/uploads/2018/01/CASP-Cohort-Study-Checklist_2018.pdf	QA	Observational-analytic Cohort studies		e designed to be used as ic tools, as part of a workshop do not suggest a scoring system.		
https://casp-uk.net/wp-content/uploads/2018/01/CASP-Diagnostic-Checklist-2018.pdf	QA	Observational-analytic Cohort studies Diagnostic		e designed to be used as ic tools, as part of a workshop do not suggest a scoring system.		



Selected tools

Tool Name	Tool Desciption	Citation	Link to tool	CA/QA /RoB	Study Type / Intended Use
IHE quality appraisal tool: Case Series Studies	The IHE quality appraisal checklist for case series studies developed by a group of researchers at the Institute of Health Economics (IHE) in	Institute of Health Economics (IHE). Quality Appraisal of Case Series Studies Checklist. Edmonton (AB): Institute	https://www.ihe.ca/advanced-search/ihe-quality-appraisal-	QA	Before-after/pre-post
National Heart & Lung Quality Assessment Tool: Before-After Studies with no Control Group	The tools included items for evaluating potential flaws in study methods or implementation, including sources of bias (e.g., patient selection,	No citation available	https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-	QA	Before-after/pre-post

CONCLUSIONS

There are a wide variety of quality assessment and risk of bias tools available to meet most study designs. We continue to discover new tools as we interact with the evidence synthesis literature. Reporting guidelines such as STROBE, which are designed to aid in the reporting of research, and not specifically for quality assessment, were not added to the repository. It was frequently difficult to determine if a tool was validated, though many common tools have had their interrater-reliability tested. Where possible, we prioritized gathering risk of bias tools as per Cochrane Handbook's recommendations. We included notes that added additional information about usability or purpose.

Having a single searchable resource that captures the characteristics of a variety of tools can be a helpful for librarians or researchers conducting a systematic review outside their field of practice.

FUTURE DIRECTIONS

The authors intend to continually improve and update the repository with new tools and information.

The next planned step is to gather qualitative feedback from our researchers about their experience with the individual tools.

TAKEAWAYS

QUALITY ASSESSMENT TOOL REPOSITORY
https://osf.io/ws824/