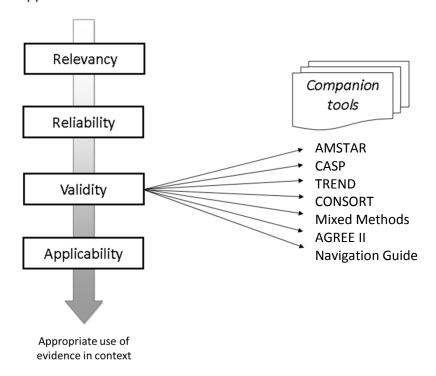
Companion tools: recommended research design-specific CATs

Due to the generic nature of the MetaQAT form ,you may find that you require more specific guidance for appraising certain study types, specifically when appraising the validity of a study. In those cases, you can refer to one of the resources listed below. Companion tools were selected from commonly-used CATs, with a preference for validated and peer-reviewed tools. Ease of use was also considered, and checklist style tools relying on a numerical score were excluded. Completing the MetaQAT while referring to the preselected companion tools allows for consistency across PHO.

Review the companion tool and use its criteria to inform your completion of the MetaQAT assessment of validity, or, if you prefer, complete the companion tool and attach it to the MetaQAT with the other sections completed. Keep in mind that not all study designs have CATs but the general appraisal framework can still be used to complete a quality assessment.

Appraisal Framework



CATs recommended for various research designs are listed in the table below. These tools were selected for being widely used and recommended by reputable sources.

Note that some resources included on the list are reporting guidelines: to use a reporting guideline as a CAT, first consider the presence of the listed items and then consider their appropriateness.

Table 1: Recommended research design-specific CATs

Research design	Recommended CAT	Summary
Systematic reviews and meta-analyses	<u>AMSTAR</u>	Assessment of Multiple Systematic Reviews (AMSTAR) is an 11-item assessment tool used to assess the methodological quality of systematic reviews. It was developed by researchers at the VU University Medical Centre in Amsterdam and the University of Ottawa, Institute of Population Health, and CIETcanada in Ottawa.
Cohort studies	CASP Cohort Study Checklist	CASP Cohort Study Checklist is one of several critical appraisal tools developed at Oxford University's Critical Appraisal Skills Program (CASP). Presented in a checklist format.
Case control studies	CASP Case Control Study Checklist	CASP Case Control Study Checklist is a tool for appraising case control studies.
Economic evaluation studies	CASP Economic Evaluation Study Checklist	CASP Economic Evaluation Studies Checklist is for appraising economic evaluation studies.
Non-randomised controlled trials	The TREND Statement	The Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement is a reporting guide for controlled trials without random assignment. It was developed by the TREND group.
Randomised controlled trials	The CONSORT Statement	The Consolidated Standards of Reporting Trials (CONSORT) Statement is a document that explains the reporting guidelines for randomized clinical trials. It was developed by the CONSORT Group.
Mixed methods research	Evaluation Tool for Mixed Methods Studies	This tool is designed to assess both the qualitative and quantitative aspects of a mixed method design. It was developed by the Health Care Practice Research & Development Unit (HCPRDU), at the School of Nursing, University of Salford.
Qualitative research	CASP Qualitative Checklist	CASP Qualitative Checklist is a tool for appraising qualitative studies.
Clinical guidelines	AGREE II Instrument	The Appraisal of Guidelines for Research & Evaluation (AGREE) Instrument is a tool to appraise the guideline development process and reporting. It has been updated to the AGREE II instrument. It was developed by the AGREE Collaboration.
Environmental health studies	Navigation Guide framework	The Navigation Guide is an evidence grading process developed for use in environmental

Research design	Recommended CAT	Summary
	Navigation Guide instructions (p.33-42)	health. Evidence grading is a larger process that involves assessing risk of bias for individual studies, across a group of studies, and integrating the strength of the recommendations. The individual risk of bias component is recommended as a companion tool.
Grey literature	PHO Guide to Appraising Grey Literature	Internal guide to appraisal of non-commerically produced or non-standard knowledge products.

^{*}Should you find a tool that is useful for a study design, please send it to library@oahpp.ca so we can update the companion tools.

Additional resources

AGREE Next Steps Consortium. Appraisal of guidelines for research & evaluation (AGREE) II instrument [Internet]. Hamilton, ON: The AGREE Research Trust; c2009 [updated 2013 Sep; cited 2015 May 14]. Available from: http://www.agreetrust.org/wp-content/uploads/2013/10/AGREE-II-Users-Manual-and-23-item-Instrument 2009 UPDATE 2013.pdf

Bai A, Shukla V, Bak G, Wells G. Quality assessment tools project report. Ottawa, ON: Canadian Agency for Drugs and Technologies in Health; 2012. Available from:

https://www.cadth.ca/media/pdf/QAT_final.pdf

Benos DJ, Bashari E, Chaves JM, Gaggar A, Kapoor N, LaFrance M, et al. The ups and downs of peer review. Adv Physiol Educ. 2007;31(2):145-52. Available

from: http://advan.physiology.org/content/31/2/145.long

Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: a fundamental concept for public health practice. Annu Rev Public Health. 2009;30:175-201.

Burls A. What is critical appraisal? 2nd ed. London, UK: Hayword Medical Communications; 2009. Available from:

http://www.medicine.ox.ac.uk/bandolier/painres/download/whatis/what is critical appraisal.pdf

Canadian Health Services Research Foundation. Research use week (Northeastern Ontario): tools, strategies and stories of using evidence in rural and remote health services delivery and policy development [Internet]. Ottawa, ON: Canadian Health Services Research Foundation; 2007 [cited 2015 May 14]. Available from: http://files.deslibris.ca/cppc/213/213137.pdf

Ciliska D, Thomas H, Buffett C. A compendium of critical appraisal tools for public health practice [Internet]. Hamilton, ON: National Collaborating Centre for Methods and Tools; 2012 [cited 2015 May 14]. Available from: http://www.nccmt.ca/pubs/CompendiumToolENG.pdf

Cochrane Public Health Group. Review authors [Internet]. Victoria, AU: The Cochrane Collaboration; 2015 [updated 2015 Apr 15; cited 2015 May 14]. Available from: http://ph.cochrane.org/review-authors

Community Guide. Systematic review methods [Internet]. Atlanta, GA: U.S. Department of Health & Human Services, The Community Guide; 2014 [updated 2014 Jun 3; cited 2015 May 14]. Available from: http://www.thecommunityguide.org/about/methods.html

Critical Appraisal Skills Programme (CASP). CASP cohort study checklist [Internet]. Oxford, UK: CASP; 2013 [updated 2013 May 31; cited 2015 May 14]. Available

from: http://media.wix.com/ugd/dded87_e37a4ab637fe46a0869f9f977dacf134.pdf

Critical Appraisal Skills Programme (CASP). CASP case control study checklist [Internet]. Oxford, UK: CASP; 2013 [updated 2013 May 31; cited 2015 May 14]. Available

from: http://media.wix.com/ugd/dded87_63fb65dd4e0548e2bfd0a982295f839e.pdf

Critical Appraisal Skills Programme(CASP). CASP economic evaluation studies checklist [Internet]. Oxford, UK: CASP; 2013 [updated 2013 May 31; cited 2015 May 14]. Available

from: http://media.wix.com/ugd/dded87_3b2bd5743feb4b1aaac6ebdd68771d3f.pdf

Crombie IK,. The pocket guide to critical appraisal: a handbook for health care professionals. London, UK: BMJ; 2008.

Crowe M, Sheppard L. A review of critical appraisal tools show they lack rigor: alternative tool structure is proposed. J Clin Epidemiol. 2011;64(1):79-89.

Des Jarlais DC, Lyles C, Crepaz N, TREND Group. Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: the TREND statement. Am J Public Health. 2004;94(3):361-6. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1448256/

Dicenso A, Bayley L, Haynes RB. Accessing pre-appraised evidence: fine-tuning the 5S model into a 6S model. Evid Based Nurs. 2009;12(4):99-101.

European Centre for Disease Prevention and Control. Evidence-based methodologies for public health: how to assess the best available evidence when time is limited and there is a lack of sound evidence. Stockholm: European Centre for Disease Prevention and Control; 2011. Available from: http://ecdc.europa.eu/en/publications/Publications/1109 TER evidence based methods for public health.pdf

Gugiu PC, Gugiu MR. A critical appraisal of standard guidelines for grading levels of evidence. Eval Health Prof. 2010;33(3):233-55.

Hannes K, Lockwood C, Pearson A. A comparative analysis of three online appraisal instruments' ability to assess validity in qualitative research. Qual Health Res. 2010;20(12):1736-43.

Health Evidence. Quality assessment tool - review articles [Internet]. Hamilton, ON: Health Evidence; 2013 [cited 2015 May 14]. Available from: http://www.healthevidence.org/documents/our-appraisal-tools/QA tool&dictionary 18.Mar.2013.pdf

Heller RF, Heller TD, Pattison S. Putting the public back into public health. Part II. How can public health be accountable to the public? Public Health. 2003;117(1):66-71.

Jeanfreau SG, Jack L,Jr. Appraising qualitative research in health education: guidelines for public health educators. Health Promot Pract. 2010;11(5):612-7. Available

from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3012622/

Johnson PI, Sutton P, Atchley DS, Koustas E, Lam J, Sen S, et al. The Navigation Guide - evidence-based medicine meets environmental health: systematic review of human evidence for PFOA effects on fetal growth. Environ Health Perspect. 2014;122(10):1028-39. Available

from: http://ehp.niehs.nih.gov/1307893/

Kahan B, Goodstadt M, editors. IDM best practices. [Internet]. Regina, SK: IDM Best Practices; cited 2015 May 14]. Available from: http://www.idmbestpractices.ca/idm.php?content=resources-assessev

Katrak P, Bialocerkowski AE, Massy-Westropp N, Kumar S, Grimmer KA. A systematic review of the content of critical appraisal tools. BMC Med Res Methodol. 2004;4:22. Available from: http://www.biomedcentral.com/1471-2288/4/22

Lang S, Kleijnen J. Quality assessment tools for observational studies: lack of consensus. Int J Evid Based Healthc. 2010;8(4):247.

Loney PL, Chambers LW, Bennett KJ, Roberts JG, Stratford PW. Critical appraisal of the health research literature: prevalence or incidence of a health problem. Chronic Dis Can. 1998;19(4):170-6. Available from: http://www.collectionscanada.gc.ca/webarchives/20071212045422/http://www.phac-aspc.gc.ca/publicat/cdic-mcc/19-4/e_e.html

Long A. Evaluation tool for mixed methods studies [Internet]. Manchester, UK: University of Salford; 2005 Available from: http://usir.salford.ac.uk/13070/1/Evaluative Tool for Mixed Method Studies.pdf

Ontario Public Health Libraries Association (OPHLA). Critical appraisal of research evidence: a guide from the Ontario Public Health Libraries Association [Internet]. Toronto, ON: OPHLA; 2014 [cited 2015 May 5]. Available from:http://www.ophla.ca/pdf/CriticalAppraisalResearchEvidenceApril2014.pdf

Rychetnik L, Frommer M. A schema for evaluating evidence on public health interventions. Version 4 [Internet]. Melbourne, AU: National Public Health Partnership; 2002 [cited 2015 May 14]. Available from: http://www.nphp.gov.au/publications/phpractice/schemaV4.pdf

Schulz KF, Altman DG, Moher D, CONSORT Group. CONSORT 2010 statement: updated guidelines for reporting parallel group randomised trials. PLoS Med. 2010;7(3):e1000251. Available from: http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000251

Shamliyan T, Kane RL, Dickinson S. A systematic review of tools used to assess the quality of observational studies that examine incidence or prevalence and risk factors for diseases. J Clin Epidemiol. 2010;63(10):1061-70. Available from:

http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000251

Shea BJ, Grimshaw JM, Wells GA, Boers M, Andersson N, Hamel C, et al. Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. BMC Med Res Methodol. 2007;7:10. Available from: http://www.biomedcentral.com/1471-2288/7/10

Sirriyeh R, Lawton R, Gardner P, Armitage G. Reviewing studies with diverse designs: the development and evaluation of a new tool. J Eval Clin Pract. 2012;18(4):746-52.

Sterne J, Higgins J, Reeves B, on behalf of the development group for ACROBAT- NRSI. A Cochrane risk of bias assessment tool: for non-randomized studies of interventions (ACROBAT- NRSI), Version 1.0.0 [Internet]. London, UK: The Cochrane Collaboration; 2014 [cited 2015 Jun 19]. Available from: https://53e94a67-a-62cb3a1a-s-sites.googlegroups.com/site/riskofbiastool/ACROBAT-NRSI%20Version%201_0_0.pdf?

Stetler CB, Damschroder LJ, Helfrich CD, Hagedorn HJ. A guide for applying a revised version of the PARIHS framework for implementation. Implement Sci. 2011;6:99,5908-6-99. Available from: http://www.implementationscience.com/content/6/1/99

SUNY Downstate Medical Center. Guide to research methods: the evidence pyramid. [Internet]. New York: Medical Research Library of Brooklyn; c2014 [updated 2004 Jan 6; cited 2015 May 14]. Available from: http://library.downstate.edu/EBM2/2100.htm

Vlayen J, Aertgeerts B, Hannes K, Sermeus W, Ramaekers D. A systematic review of appraisal tools for clinical practice guidelines: multiple similarities and one common deficit. Int J Qual Health Care. 2005;17(3):235-42. Available from: http://intqhc.oxfordjournals.org/content/17/3/235.long

Woodruff TJ, Sutton P, Navigation Guide Work Group. An evidence-based medicine methodology to bridge the gap between clinical and environmental health sciences. Health Aff (Millwood). 2011;30(5):931-7. Available from: http://content.healthaffairs.org/content/30/5/931.long

Zaza S, Wright-De Aguero LK, Briss PA, Truman BI, Hopkins DP, Hennessy MH, et al. Data collection instrument and procedure for systematic reviews in the Guide to Community Preventive Services. Task Force on Community Preventive Services. Am J Prev Med. 2000;18(1 Suppl):44-74.