

Supplementary material

Table 1. Literature review of PubMed keyword searches and results yield for qualitative and mixed methods research

Qualitative literature review	
Keyword search combinations	Results yield (n)
("qualitative research"[ti] OR "qualitative inquiry"[ti] OR "qualitative methods"[ti] OR "qualitative standards"[ti]) AND ("checklist"[tw] OR "checklists"[tw] OR "standards"[tw] OR "critical appraisal"[tw]) AND (Journal Article[ptyp] AND ("1990/01/01"[PDAT] : "3000/12/31"[PDAT]) AND English[lang]) AND (("1990/01/01"[PDat] : "3000/12/31"[PDat]) AND English[lang])	327
("Health Services Research/methods"[Mesh]) AND "Qualitative Research"[Mesh] AND (Journal Article[ptyp] AND English[lang])	274
("Focus Groups/methods"[Majr]) OR "Interviews as Topic/methods"[Majr] "qualitative"[tw] AND (("1990/01/01"[PDat] : "3000/12/31"[PDat]) AND English[lang])	302
Research Design/standards*"Qualitative Research"[Mesh] AND (("1990/01/01"[PDat] : "3000/12/31"[PDat]) AND English[lang])	167

Mixed methods literature review	
Keyword search combinations	Results yield (n)
"Research Design/standards"[Mesh] AND ("mixed method*"[tw] OR "mixed method* research"[All Fields] OR "mixed research"[tw] OR "multimethod*"[tw] OR "multi method*"[tw]) AND (("1990/01/01"[PDAT] : "3000/12/31"[PDAT]) AND English[lang])	10

<p>("Health Services Research/methods"[Mesh]) AND ("mixed method*"[tw] OR "mixed method* research"[All Fields] OR "mixed research"[tw] OR "multimethod*"[tw] OR "multi method*"[tw]) AND (("1990/01/01"[PDat] : "3000/12/31"[PDat]) AND English[lang])</p>	64
<p>"mixed method*"[ti] OR "mixed method* research"[ti] OR "mixed research"[ti] OR "multimethod*"[ti] OR "multi method*"[ti] AND ("checklist"[tw] OR "checklists"[tw] OR "standards"[tw] OR "critical appraisal"[tw]) AND (Journal Article[ptyp])</p>	152
<p>"mixed method*"[ti] OR "mixed method* research"[ti] OR "mixed research"[ti] OR "multimethod*"[ti] OR "multi method*"[ti] AND (Journal Article[ptyp] AND ("1990/01/01"[PDat] : "3000/12/31"[PDat]) AND English[lang]) AND (Journal Article[ptyp] AND "last 10 years"[PDat] AND English[lang] AND medline[sb])</p>	637

Table 2. Articles used to guide standards development.

	Article Citation
1	Baillie L. Promoting and evaluating scientific rigour in qualitative research. <i>Nurs Stand.</i> 2015;29(46):36-42.
2	Barbour R. Mixing Qualitative Methods: Quality Assurance or Qualitative Quagmire? <i>Qualitative Health Research.</i> 1998;352-361.
3	Barbour RS. Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? <i>BMJ.</i> 2001;321:1115-1117.
4	Barbour RS. The case for combining qualitative and quantitative approaches in health services research. <i>Journal of Health Services Research & Policy.</i> 1999;4(1):39-43.
5	Burns, N. Standards for Qualitative Research. <i>Nurs Sci Q.</i> 1989 Spring;2(1):44-52.

6	Calman L, Brunton L, Molassiotis A. Developing longitudinal qualitative designs: lessons learned and recommendations for health services research. <i>BMC Medical Research Methodology</i> . 2013;13:14.
7	Carlsen B, Glenton C. What about N? A methodological study of sample-size reporting in focus group studies. <i>BMC Medical Research Methodology</i> . 2011;11:26.
8	Cesario S, Morin K, Santa-Donato A. Evaluating the level of evidence of qualitative research. <i>JOGNN</i> . 2002;31:708-714.
9	Cohen DJ, Crabtree BF. Evaluation criteria for qualitative research in health care: controversies and recommendations. <i>Annals of Family Medicine</i> . 2008;6(4):331-339.
10	Collingridge D, Gantt EE. The quality of qualitative research. <i>Am J Med Qual</i> . 2008;23(5):389-395.
11	Cooper C, O'Cathain A, Hind D, et al. Conducting Qualitative research in clinical trial units: Avoiding Potential Pitfalls. <i>Contemporary Clinical Trials</i> . 2014;38:338-343.
12	Cunningham PJ, Felland LE, Ginsburg PB, Pham HH. Qualitative methods: A crucial Tool for Understanding changes in health systems and health care delivery. <i>Medical Care Research and Review</i> . 2011;68(1):34-40.
13	Curry L, Krumholz HM, O'Cathain A, Plano Clark VL, Cherlin E, Bradley EH. Mixed Methods in Biomedical and Health Services Research. <i>Circulation Cardiovascular quality and outcomes</i> . 2013;6(1):119-123. doi:10.1161/CIRCOUTCOMES.112.967885.
14	Curry LA, Nembhard IM, Bradley EH. Qualitative and mixed methods provide unique contributions to outcomes research. <i>Circulation</i> . 2009 Mar 17;119(10):1442-52. doi: 10.1161/CIRCULATIONAHA.107.742775.
15	DiCicco-Bloom B, Crabtree BF. The qualitative research interview. <i>Medical Education</i> . 2006;40:314-321.
16	Dixon-Woods M, Shaw RL, Agarwal S, et al. The problem of appraising qualitative research. <i>Qual Saf Health Care</i> . 2004;13:223-225.

17	Fitzpatrick R, Boulton M. Qualitative Research in Health Care: 1. the Scope and Validity of Methods. <i>J Eval in Clinical Practice</i> . 1996;2(2):123-130.
18	Fossey et al, Understanding and Evaluating Qualitative Research. <i>Aust N Z J Psychiatry</i> . 2002 Dec;36(6):717-32
19	Golafshani N. Understanding reliability and validity in qualitative research. <i>The Qualitative Report</i> . 2003;8(4), 597-606.
20	Heyvaert M, Hannes K, Maes B, Onghena P. Critical appraisal of mixed methods studies. <i>Journal of Mixed Methods Research</i> . 2013;7(4):302-327
21	Horsburgh D. Evaluation of qualitative research. <i>Journal of Clinical Nursing</i> . 2003;12:307-312.
22	Hudson, Peter. Focus group interviews: a guide for palliative care researchers and clinicians. <i>International journal of palliative nursing</i> . 2003;9:202-7. 10.12968/ijpn.2003.9.5.11490.
23	Klopper H. The qualitative research proposal. <i>Curationis</i> . 2008;31(4):62-72.
24	Kuper A, Lingard L, Levinson W. Critically Appraising Qualitative Research. <i>BMJ</i> . 2008;337:687-692.
25	Lewis J. Redefining Qualitative Methods: Believability in the Fifth Moment. <i>Internation Journal of Qualitative Methods</i> .2009;8(2):1-14.
26	Lin, Li-Chen. Data Management and Security in Qualitative Research. <i>Dimensions of critical care nursing</i> . 2009;28:132-7. 10.1097/DCC.0b013e31819aeff6.
27	Malterud K. Qualitative research: standards, challenges, and guidelines. <i>Lancet</i> . 2001;358:483-488.
28	Mays N, Pope C. Qualitative research in health care: Assessing quality in qualitative research. <i>BMJ</i> . 2000;320:50-52.
29	McBrien, Barry. Evidence-based care: Enhancing the rigour of a qualitative study. <i>British journal of nursing</i> . 2008;17:1286-9. 10.12968/bjon.2008.17.20.31645.

30	Milne J, Oberle K. Enhancing rigor in qualitative description: a case study. <i>J Wound Ostomy Continence Nurs.</i> 2005 Nov-Dec;32(6):413-20. Review. PMID: 16301909
31	Morse J. A review committee's guide for evaluating qualitative proposals. <i>Qual Health Res.</i> 2003; 13(6):833-851.
32	Munn Z, Porritt K, Lockwood C, Aromataris E, Pearson A. Establishing confidence in the output of qualitative research synthesis: the ConQual approach. <i>BMC Medical Research Methodology.</i> 2014; 14:108.
33	O'Brien, Bridget & Harris, Ilene & Beckman, Thomas & A Reed, Darcy & A Cook, David. Standards for Reporting Qualitative Research: A Synthesis of Recommendations. <i>Academic medicine: Journal of the Association of American Medical Colleges.</i> 2014;89.
34	Ostlund U, Kidd L, Wengstrom Y, Rowa-Dewar N. Combining qualitative and quantitative research within mixed method research designs: A methodological review. <i>International Journal of Nursing Studies.</i> 2011;48:369-383.
35	Pearson A, Jordan Z, Lockwood Cr, Aromataris E. Notions of quality and standards for qualitative research reporting. <i>International Journal of Nursing Practice.</i> 2015;21:670-676.
36	Pickler RH. Evaluating Qualitative Research Studies. <i>Journal Pediatric Health Care.</i> 2007;21:195-197.
37	Popay J, Rogers A, Williams G. Rationale and standards for the systematic review of qualitative literature in health services research. <i>Qualitative Health Research.</i> 1998;8(3):341-351.
38	Pope C, Ziebland S, Mays N. Analysing qualitative data. <i>BMJ.</i> 2000;320(7227):114-116.
39	Powell, Richard & M. Single, Helen. Focus Groups. <i>International journal for quality in health care.</i> 1996;8:499-504.
40	Reid AJ. What we want: qualitative research. Promising frontier for family medicine. <i>Canadian Family Physician.</i> 1996;42:387-389.

41	Sandelowski M. A matter of taste: evaluating the quality of qualitative research. <i>Nursing Inquiry</i> . 2015;22(2):86-94.
42	Sandelowski M. One is the Liveliest Number: The Case Orientation of Qualitative Research. <i>Research in Nursing & Health</i> . 1996;19:525-529.
43	Schou, L, Hostrup H, Lyngso EE, Larsen S, Poulsen I. Validation of a new assessment tool for qualitative research articles. <i>Journal of Advanced Nursing</i> . 2011;68(9):2086-2094.
44	Stige B, Malterud K, Midtgarden T. Toward an agenda for evaluation of qualitative research. <i>Qualitative Health Research</i> . 2009;19(10):1504-1516.
45	Stige, Brynjulf & Malterud, Kirsti & Midtgarden, Torjus. Toward an Agenda for Evaluation of Qualitative Research. <i>Qualitative health research</i> . 2009;19:1504-16.
46	The Guidelines Manual - Appendix 1: Methodology checklist: qualitative studies. <i>National Institute for Health and Clinical Excellence</i> . January 2009;208-266.
47	Tong A, Dew MA. Qualitative Research in Transplantation: Ensuring Relevance and Rigor. <i>Transplantation</i> . 2016;100(4):710-712.
48	Tong A, Flemming K, McInnes E, Oliver S, and Craig J. Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. <i>BMC Medical Research Methodology</i> . 2012;12:181.
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51	Tuckett A. Qualitative research sampling: the very real complexities. <i>Nurse Res</i> . 2004;12(1):47-61.
52	Tuckett AG. Part II. Rigour in qualitative research: complexities and solutions. <i>Nurse Researcher</i> . 2005;13(1):29-42.

53	Watkins D. Qualitative research: the importance of conducting research that doesn't "count". <i>Health Promot Pract.</i> 2012;13(2):153-158.
54	Weiner BJ, Amick HR, Lund JL, Lee SYD, Hoff TJ. Use of qualitative methods in published health services and management research: 10 year review. <i>Medical Care Research and Review.</i> 2011;68(1):3-33.
55	Wisdom JP, Cavaleri MA, Onwuegbuzie AJ, Green CA. Methodological Reporting in Qualitative, Quantitative, and Mixed Methods health services research articles. <i>Health Services Research.</i> 2012; 47(2):721-745.
56	Woods, Leslie & Priest, Helena & Roberts, Paula. An overview of three different approaches to the interpretation of qualitative data. Part 2: Practical illustrations. <i>Nurse researcher.</i> 2002;10:43-51.

Table 3. Expert panel participants.

Panel Member	Institution	Methodologic Expertise	Field of Study
Frances K. Barg, PhD, Med	University of Pennsylvania	Qual/Mixed Methods	Medical Anthropologist
Benjamin F. Crabtree, PhD	Rutgers	Qual/Mixed Methods	Medical Anthropologist
Deborah Cohen, PhD	OHSU School of Medicine	Qualitative	Qualitative methods in primary care
Michael Feters, MD, MPH, MA	University of Michigan and co-editor for the Journal of Mixed Methods Research	Mixed Methods	Physician and MM expert

Suzanne Heurtin-Roberts, PhD, MSW	NCI	Qual/Mixed Methods	Medical Anthropologist and Social Worker
Deborah K. Padgett, PhD, MPH	NYU School of Social Work	Qual/Mixed methods	Professor and Social Worker
Janice Morse, PhD, RN, FAAN	University of Utah – editor of QHR	Qualitative	Anthropologist, Nurse, Professor
Lawrence A. Palinkas, PhD	USC School of Social Work	Mixed Methods	Medical Anthropologist
Vicki L. Plano Clark, PhD	University of Cincinnati	Mixed Methods	Methodologist
Catherine Pope, PhD.	University of Southampton	Qualitative	Medical Sociologist