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| **Evidence level and quality rating:** |  |
| Article title: | Number: |
| Author(s): | Publication date: |
| Journal: | |
| Setting: | Sample (composition and size): |
| Does this evidence address my EBP question?  Yes  No-*Do not proceed with appraisal of this evidence* | |
| **Is this study:**  **QuaNtitative** (collection, analysis, and reporting of numerical data) Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis.  Go to ***Section I: QuaNtitative***  **QuaLitative** (collection, analysis, and reporting of narrative data)  Rich narrative documents are used for uncovering themes; describes a problem or condition from the point of view of those experiencing it. Common methods are focus groups, individual interviews (unstructured or semi structured), and participation/observations. Sample sizes are small and are determined when data saturation is achieved. Data saturation is reached when the researcher identifies that no new themes emerge and redundancy is occurring. Synthesis is used in data analysis. Often a starting point for studies when little research exists; may use results to design empirical studies. The researcher describes, analyzes, and interprets reports, descriptions, and observations from participants.  Go to ***Section II: QuaLitative***  **Mixed methods (**results reported both numerically and narratively)  Both quaNtitative and quaLitative methods are used in the study design. Using both approaches, in combination, provides a better understanding of research problems than using either approach alone. Sample sizes vary based on methods used. Data collection involves collecting and analyzing both quaNtitative and quaLitative data in a single study or series of studies. Interpretation is continual and can influence stages in the research process.  Go to ***Section III: Mixed Methods*** | |

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| ***Section I: QuaNtitative*** | | |
| **Level of Evidence (Study Design)** | | |
| Is this a report of a single research study?  **A** | * Yes | * No **Go to B** |
| 1. Was there manipulation of an independent variable? | * Yes | * No |
| 2. Was there a control group? | * Yes | * No |
| 3. Were study participants randomly assigned to the intervention and control groups? | * Yes | * No |
| If **Yes to questions 1, 2, and 3,** this is a randomized controlled trial (RCT) or experimental study. | | **LEVEL I** |
| If **Yes to questions 1 and 2 and No to question 3**or**Yes to question 1 and No to questions 2 and 3,** this is quasi-experimental. *(Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, and may have a control group).* | | **LEVEL II** |
| If **No to questions 1, 2, and 3,** this is nonexperimental. *(No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).* | | **LEVEL III** |
| Study Findings That Help Answer the EBP Question | | |
| **Skip** to the **Appraisal of QuaNtitative Research Studies** section | | |

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| *Section I: QuaNtitative (continued)* | | |
| Is this a summary of multiple sources of research evidence? | * Yes *Continue* | * No **Use Appendix F** |
| 1. Does it employ a comprehensive search strategy and rigorous appraisal method?  *If this study includes research, nonresearch, and experiential evidence, it is an integrative review (see Appendix F).* | * Yes *Continue* | * No **Use Appendix F** |
| 2. For systematic reviews and systematic reviews with meta-analysis (see descriptions below):  **B** | | |
| 1. Are all studies included RCTs? | | **LEVEL I** |
| 1. Are the studies a combination of RCTs and quasi-experimental, or quasi-experimental only? | | **LEVEL II** |
| 1. Are the studies a combination of RCTs, quasi-experimental, and nonexperimental, or non- experimental only? | | **LEVEL III** |
| A **systematic review** employs a search strategy and a rigorous appraisal method, but does not generate an effect size.  A **meta-analysis**, or systematic review with meta-analysis, combines and analyzes results from studies to generate a new statistic: the effect size. | | |
| Study Findings That Help Answer the EBP Question | | |
| **Skip** to the **Appraisal of Systematic Review** (With or Without a Meta-Analysis) section | | |

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| **Appraisal of QuaNtitative Research Studies** | | | |
| Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge? | * Yes | * No |  |
| Was the purpose of the study clearly presented? | * Yes | * No |  |
| Was the literature review current (most sources within the past five years or a seminal study)? | * Yes | * No |  |
| Was sample size sufficient based on study design and rationale? | * Yes | * No |  |
| If there is a control group:   * Were the characteristics and/or demographics similar in both the control and intervention groups? | * Yes | * No | N/A |
| * If multiple settings were used, were the settings similar? | * Yes | * No | N/A |
| * Were all groups equally treated except for the intervention group(s)? | * Yes | * No | N/A |
| Are data collection methods described clearly? | * Yes | * No |  |
| Were the instruments reliable (Cronbach’s[alpha] > 0.70)? | * Yes | * No | N/A |
| Was instrument validity discussed? | * Yes | * No | N/A |
| If surveys or questionnaires were used, was the response  rate > 25%? | * Yes | * No | N/A |
| Were the results presented clearly? | * Yes | * No |  |
| If tables were presented, was the narrative consistent with the table content? | * Yes | * No | N/A |
| Were study limitations identified and addressed? | * Yes | * No |  |
| Were conclusions based on results? | * Yes | * No |  |
| **Complete** the**Quality Rating for QuaNtitative Studies**section | | | |

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| **Appraisal of Systematic Review (With or Without Meta-Analysis)** | | |
| Were the variables of interest clearly identified? | * Yes | * No |
| Was the search comprehensive and reproducible?   * Key search terms stated | * Yes | * No |
| * Multiple databases searched and identified | * Yes | * No |
| * Inclusion and exclusion criteria stated | * Yes | * No |
| Was there a flow diagram that included the number of studies eliminated at each level of review? | * Yes | * No |
| Were details of included studies presented (design, sample, methods, results, outcomes, strengths, and limitations)? | * Yes | * No |
| Were methods for appraising the strength of evidence (level and quality) described? | * Yes | * No |
| Were conclusions based on results? | * Yes | * No |
| * Results were interpreted | * Yes | * No |
| * Conclusions flowed logically from the interpretation and systematic review question | * Yes | * No |
| Did the systematic review include a section addressing limitations **and**how they were addressed? | * Yes | * No |
| **Complete** the**Quality Rating for QuaNtitative Studies** section (below) | | |

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| **Quality Rating for QuaNtitative Studies** |
| Circle the appropriate quality rating below:  **A High quality**: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence.  **B Good quality**: Reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence.  **C Low quality or major flaws**: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn. |

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| *Section II: QuaLitative* | | |
| **Level of Evidence (Study Design)** | | |
| **A**  Is this a report of a single research study? | * Yes **this is Level III** | * No **go to II B** |
| Study Findings That Help Answer the EBP Question | | |
| **Complete** the**Appraisal of Single QuaLitative Research Study**section(below) | | |

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| **Appraisal of a Single QuaLitative Research Study** | | |
| Was there a clearly identifiable and articulated:   * Purpose? | * Yes | * No |
| * Researchquestion? | * Yes | * No |
| * Justificationformethod(s)used? | * Yes | * No |
| * Phenomenonthatisthefocusoftheresearch? | * Yes | * No |
| Were study sample participants representative? | * Yes | * No |
| Did they have knowledge of or experience with the research area? | * Yes | * No |
| Were participant characteristics described? | * Yes | * No |
| Was sampling adequate, as evidenced by achieving saturation of data? | * Yes | * No |
| Data analysis:   * Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis and interpretation? | * Yes | * No |
| * Was there a description of how data were analyzed (i.e., method), by computer or manually? | * Yes | * No |
| Do findings support the narrative data (quotes)? | * Yes | * No |
| Do findings flow from research question to data collected to analysis undertaken? | * Yes | * No |
| Are conclusions clearly explained? | * Yes | * No |
| **Skip** to the**Quality Rating for QuaLitative Studies**section | | |

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| ForsummariesofmultiplequaLitativeresearchstudies(meta-synthesis), wasacomprehensivesearchstrategyandrigorousappraisalmethodused?  **B** | * Yes **Level III** | * No go to **Appendix F** |
| Study Findings That Help Answer the EBP Question | | |
| **Complete** the **Appraisal of Meta-Synthesis Studies** section (below) | | |

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| **Appraisal of Meta-Synthesis Studies** | | |
| Were the search strategy and criteria for selecting primary studies clearly defined? | * Yes | * No |
| Were findings appropriate and convincing? | * Yes | * No |
| Was a description of methods used to:   * Compare findings from each study? | * Yes | * No |
| * Interpret data? | * Yes | * No |
| Did synthesis reflect: | * Yes | * No |
| * New insights? | * Yes | * No |
| * Discovery of essential features of phenomena? | * Yes | * No |
| * A fuller understanding of the phenomena? | * Yes | * No |
| Was sufficient data presented to support the interpretations? | * Yes | * No |
| **Complete** the **Quality Rating for QuaLititative Studies** section (below) | | |

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| **Quality Rating for QuaLitative Studies** |
| Circle the appropriate quality rating below:  No commonly agreed-on principles exist for judging the quality of quaLitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers’ efforts to meet the appraisal criteria.  *For meta-synthesis, there is preliminary agreement that quality assessments should be made before synthesis to screen out poor-quality studies1.*  **A/B High/Good quality** is used for single studies and meta-syntheses2.  The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry.  Evidence of some or all of the following is found in the report:   * **Transparency**: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. * **Diligence**: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. * **Verification**: The process of checking, confirming, and ensuring methodologic coherence. * **Self-reflection and self-scrutiny**: Being continuously aware of how a researcher’s experiences, background, or prejudices might shape and bias analysis and interpretations. * **Participant-driven inquiry**: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. * **Insightful interpretation**: Data and knowledge are linked in meaningful ways to relevant literature.   **CLower-quality** studies contribute little to the overall review of findings and have few, if any, of the features listed for High/Good quality. |

*1* [*https://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/6\_4\_ASSESSMENT\_OF\_QUALIT*](http://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/6_4_ASSESSMENT_OF_QUALITATIVE_RESEARCH.htm)*A*[*TIVE\_RESEARCH.htm*](http://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/6_4_ASSESSMENT_OF_QUALITATIVE_RESEARCH.htm) *2 Adapted from Polit & Beck (2017).*

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| *Section III: Mixed Methods* | | |
| **Level of Evidence (Study Design)** | | |
| You will need to appraise both the quaNtitative and quaLitative parts of the study independently, before appraising the study in its entirety. | | |
| 1. Evaluate the quaNitative part of the study using **Section I**. | **Level** | **Quality** |
| Insert here the level of evidence and overall quality for this part: |  |  |
| 1. Evaluate the quaLitative part of the study using **Section II**. | **Level** | **Quality** |
| Insert here the level of evidence and overall quality for this part: |  |  |
| 1. To determine the level of evidence, circle the appropriate study design: | | |
| * **Explanatory** sequential designs collect quaNtitative data first, followed by the quaLitative data; and their purpose is to explain quaNtitative results using quaLitative findings. The level is determined based on the level of the quaNtitative part. * **Exploratory** sequential designs collect quaLitative data first, followed by the quaNtitative data; and their purpose is to explain quaLitative findings using the quaNtitative results. The level is determined based on the level of the quaLitative part, and it is always Level III. * **Convergent** parallel designs collect the quaLitative and quaNtitative data concurrently for the purpose of providing a more complete understanding of a phenomenon by merging both datasets. These designs are Level III. * **Multiphasic** designs collect quaLitative and quaNtitative data over more than one phase, with each phase informing the next phase. These designs are Level III. | | |
| Study Findings That Help Answer the EBP Question | | |
| **Complete** the **Appraisal of Mixed Methods Studies**section (below) | | |

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| **Appraisal of Mixed Methods Studies**3 | | | |
| Wasthemixed-methodsresearchdesignrelevanttoaddressthe quaNtitative and quaLitative research questions (orobjectives)? | * Yes | * No | * N/A |
| WastheresearchdesignrelevanttoaddressthequaNtitativeand quaLitative aspects of the mixed-methods question (orobjective)? | * Yes | * No | * N/A |
| Forconvergentparalleldesigns,wastheintegrationofquaNtitative andquaLitativedata(orresults)relevanttoaddresstheresearch question orobjective? | * Yes | * No | * N/A |
| For convergent parallel designs, were the limitations associated withtheintegration(forexample,thedivergenceofquaLitativeand quaNtitative data or results) sufficientlyaddressed? | * Yes | * No | * N/A |
| **Complete** the**Quality Rating for Mixed-Method Studies** section (below) | | | |

*3 National Collaborating Centre for Methods and Tools. (2015). Appraising Qualitative, Quantitative, and Mixed Methods Studies included in Mixed Studies Reviews: The MMAT. Hamilton, ON: McMaster University. (Updated 20 July, 2015) Retrieved from* [*http://www.nccmt.ca/*](http://www.nccmt.ca/)*resources/search/232*

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| **Quality Rating for Mixed-Methods Studies** |
| Circle the appropriate quality rating below  **A Highquality:**Containshigh-qualityquaNtitativeandquaLitativestudycomponents;highlyrelevant studydesign;relevantintegrationofdataorresults;andcarefulconsiderationofthelimitationsof thechosenapproach.  **B Goodquality:**Containsgood-qualityquaNtitativeandquaLitativestudycomponents;relevantstudy design;moderatelyrelevantintegrationofdataorresults;andsomediscussionoflimitationsof integration.  **CLow quality or major flaws:** Contains low quality quaNtitative and quaLitative study components; studydesignnotrelevanttoresearchquestionsorobjectives;poorlyintegrateddataorresults;and noconsiderationoflimitsofintegration. |