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Developing a Protocol for Systematic Synthesis within C2 Reviews:

Expanding the evidence for decisions in
education, social welfare and criminal justice

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Outline

- Highlight the context of qualitative synthesis within Cochrane and Campbell
- Present a protocol for systematic synthesis within C2's existing protocols and guidelines
- Explore methodological issues
- Provide a forum for discussion about the merits of systematic synthesis

The Emergence of Qualitative Synthesis

- In 1970's, meta-analysis emerged as a significant scientific advancement to increase the precision and power of research (Alderson, Green & Higgins, 2004)
- In 1993, The Cochrane Collaboration was founded
- In 1990's, EBP "...the conscientious and judicious use of current best evidence in making decisions about the care of individual patients....integrating individual clinical expertise with the best available external clinical evidence from systematic research" (Sackett, et al., 1996)

Context – Cochrane Collaboration

- In 1998, the Cochrane Qualitative Research Methods Group.
 - established to develop methods for the inclusion of findings from qualitative research.
- In 2008, A major revision of the Cochrane Handbook for Systematic Reviews of Interventions (Version 5.0.0)
 - Chapter 20: Qualitative research and Cochrane reviews
 - Jane Noyes, Jennie Popay, Alan Pearson, Karin Hannes and Andrew Booth on behalf of the Cochrane Qualitative Research Methods Group

Context – Cochrane Collaboration

- “Evidence from qualitative studies can play an important role in adding value to systematic reviews for policy, practice and consumer decision-making” (Cochrane Handbook, version 5.0.0)
- No template is currently in place to allow a Cochrane review solely of qualitative evidence.

Context – Campbell Collaboration

- In 2001, the Implementation Process Methods Group registered with the C2 Steering Group.
 - to explore the value of including qualitative research into systematic reviews
 - to develop and disseminate methods for including qualitative research into Cochrane and Campbell reviews
 - Not currently an active group
- No template is currently in place for qualitative synthesis within Campbell reviews of interventions
- No template currently in place for a Campbell review solely of qualitative evidence

Context – Campbell Collaboration

- In the context of a Campbell review, qualitative studies in the relevant field can
 - (a) contribute to the development of a more robust intervention by helping to define an intervention more precisely,
 - (b) assist in the choice of outcome measures and assist in the development of valid research questions
 - (c) help to understand heterogeneous results from studies of effect.

Context – Campbell Collaboration

- When a review contains descriptions of qualitative research relevant to the topic of interest, the reviewers should operationally describe the
 - (a) criteria for inclusion and exclusion of studies,
 - (b) methods used in primary research,
 - (c) criteria for determining independent findings
 - (d) characteristics of included studies

In the same detail as they do for quantitative research.

Context – Evidence Base Practice

- The discourse of qualitative research for EBP:
 - Qualitative research as a ‘credible source’
 - Qualitative research and EBP as a ‘valuable partnership’
 - Exploring the ‘role’ of qualitative research
 - Helping practitioners understand the contribution of qualitative research to EBP
 - Qualitative research: another voice in the EBP debate

Guidelines for the Preparation of Review Protocols (*Version 1.0 January 2001*)

The Debate about Qualitative Synthesis

- Against synthesis:

- Different philosophical assumptions of qualitative methods.
- The diversity of qualitative methods makes synthesis irrelevant.
- Three times removed from lived experience
- The contextual location of knowledge makes transferability undesirable and inappropriate

- In favor of synthesis:

- Research question dictates the design.
- Some shared meanings can emerge from multiple studies even though these meanings can change over time and remain connected to the context of the original studies
- Urgent need to develop a process for including qualitative research in scientific reviews

Qualitative Research

- To study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin 1994)
- Term ‘qualitative research’ includes vastly different disciplinary, philosophical, theoretical, social, and political commitments (Sandelowski & Barroso, 2003)

Qualitative Synthesis

- Qualitative research has traditionally been excluded from systematic reviews due in part to the methodological and epistemological challenges researchers confront when attempting to synthesize studies using this rich and diverse methodology
- Qualitative synthesis emerged in response to the undervaluation and underutilization of an enormous accumulation of qualitative studies (Sandelowski & Barroso, 2007)

Contribution of Qualitative Synthesis

- *Informing* by helping to define and refine the question thus allowing for maximum relevance
- *Enhancing* by synthesizing evidence from qualitative research identified whilst looking for evidence of effectiveness.
- *Extending* by addressing questions directly related to the effectiveness review;
- *Supplementing* by addressing questions other than effectiveness. (Popay. 2006a)

Qualitative Synthesis within C2 Reviews

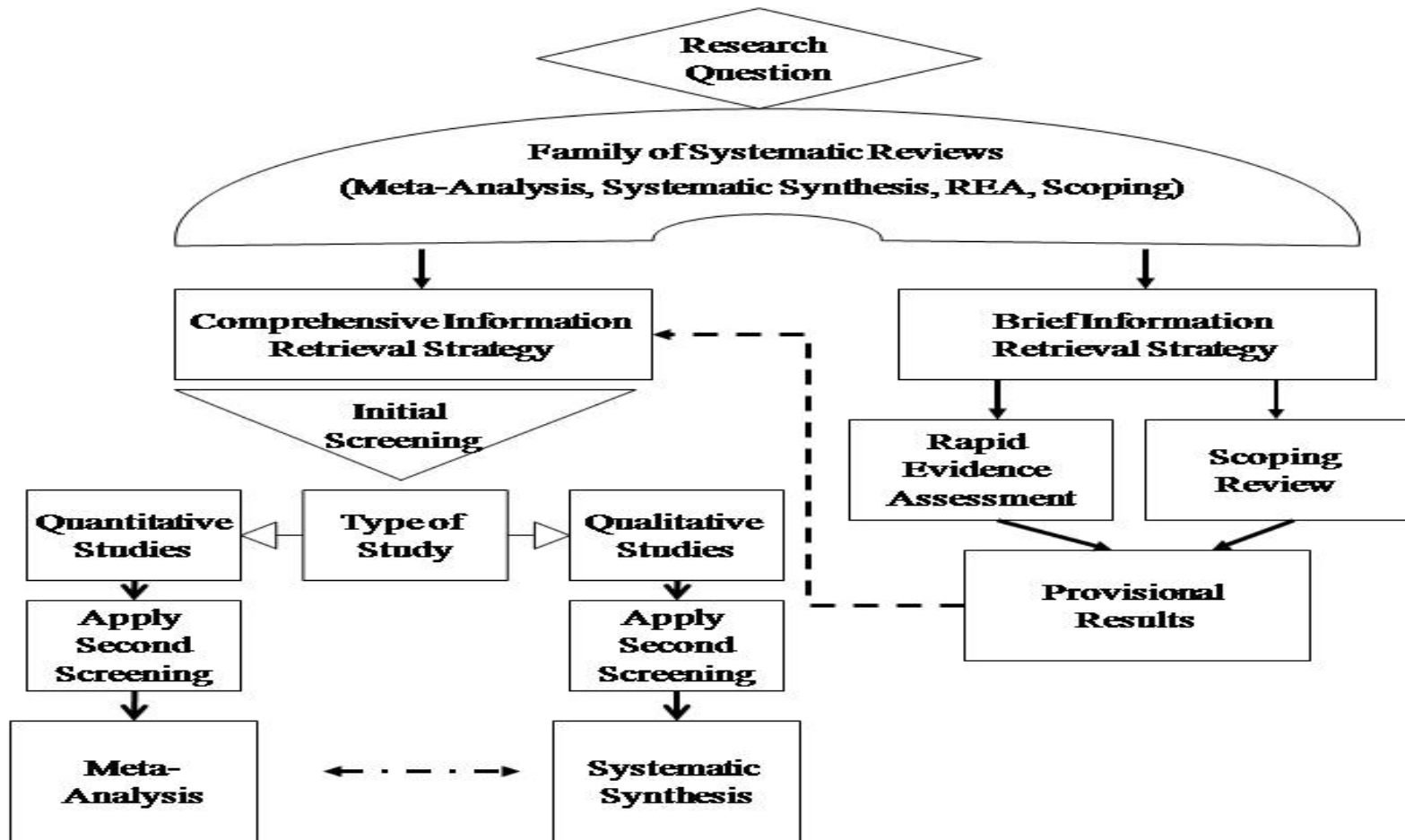
- Qualitative synthesis can augment a C2 review by providing:
 - In-depth understandings of the experiences and perceptions of people involved in interventions
 - Meaningful explorations of important issues related to implementation of an intervention
 - Add additional evidence to generate or refute hypotheses

Family of Systematic Reviews

- Qualitative synthesis can be seen as one of several review methods that are part of, or leading to, systematic reviews:
 - Meta-Analysis (MA)
 - Systematic Synthesis of Qualitative Research
 - Rapid Evidence Assessments (REA)
 - Scoping
 - Level of evidence reviews

Each has a unique method of answering research questions relevant to practitioners, researchers and policy-makers

The Family of Systematic Reviews



Methodological Considerations

- The Research Question
- Information Retrieval Strategy
- Screening Levels
- Critical Appraisal
- Synthesizing the Qualitative Evidence
- Choosing appropriate methods
- Stand alone vs mixed-method design

The Question

- Systematic reviews should address clearly defined questions
- A focused question provides the review with direction
- Usually the review questions address the population and the intervention / phenomenon and outcomes
- The components of the question determine what type of studies will be required to provide the appropriate answers

Types of Qualitative Questions

- How do people experience the identified outcomes?
- Why does an intervention work (or not), for whom and in what circumstances?
- What aspects of the intervention are valued (or not) and why this is so?
- What factors facilitate or hinder successful implementation of a programme, service or treatment?
- How can a particular intervention be adapted for large scale roll out? (Roen 2006)

Information Retrieval of Qualitative

- Recent debate on whether qualitative evidence syntheses share the need for comprehensive, exhaustive searches
- Some argue for a more purposive sampling approach to reach theoretical saturation and/or the identification of the disconfirming case' may be more appropriate (Dixon-Woods 2006)
- Need to improve quality of reporting standards of search methods (Booth 2006)

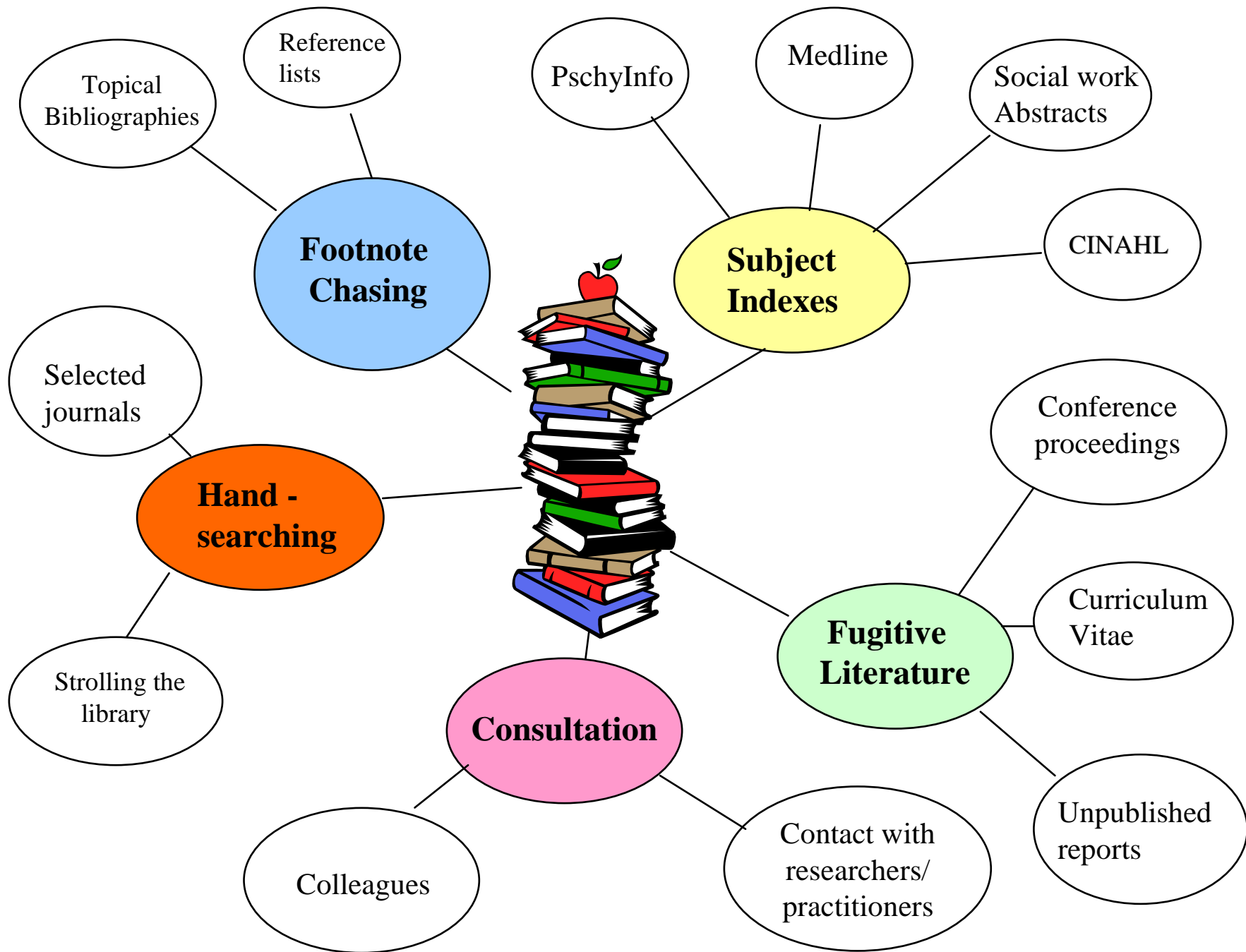
Qualitative MOLES

qualitative stud* or ethnograph* or phenomen* or ethnograph* or grounded theory or qualitative valid* or purposive sampl* or observational method* or content analys* or thematic analys* or constant comparative or field stud* or theoretical sampl* or discourse analys* or focus group* or (ethnolog* qualitative).tw or (ethnog*).tw or (phenomenol*).tw. or (grounded adj (theor* or study or studies or research)).tw. or (constant adj (comparative or comparison)).tw. or (purpos* adj sampl*4).tw. or (focus adj group*).tw. or (emic or etic or hermeneutic* or heuristic or semiotic*).tw. or (data adj1 saturat* or participant adj observ*).tw. or (heidegger* or colaizzi* or spiegelberg*).tw. or (van adj manen*).tw. or (van adj kaam*).tw. or (merleau adj ponty*).tw. or (husserl* or giorgi*).tw. or (field adj (study or studies or research)).tw. or (lived experience*).tw. or (narrative analysis).tw. or (discourse* adj analysis).tw. or (human science).tw. or (life experiences).tw. or (cluster sample).tw.

(adapted from http://www.urmc.rochester.edu/hslt/miner/digital_library/tip_sheets/cinahl_eb_filters.pdf)

Systematic Synthesis

- Using MOLES may be too limiting
- The term “systematic” is used to emphasize the systematic and comprehensive approach to literature searching.
- Balance between recall and precision
- Transparent process to provide accountability and clarification of decision points
- Use of screening levels to sift, sort and pass to the data synthesis stage of the review



Inclusion / Exclusion Criteria

- The inclusion criteria decides which studies should be (and not) included in the review
- A pre-developed inclusion criteria ensures transparency and a comprehensive process
- Inclusion of studies should move from liberal to strict screening based on set criteria at each stage of decision making

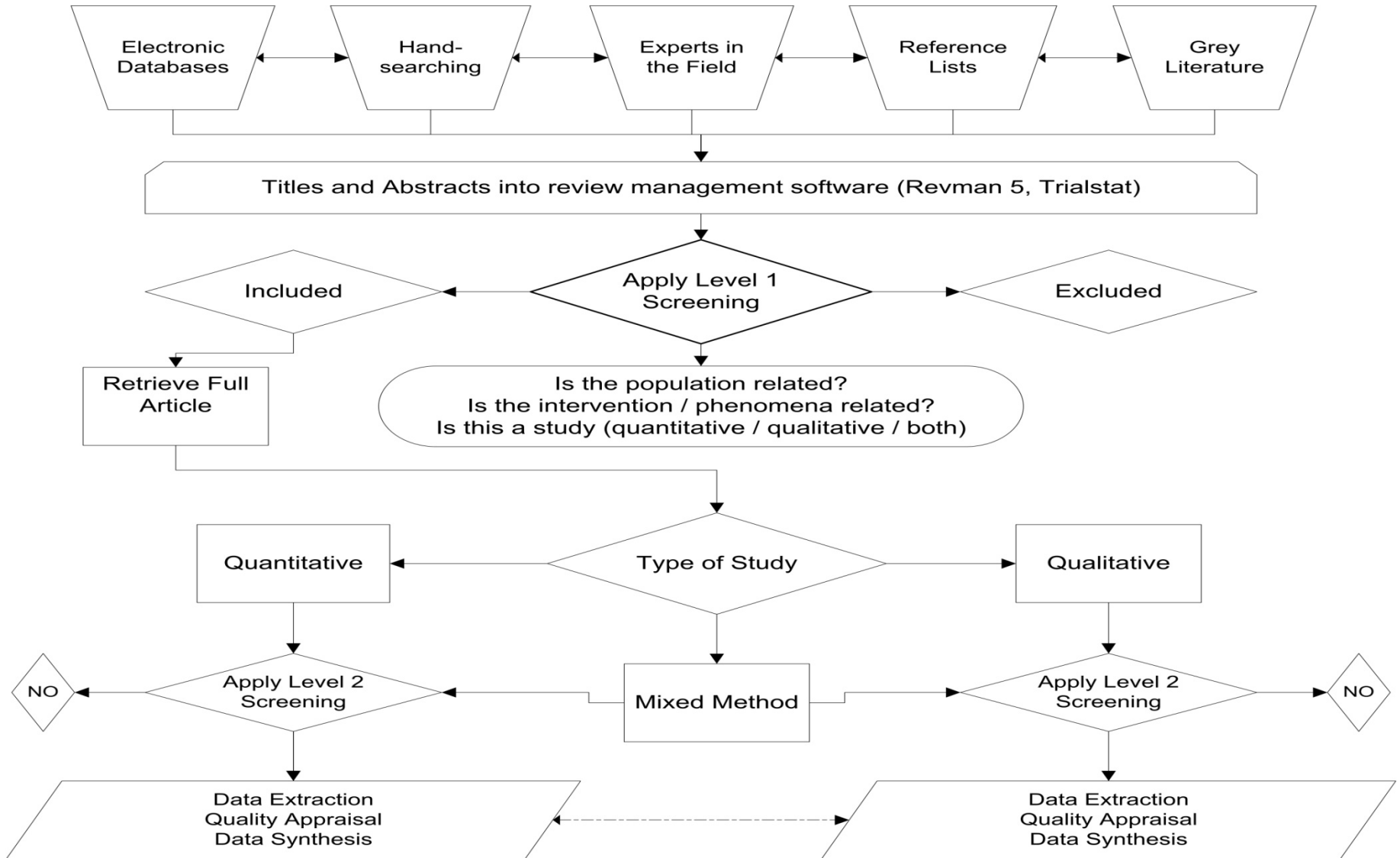
Screening for Study Selection

- An article should pass through various checkpoints to assess whether it should be included in the final review
- Establishing clear checkpoints allows multiple reviewers (at least 2) to score articles based on pre-existing criteria and these scores can be checked for inter-rater agreement
- The checkpoints are ‘levels’ where each level consists of increasing scrutiny of articles based on inclusion / exclusion criteria

Screening for Study Selection

- Level 1: An initial screen to quickly determine whether a study might be appropriate for the review based on the study's title and abstract
- Level 2: Reviewers are given full copies of articles to determine whether studies should remain in the review based on strict screening
- Level 3: Data extraction forms to log data from the articles that have made it past the two previous screenings

Qualitative Screening Levels



Critical Appraisal

- Over 100 quality appraisal forms to evaluate qualitative research.
- Discrepancies of how these tools attempt to appraise the quality of qualitative research.
- Many do not distinguish between different study designs, theoretical approaches, and standards for rigor, credibility and relevance.
- The majority of these appraisal tools have not themselves been systematically tested

QR2 Appraisal Form

- Quality and Rigor in Qualitative Research (QR2) Appraisal Form created based on:
 - an exhaustive search for existing assessment tools;
 - a review of the literature regarding the standards for measuring rigor, credibility, and relevance in qualitative designs.
 - consultations with local experts in the field of qualitative research.

QR2 Appraisal Form

- 28point quality appraisal tool to evaluate rigor, credibility, dependability, confirmability, transferability and relevance of qualitative studies.
- Additional 4-point scale to appraise authenticity, fairness, and promotion of justice when central purpose is to empower participants through participant action research.

QR2 Appraisal Form

- theoretical framework;
- study setting;
- study design;
- sampling procedures;
- data collection;
- ethical issues;
- reflexivity of the researcher;
- data analysis; and
- reporting of the findings.
- authenticity,
- fairness, and
- promotion of justice

QR2 Appraisal Form

- The appraisal consists of appreciation and evaluation (Sandelowski & Barossa, 2007)
- The appraisal form provides the opportunity to rate
 - availability of information to assess quality
 - applicability / relevance of that data
- The appraisal form also provides space for comments and reflections, which could then be integrated into the synthesis of information

Synthesizing Evidence

- It can be an aggregative or interpretive process
- Requires transparency of process
- Requires authors to identify and extract evidence from studies included in the review consistent with method chosen

Choosing An Appropriate Method

- Bayesian meta-analysis
- Critical interpretive synthesis
- Evidence for Policy and Practice Information and (EPPI) Coordinating Centre approach
- Joanna Briggs Institute (JBI) approach
- Meta-ethnography

- Meta-synthesis
- Meta-study
- Meta-summary
- Narrative synthesis
- Qualitative evidence synthesis
- Drawing on grounded theory
- Realist synthesis
- Secondary thematic analysis.

Choosing An Appropriate Method

TABLE 1: Metasynthesis Terminology

<i>Term</i>	<i>Comment</i>
Grounded formal theory	Inductive research approach that uses findings from substantive grounded theory studies to synthesize a new grounded formal theory (Kearney, 1998a).
Meta-analysis	Term frequently used to describe the statistical combining and analysis of results from multiple quantitative research studies (Egger & Smith, 1997). Because of the term's common association with quantitative methods and data aggregation versus interpretation, its use in relationship to qualitative metasynthesis is discouraged.
Metastudy	Inductive research approach involving the analysis and interpretation of theory, methods, and research findings across qualitative studies, and the synthesis of this work to formulate new interpretations.
Meta-data analysis	Analysis and interpretation of findings across multiple qualitative research reports.
Metamethod	Analysis and interpretation of methodological applications across multiple qualitative research reports.
Metatheory	Analysis and interpretation of theoretical, philosophical, and cognitive perspectives; sources and assumptions; and contexts across multiple qualitative studies (Paterson, Thorne, & Dewis, 2001).
Metasynthesis	Umbrella term referring to the synthesis of findings across multiple qualitative reports to create a new interpretation. Proposed types of metasyntheses include theory building, metastudy, grounded formal theory, theory explication, and descriptive study.

(Finfgeld, 2003)

Choosing An Appropriate Method

TABLE 1: Systematic Review of Research

	<i>Metastudy</i>	<i>Research Integration</i>
Focus	Studying studies	Studying findings
Primary data	Various elements in research reports	Findings in reports
Orientation to data	Discursive; reports as sociohistorical constructions	Empirical; findings as indices of target events
Method examples	Metatheory; metamethod; citation analysis; discourse analysis	Qualitative metasummary; qualitative metasynthesis; quantitative meta-analysis
Product examples	Critique; intellectual history	Evidence synthesis

Thorne et al., 2004

Metasummary

- Quantitative orientated aggregation of qualitative findings
- Discern the frequency of each finding
- Higher frequency of findings to claim the discovery of themes
- “Preponderance of evidence” (Thorne et al, 2004)

Metasynthesis

- Interpretive integration of qualitative findings
- More than summaries because they offer novel interpretation of findings
- Validity resides in the interpretive logic
- Findings are reframed and the final product exhibits craftsmanship

(Sandelowski & Barroso, 2007)

Metasynthesis

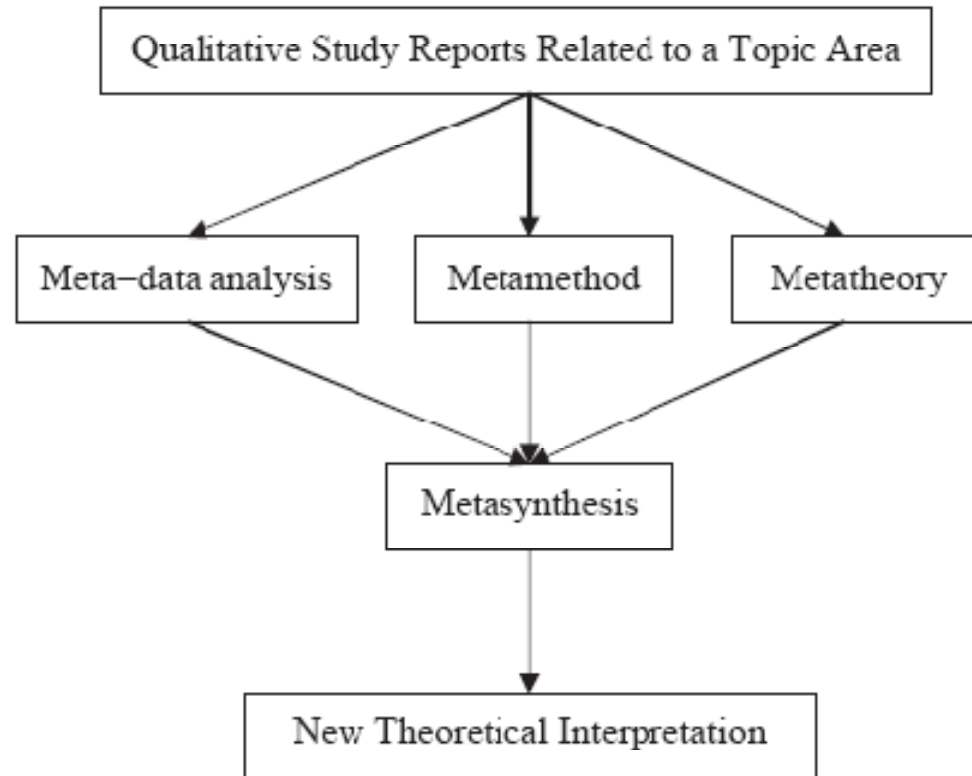


FIGURE 1: Metastudy Process

SOURCE: Adapted from Paterson, Thome, Canam, & Jillings (2001).

Mix-Method Design

- Multi-level syntheses: Qualitative evidence and quantitative can be conducted as separate streams, but then linking and combining to make a ‘third synthesis (Thomas 2004)
- Parallel syntheses: The qualitative synthesis can then be used in parallel and juxtaposed alongside to aid the interpretation of synthesized trials (Noyes 2007).

Discussion

- Accommodate systematic review methods to not violate the philosophical foundations or the integrity of the reports in the study (Sandelowski & Barroso, 2007)
- Be systematic, comprehensive and transparent
- Account for and clarify all decision points
- Adhere to created protocols for information retrieval and screening
- Be flexible and interpretive for data synthesis

Considerations for Qualitative Synthesis

- Does the team have the appropriate expertise or access to advice from experienced qualitative syntheses researchers?
- Will additional training be required?
- Will the budget cover the additional time and resources needed?

Considerations for Qualitative Synthesis

- Does the team have access to appropriate databases and journals?
- Does the team have access to an information specialist who is familiar with the particular challenges of retrieving qualitative research?
- Does the C2 sub-group responsible for the review support the incorporation of qualitative evidence and have the resources to support the review through the editorial process?