Evidence Synthesis Strategies To Enhance Evidence Based Practice Solutions

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OBJECTIVES

• 1) Describe the purpose of evidence synthesis
• 2) Differentiate synthesis from summarization
• 3) Identify forms of synthesized evidence
WHAT IS EVIDENCE SYNTHESIS?

• Grouping of ideas to form a new idea
• Deals with the gestalt
• Creates new knowledge
• Key Questions
  • What IS Known
  • What IS NOT Known
• More than summarizing
PURPOSE OF SYNTHESIS

• Uncover all the evidence
• Integrate empirical research to create generalizations
• Provide explicit and exhaustive reporting of the evidence and the methods used to synthesize the evidence
EVIDENCE SYNTEHSIS IS NOT A LITERATURE REVIEW

• Literature reviews may summarize, critique, and synthesize articles, but do not use systematic methodology.

• Evidence synthesis requires adherence to explicit and rigorous methods to identify, critically appraise, and synthesize ALL relevant literature.
SYNTHESEIS VS. SUMMARIZING

• To summarize is to express concisely
• To synthesize is to combine constituent elements into a single, unified entity
• To synthesize knowledge is to create new knowledge
FORMS OF SYNTHESIZED LITERATURE:

• Systematic Reviews
  • Meta-analysis
  • Meta-synthesis
• Evidence summaries
• Practice Guidelines
SYSTEMATIC REVIEW

• Different than a literature review
• Comprehensive
• Systematic
• 2 or more reviewers
• Peer-reviewed

• Recognized Systematic Review Entities:
  • Joanna Briggs Institute: Roots in Nursing & Allied Health
  • Cochrane Collaboration: Roots in Medicine
  • Campbell Collaboration: Roots in Education, Criminal Justice, and Social Sciences
CHARACTERISTICS OF A SYSTEMATIC REVIEW

- Clearly stated set of objectives with pre-defined eligibility criteria for evidence
- Explicit, reproducible methodology
- Systematic search that attempts to identify all evidence that would meet the eligibility criteria
- Assessment of the validity of the findings of the included evidence
- Systematic presentation, and synthesis, of the characteristics and findings of the included evidence
STEPS IN A COMPREHENSIVE SYSTEMATIC REVIEW

• Formulate review question
• Define inclusion and exclusion criteria
• Locate evidence
• Select evidence
• Critique evidence quality
• Extract data from evidence of highest available quality
• Analysis/summary and synthesis of relevant evidence
• Present results
• Interpret results/determining the applicability of results to practice
META-ANALYSIS

• Statistical combining of results of similar but distinct studies
• Provides more precise calculation of effect than can be achieved by an individual study
• Only forms part of a systematic review
• Not all systematic reviews contain a meta-analysis
• Some systematic reviews will have multiple meta-analyses
• Typically deal with questions of effectiveness
• Must deal with heterogeneity
META-SYNTHESIS

• Combining of results of multiple qualitative studies
• Allows pooling of themes, opinions, experiences
• Typically used to address questions of meaningfulness, feasibility, and/or appropriateness
• Use qualitative methods to combining finds of independent qualitative studies
• Not all systematic reviews contain a meta-synthesis
• Some systematic reviews will have multiple meta-syntheses
• Must assure you are comparing apples to apples
EVIDENCE SUMMARY

• Summary of the evidence vs. evidence summary
• Summary of evidence is simply a concise statement of evidence
• True evidence summary is like “Cliff Notes” version of a systematic review
• Contains recommendations and details needed to judge quality of synthesis without the full text of the systematic review
PRACTICE GUIDELINES

• Easy to read/use consolidation of research findings
• Devised on basis of current evidence
• Useful tool to direct practice
• Include relevant process and outcome measures
• Often contain algorithm or decision tree
• Components
  • Identity of developer(s)
  • Methods used to generate guideline
  • Recommendations
  • Levels of evidence used to generate recommendations
  • Limitations
  • Disclaimer (not substitute for critical thinking or sound judgment)
PRACTICE GUIDELINE ISSUES

• Not all are created equal
• Judgment must be made about quality of the guideline
• Only as useful as the clinician using the guideline
• Can result in problematic generalizations
• May contain bias and/or conflicts of interest
TOOLS TO JUDGE QUALITY OF SYNTHESIZED EVIDENCE

• SYSTEMATIC REVIEWS
  • PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)
    http://www.prisma-statement.org/
  • Institute of Medicine Standards for Systematic Reviews
TOOLS TO JUDGE QUALITY OF SYNTHESIZED EVIDENCE

• PRACTICE GUIDELINES
  • AGREE (Appraisal of Guidelines for Research and Evaluation) Instrument: evaluates the process of guideline development and the quality of reporting
    http://www.agreetrust.org/
  • Institute of Medicine Clinical Practice Guidelines We Can Trust
CONCLUSION

• Synthesized evidence has a purpose of guiding practice, education, and research
• Synthesized evidence is distinct from a summary of evidence
• No one piece of evidence will provide all the answers
• Evidence must be balanced with clinical wisdom and patient preferences

PATIENT NEEDS & PREFERENCES

EVIDENCE

EBHC

CLINICAL WISDOM
QUESTIONS?

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