香港造瘻治療師學會
Hong Kong Enterostomal Therapists Association
KOWLOON CENTRAL P.O. BOX 72958 HONG KONG

Evidence Based Practice for Nurses

Appraisal of Evidences

Evidence Hierarchies

- Ranks studies according to the strength of evidence they provide
- Also useful in situation where high-quality evidence is absent to inform your decision, in which case you have to depends on the ‘best-available evidence’

Evidence Hierarchy

Melnyk & Fineout-Overholt (2005)

Level I	Evidence from systematic review of meta-analysis of all relevant randomized controlled trials (RCTs), or evidence-based clinical practice guidelines based on systematic reviews of RCTs
Level II	Evidence from at least one well-designed RCT
Level III	Evidence from well-designed controlled trials WITHOUT randomization
Level IV	Evidence from well-designed case-control and cohort studies
Level V	Evidence from systematic reviews of descriptive and qualitative studies
Level VI	Evidence from a single descriptive or qualitative study
Level VII	Evidence from the opinion of authorities and/or reports of expert committees

Significance of Evidence Appraisal

- Allow one to examine a piece of research in an unbiased manner and to identify its strengths and weaknesses
- Only valid studies can provide evidence which can be used to enhance nursing practice
- Evidence accumulates through both the conduction and evaluation of researches that answer specific research questions

Methodology checklist/ Quality Assessment

- CASP Checklist

http://www.phru.nhs.uk/Pages/PHD/resources.htm

- SIGN 50 Checklist

http://www.sign.ac.uk/methodology/checklists.html

Research Critique

- FIVE major dimensions of the study ro review:
  - Substantive/ Theoretical
  - Methodologic
  - Ethical
  - Interpretative
  - Presentational and stylistic

Substantive & Theoretical Dimensions

- Usually found in the ‘INTRODUCTION’ of the research report
- Describes the central phenomenon or concepts under study:
  - Purpose of the research
  - Research questions or hypotheses
  - Review of related literatures
  - Significance of the study
  - Theoretical & conceptual framework

Methodologic Dimensions

- Found in the ‘METHODS’ section of the research report
- Describe the methods used to collect and analyze the data in order to obtain answer(s) to the research question(s):
  - Methods used to answer the questions
  - Methods used to test the research hypotheses
  - Methods used to analyze the results

Methodologic Dimensions

Considerations in a quantitative study:

- Design
  - Relationship between dependent & independent variables?
- Sampling
  - Sample size
  - Sampling plan
  - Generalizability of findings?
- Method of data collection & data quality
  - Reliability & validity of methods?
- Statistical analyses
  - Appropriate tests
  - Value of calculated statistics
  - Level of significance?

Methodologic Dimensions

Considerations in a qualitative study:

- Data sources & methods to collect data
  - What is the method used?
  - Are data obtained from multiple sources (triangulation)?
- Sampling
  - Who are the samples?
  - How is data saturation achieved?
- Types of evidence
  - Support credibility/ transferability?
  - Data interpretation?

Ethical Dimensions

- Usually contained in the ‘SAMPLE’ section of the research report
- Examples:
  - Approval from research review board
  - Informed consent
  - Declaration of funding source
  - Potential conflict of interest
- Usually presented briefly due to space limitations of publisher
- A less important dimension in a research critique

Interpretative Dimensions

- Contained in the ‘DISCUSSION’, ‘CONCLUSIONS’ or ‘IMPLICATIONS’ section of the research report
- Address questions associated with the relationship between the research results and their interpretation
  - How are the results interpreted?
  - What are the implications of the findings to advance nursing knowledge
  - How can findings be translated to improve nursing practice?
  - What are the study limitations?
  - Any recommendations from the researcher?

Presentational & Stylistic Dimensions

- Address how the report has been written:
  - Is it clear & concise?
  - Is there any bias?
  - Does the researcher provide enough details to support future replication of study?
  - Are there any missing pieces of vital information?
- All information should be explicitly reported

Formulation of Clinical Practice Guideline

- Data synthesis
  - Compare data across researches using evidence table
  - Identify data from ‘trustworthy’ researches
  - ‘Pool’ data together if possible
- Formulation of recommendations
- Grading of level of recommendations (with provision of rationales)

Example of an Evidence Tables

Bibliographic citation	Study type	Evidence level	Number of patients	Patient characteristics	Intervention	Comparison	Length of follow up	Outcome measures	Effect size	Source of funding
General comments:										

Grading of Recommendations

A	At least one meta analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; or A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results
B	A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1++ or 1+
C	A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2++
D	Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2+
D (GPP)	Recommended best practice based on the clinical experience of the guideline development group

References

Estabrooks , C. A., Floyd, J. A., Scott-Findlay, S., O'Leary, K. A. & Gushta, M. (2003). Individual determinants of research utilization: A systematic review. Journal of Advanced Nursing, 43(5), 506-520.

MacGuire, J. M. (1990). Putting nursing research findings into practice: Research utilization as an aspect of the management of change. Journal of Advanced Nursing, 15, 614-620.

Thompson, G. N., Estabrooks, C. A., Degner, L. F. (2006). Clarifying the concepts in knowledge transfer: A literature review. Journal of Advanced Nursing, 53(6), 691-701.

Dobbins, M., Ciliska, D., Estabrooks, C., & Hayward, S. (2005). Changing nursing practice in an organization. In A. DiCenso, G. Guyatt & D. Ciliska (Eds.) Evidence-based nursing: A guide to clinical practice. St Louis: Mosby.

Ciliska, D. (2005). Educating for evidence-based practice. Journal of Professional Nursing,21(6), 345.

Titler, M.G., Kleiber, C. Steelma, V. Rakel, B., Bufreau G., Everett, L.Q., Buckwalter, K.C., Tripp-Reimer, T. & Goode, C. (2001). The Iowas Model of Evidence -Based Practice to Promote Quality Care. Critical Care Nursing Clinics of North America, 13(4), 497-509.

Melnyk, B.M., & Fineout-Overholt, E. (2005). Evidence-Based Practice in Nursing & Healthcare. A guide to Best Practice. Philadelphia: Lippincott Williams & Wilkins.

Polit, D., & Hungler, B.P. (2004). Nursing Research: Principles and Methods. Philadelphia: Lippincott Williams & Wilkins.