Reading and Critiquing Research Articles

Types of Research Reports

- **Presentations at professional conferences**
  - ✓Oral reports
  - ✓Poster sessions
- **Journal articles**
  - ✓Papers often subjected to peer review
  - ✓Peer reviews are often blind (reviewers are not told names of authors and vice versa)

Content of Research Journal Articles

- **IMRAD Format:**

✓Title and abstract

- **I**ntroduction
- **M**ethod
- **R**esults
- **A**nd **D**iscussion

- References

Abstract

- Brief description of major features of a study at the beginning of a journal article

✓Old style—single paragraph, about 100 to 150 words

✓New style—more detailed, with specific headings **(structured: Introduction, method, results, conclusions)**

Introduction

- Description of:
  - ✓Central phenomena, concepts, or variables
  - ✓Study purpose, research questions, or hypotheses
  - ✓Review of literature
  - ✓Theoretical/conceptual framework
  - ✓Study significance, need for study

Method Section

Quantitative studies:

- ✓Research design
- ✓Sampling plan
- ✓Methods of measuring variables and collecting data
- ✓Study procedures, including procedures to protect participants
- ✓Analytic methods and procedures

Method Section (cont.)

Qualitative studies (cont.):

- ✓Research tradition
- ✓Sampling approach and description of study participants
- ✓Setting and context
- ✓Data collection approaches
- ✓Study procedures
- ✓Analytic strategies

Question

- Is the following statement True or False?

- The review of literature is typically found in the method section of the research report.

Answer

- False

- Rationale: The review of literature is usually found in the introduction of the research report.

Results Section

- **Findings:**

✓Quantitative studies:

- Descriptive information (e.g., description of subjects)
- Results of statistical analyses

  ✓Names of **statistical tests**

  ✓Value of calculated statistics
- Level of statistical significance

Results Section (cont.)

- **Findings (cont.):**

✓Quantitative studies (cont.):

  - **Level of statistical significance**—index of how probable it is that the findings are reliable
  - For example, $p<0.05$: Probability is less than 5 in 100 that the findings are false (probability is 95 in 100 that the findings are "real" and replicable)

Results Section (cont.)

- **Findings (cont.):**

✓Qualitative studies (cont.):

  - Findings often organized according to major themes, processes, or categories identified in the analysis
  - Almost always includes **raw data**—quotes directly from study participants

Discussion

- Interpretation of the results
- Implications for nursing practice and for further research
- Study limitations

Question

- Is the following statement True or False?

- A researcher would describe the limitations of the study in the results section of the report.

Answer

- False

- Rationale: The study limitations are typically described in the discussion section of the report.

Style of Research Journal Articles

- Often difficult to glean the "story" being told, because of:
  - ✓Compactness: page constraints
  - ✓Jargon
  - ✓Objectivity, impersonality
  - ✓Statistical information
    - Last two especially prominent in quantitative research articles

Tips on Reading Research Articles

- Read regularly, get used to style.
- Read copied articles—underline, highlight, write notes
- Read slowly.
- Read **actively**.
- Look up technical terms in glossary.
- Don’t be intimidated by statistics—grasp gist of story.
- “Translate” articles or abstracts.

Critiquing Research Reports

- Careful and objective appraisals of the strengths and limitations of a study
- Critiques of individual studies can be done for a variety of reasons (e.g., for a student assignment, for making decisions about whether or not to publish a manuscript, for EBP purposes)
- Vary in scope, length, and form, depending on purpose

Critiquing Research Reports (cont.)

- Can be comprehensive, appraising the substantive, methodologic, theoretical, ethical, interpretive, and stylistic aspects of both the study and the report (e.g., students can critique a single study to demonstrate their research skills.)
- Critiques to inform EBP focus on whether evidence is accurate, believable, and clinically relevant.

Research Critiques

- Critiques can be facilitated by:
  - ✓Using a formal protocol or critiquing guideline: although a one-size-fits-all guideline does not typically work perfectly
  - ✓Reviewing a model of a good critique

Question

- Is the following statement True or False?

- Research critiques are done to evaluate the strengths and limitations of a study.

Answer

- True

- Rationale: Although there are a wide variety of reasons for critiquing research, research critiques provide careful and objective appraisals of the strengths and limitations of a study.

Issues of Reliability and Validity

Reliability الدقة

- Reliability = The accuracy and *consistency* in procedures, obtained information, and in reactions of participants
- The ability of a measurement tool to yield consistent results over time or under similar conditions

Validity الصدق

- Validity = *truth* - Does it measure what it intended to measure?
- The degree to which an instrument measures what it is supposed to measure
- The soundness of the evidence—whether findings are convincing, are well-grounded, and support the desired inferences

- When reliability and validity are achieved, data are free from systematic errors

Threats to Reliability and Validity

- If measuring device cannot make fine distinctions
- If measuring device cannot capture people/things that differ
- When attempting to measure something irrelevant or unknown to respondent
- Can measuring device really capture the phenomenon?