

Chapter 4 Reading and Critiquing Research Articles

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Types of Research Reports

- Evidence from nursing studies is communicated through *research reports* that describe what was studied, how it was studied, and what was found.
- It can be found in:
 - **Presentations at professional conferences**
 - **Oral presentations**
 - **Poster sessions**
 - **Journal articles** (studies published in professional journals)
 - Papers often subjected to **peer review**
 - Peer reviews are often **blind** (reviewers are not told names of authors and vice versa).

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Content of Research Journal Articles

- **IMRAD Format**
 - ❖ Title and abstract
 - ❖ **I**ntroduction
 - ❖ **M**ethod
 - ❖ **R**esults
 - ❖ **A**nd **D**iscussion
 - ❖ References

Title and Abstract

- **Title**
 - **Qualitative studies:** Title normally includes the central phenomenon and group under investigation.
 - **Quantitative studies:** Title communicates key variables and the population (PICO components).
- **Abstract:** brief description of major features of a study at the beginning of a journal article (the research problem, methods, findings)

Components of the 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: *Qualitative Studies*

- Discuss many of the same issues as quantitative researchers but with different emphases
- Provide more information about the research setting and the context of the study
- Describe the researchers' efforts to enhance the integrity of the study

Question

Tell whether the following statement is True or False.

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

- a. True
- b. False

Answer

b. False

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

Results Section

- **Findings**
 - **Quantitative** studies
 - The names of statistical tests used
 - The value of the calculated statistic
 - Statistical significance
 - Level of statistical significance
 - Index of how probable it is that the findings are reliable

Results Section—(cont.)

- **Findings**
 - **Qualitative** studies
 - 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 Section

- Interpretation of the results
- Clinical and research implications
- Study limitations and ramifications for the believability of the results

Question

Tell whether the following statement is True or False.

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

- a. True
- b. False

Answer

- b. False

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

Why Research Articles Are Hard to Read?

- 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.

Research Critique

- **Definition:** an objective **assessment** of a study's **strengths and limitations**
- Critiques to inform EBP *focus on* whether evidence is accurate, believable, and clinically relevant.
- Careful and objective *appraisals of the researcher's major conceptual and methodologic decisions*
- Critiques of individual studies can be done for a variety of reasons:
 - 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

Question

Tell whether the following statement is True or False.

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

- a. True
- b. False

Answer

a. 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.

Key Research Challenges

- Designing studies to support **inferences** that are:
 - **Reliable** and **valid** (quantitative studies)
 - **Trustworthy** (qualitative studies)
 - An **inference** is a conclusion drawn from the study evidence using logical reasoning and taking into account the methods used to generate that evidence.



Criteria for Evaluating Quantitative Research (Scientific Merit)

- **Reliability**

- The accuracy and consistency of obtained information

- **Validity**

- The soundness of the evidence—whether findings are convincing, are well-grounded, and support the desired inferences



Evaluative Criteria in Qualitative Studies

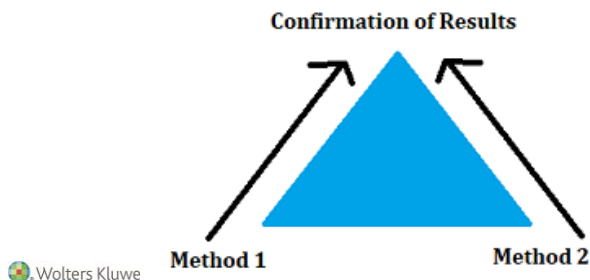
- **Trustworthiness**

- **Credibility**—a key criterion, achieved to the extent that researchers can engender confidence in the truth of the data and their interpretations
- **Confirmability**
- **Dependability**
- **Transferability**
- **Authenticity** (is it worthwhile?)

- **Trustworthiness:** definitions of **quality criteria** in qualitative research.
- **Credibility** The confidence that can be placed in the **truth of the research findings**. Credibility establishes whether the research findings represent plausible information drawn from the participants' original data and is a correct interpretation of the participants' original views.
- **Transferability** The degree to which the **results of qualitative research can be transferred to other contexts** or settings with other respondents. The researcher facilitates the transferability judgment by a potential user through thick description.
- **Dependability** The **stability of findings over time**. Dependability involves participants' evaluation of the findings, interpretation and recommendations of the study such that all are supported by the data as received from participants of the study.
- **Confirmability** The degree to which the findings of the research study could be **confirmed by other researchers**. Confirmability is concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination, but clearly derived from the data.
- **Reflexivity** The process of **critical self-reflection about oneself** as researcher (own biases, preferences, preconceptions), and the research relationship (relationship to the respondent, and how the relationship affects participant's answers to questions)

Triangulation

- **Triangulation** is the use of **multiple sources** or referents to draw conclusions about what constitutes the truth.
 - Triangulation can contribute to credibility.
 - Triangulation is a useful strategy in both qualitative and quantitative research.



Question

What component is a key aspect of trustworthiness?

- a. Triangulation
- b. Reliability
- c. Credibility
- d. Validity

Answer

- c. Credibility

Rationale: Credibility is a key criterion for trustworthiness. Reliability and validity are key for evaluating quantitative research. Triangulation is the use of multiple sources or referents to draw conclusions.

Bias

- A distortion or influence that results in an error in inference
- Examples of factors creating bias
 - Lack of participants' candor
 - Faulty methods of data collection
 - Researcher's preconceptions
 - Participants' awareness of being in a special study
 - Faulty study design



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Research Control

- In quantitative studies, **research control** involves **holding constant** extraneous factors (**confounding variables**) that influence the dependent variable to better understand relationships between the independent and dependent variables.
- Research control is one method of addressing bias.

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Bias Reduction: Randomness and Blinding

- **Randomness**—allowing certain aspects of the study to be left to chance rather than to researcher or participant choice
 - An important tool for achieving control over confounding variables and for avoiding bias
- **Blinding** (or *masking*), which is used in some quantitative studies to prevent biases stemming from people's awareness
 - Blinding involves concealing information from participants, data collectors, or care providers to enhance objectivity.



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Reflexivity

- The process of **reflecting critically on the self** and of attending to personal values that could affect data collection and interpretations of the data
- Qualitative researchers are trained to explore these issues, to be reflective about decisions made during the inquiry, and to record their thoughts in personal diaries and memos.
- Reflexivity can be a useful tool in quantitative as well as qualitative research—self awareness and introspection can enhance the quality of any study.

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Question

Tell whether the following statement is True or False.
Blinding is used in qualitative studies.

- a. True
- b. False

Answer

- b. False

Rationale: Blinding is used in quantitative studies to reduce bias that results from awareness.

Generalizability and Transferability

- **Generalizability:** the criterion used in **quantitative** studies to assess the extent to which the findings can be applied to other groups and settings
- **Transferability** (**qualitative** research): the extent to which qualitative findings can be transferred to other settings
- An important mechanism for promoting transferability is the amount of rich descriptive information qualitative researchers provide about study contexts.