Components of a Research Article

There are many sources that describe the components needed in a research article. Certain sections in the notes below have citations and links to specific resources. The notes without such citations are adapted from the way that Juanita Keck DNS, RN once described them in a research presentation. After you review these notes, and the resource links herein, you should be able to see that the components expected in a sound research article are widely known in professional circles and publications.

RESEARCH PRINCIPLE

The result of research is new knowledge (empirical data) about a phenomenon; therefore, the focus of a research article is on the following:

- **Delineation of problem:** The need for new knowledge about a phenomenon.
- **Theory and literature review:** What is already known about the phenomenon.
- **Literature review:** What still needs to be known.
- **Purpose, questions, hypotheses:** What specifically needs to be investigated by the research.
- **Method:** How to obtain the knowledge.
- **Findings, results:** Description of the knowledge gained.
- **Discussion, conclusion:** How does the new knowledge relate to the identified need? For example, does this knowledge contribute to solution of the problem as expected? Are there any reasons that can explain the results.

ABSTRACT, INTRODUCTION, AND LEVELS OF EVIDENCE

An abstract that briefly summaries the content of a research paper and introductory part are standard parts of a research paper.

The Library of the Health Sciences-Chicago, University of Illinois at Chicago (UIC) provides an Evidence Based Nursing site with more information about what goes into an abstract. (The URL is [http://ebp.lib.uic.edu/nursing/node/33](http://ebp.lib.uic.edu/nursing/node/33).) This is useful to review because it also gives you a preview of major components needed in a complete research article.

This same site provides a review of the Levels of Evidence Pyramid. (The URL is [http://ebp.lib.uic.edu/nursing/node/12](http://ebp.lib.uic.edu/nursing/node/12).) And, it provides key information about Literature Resources. (The URL is [http://ebp.lib.uic.edu/nursing/node/72](http://ebp.lib.uic.edu/nursing/node/72).)

The UIC structure of the Glossary for EBN also provides a quick overview of some key issues to think about when reviewing a research article or planning research. (The URL is [http://ebp.lib.uic.edu/nursing/node/67](http://ebp.lib.uic.edu/nursing/node/67).)
INFORMATION TO INCLUDE IN MAJOR COMPONENTS

Delineation of problem:

Why the author wanted to conduct the research.
Extent of occurrence, i.e., number of people affected
Severity of consequences, i.e., cost, morbidity, etc.
Solution to the problem provides **new information** which will contribute to lessening the severity of the consequences.
Something is occurring which has negative consequences

Theory base:

Provides basis for expecting the proposed solution to be effective

Literature review:

Provides information about:
What is already known about the phenomenon
What needs to be known
What kinds of problems others have had in investigating the proposed solution.
What has been wrong with previous research investigating the problem
Possible solution which needs research because:
  a. Needed information is not known
  b. There is equivocal information about the problem
  c. Current information was gleaned from a small sample
  d. There were problems with previous studies which purported to provide the information which make the information suspect.

Purpose of the study:

to implement the proposed solution.

Hypotheses/research questions:

What the authors actually investigated. Includes definitions of terms in hypotheses which are not universally understood so the reader can determine if the variables investigated fit with the reader’s definition.

Methodology:

  a. Description of the population/sample
  b. Description of the design of the study if appropriate
  c. Description of the study variables (components of the phenomenon about which there is inadequate information)
  d. Discussion and description of other things which might contribute to findings for which the authors needed to control (extraneous variables)
  e. Description of tools to collect data including their reliability and validity
f. Description of procedures used to collect data, e.g.,

How individual sample members were asked to participate.
How human rights were assured.
How data were collected.

Findings/description of the sample/population:
Statement of the findings, results, or hypothesis testing.

Discussion/Conclusion
Explanation of the findings and/or discussion of the fit between findings and the problem

1. Whether the new data are adequate.
2. If there were unexpected problems with findings that need to be discussed.
3. What these findings tell one about the phenomenon being investigated.
4. The impact these findings might have in "the real world" of the phenomenon.
5. Where these findings fit with findings of other students in providing understanding of the phenomenon as a whole.

CRITIQUE OF THE ARTICLE

The research critique involves an evaluation of the adequacy of the knowledge gained. Adequacy is determined by how well the authors:

Components: Does the article have and describe each component listed above.
Logic: Does the research described followed a clear, logical progression through the research process?
Coherence, congruence: Does the research process align with the problem, purpose, hypotheses?

a. Were the variables tested through hypotheses identified in the problem delineation?
b. Did the conclusions adequately reflect the findings?
c. Utilized appropriate and adequate tools to obtain the data?
d. Analyzed data appropriately?
e. Made generalizations adequately and appropriately?

UIC provides a section on Evaluating the Quality of Research. (The URL is http://ebp.lib.uic.edu/nursing/node/21.) Topics include validity, bias, and applying
research to clinical practice. (More notes on application appear under the next heading.)

Allnurses.com has an example of a Research Critique. (The URL is http://allnurses.com/research-nursing/research-critique-127450.html.) This example illustrates the kind of critique you should be able to do as you review articles for your own research.

APPLICATION OF NURSING RESEARCH

Science Direct has posted an article about applied research in nursing which is worth reading. (The URL is http://www.european-academy-of-nursing-science.com/wp-content/uploads/2010/01/Rahm-Hallberg_2009.pdf.)


As you read over this article, you’ll see that it explains some of the connections we expect to see in nursing research, as well as reflections on how to apply such research.