

Nursing Research Series

Essentials of Science: Methods, Appraisal and Utilization

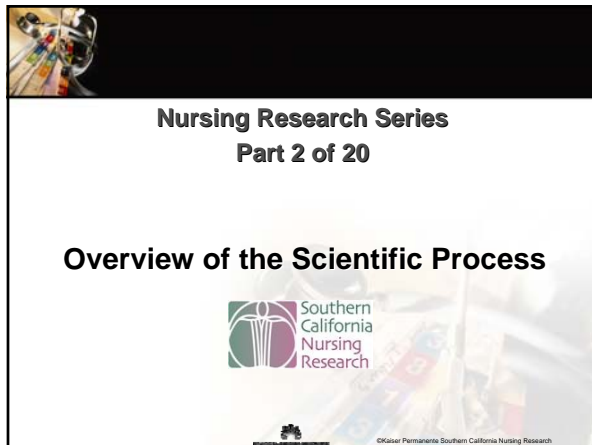


Nursing Research Series

*Essentials of Science:
Methods, Appraisal and Utilization*




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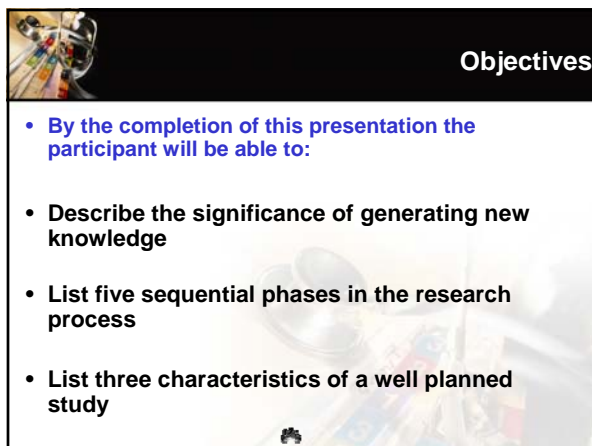


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Part 2 of 20

Overview of the Scientific Process




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Objectives


- **By the completion of this presentation the participant will be able to:**
- Describe the significance of generating new knowledge
- List five sequential phases in the research process
- List three characteristics of a well planned study



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Research Defined

- Diligent systematic inquiry
- Discovery of new knowledge
- Validate and refine existing knowledge

(Burns & Grove, 2007)




Significance of Nursing Research

- Building a body of knowledge for the nursing profession
- Knowledge generated can be used to improve:
 - Clinical practice
 - Nursing education
 - Nursing administration
 - Nursing roles

A knowledge base to draw from -- to support and enhance what we do in practice





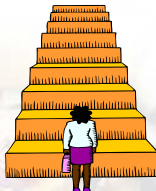
Phases of the Research Process

The research process has five formal phases, with a logical flow, that are completed in order

Five major phases:

1. Conceptual phase
2. Design and planning
3. Collection of data
4. Analysis
5. Dissemination of findings

(Polit & Beck, 2008)




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Conceptual Phase

1. Conceptual phase

- Develop a research question from the problem to be examined
- Review the related literature
- Examine the clinical influences
 - Observe current practices
 - Discuss topic with clinicians and field experts
- Select conceptual framework
- Formulate purpose, aims, and hypotheses



Design and Planning


2. Design and planning phase

- Select a research design
- Define variables and decide how to measure
- Identify the population and sample
- Develop the protocol
- Protect human rights and privacy

Collection of Data


3. Collection of data phase

- Chart review
 - Physiological data
 - Treatments
 - Medication
- Surveys
- Interviews
- Observation



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Analysis

4. Analysis phase


- **Quantitative: Use of statistics** --a set of concepts, rules, and procedures based in probability theory that help us to organize and interpret numerical information.
 - Demographics
 - Descriptive
 - For comparison and relationships
- **Qualitative: Content analysis**--a set of concepts, rules, and procedures that help us to organize and interpret potential patterns
- **Interpretation of the findings**
 - Nonsignificant and significant results
 - Unexpected results
 - Clinically significant
 - Recommendations




Dissemination of Findings

5. Dissemination phase

- Research report and manuscript
- Posters and podium presentations



The overall goal is to use findings in practice



A Well Planned Study

- **Fit**
 - Is it the right research design to answer the question?
 - Does the research question align with what is found in the literature?
 - Is the data collection method extracting the information desired?
 - Is there correct data analyses to answer the question?
- **Flow**
 - Do the steps of the process flow in logical order to obtain desired answer?
- **Feasibility**
 - Does the level of expertise of the researchers match requirements of the study?
 - What is the availability of subjects, facilities, and equipment?
 - Are ethical considerations addressed and rights are protected?
 - Is there time, money, and organizational support committed to the study?

(Burns & Grove, 2007)

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Time Commitment

1. Conceptual phase
 - 2 months-1 year
2. Design and planning
 - 1- 6 months
3. Collection of data
 - 1 month-1 year
4. Analysis
 - 1- 3 months
5. Dissemination of findings
 - 6 months to 2 years

Exciting to generate valid knowledge that may affect practice!

*depends on percent of time devoted to research activities





In Summary

The research process has five formal phases, with a logical flow, that are completed in order.

1. Conceptual phase
2. Design and planning
3. Collection of data
4. Analysis
5. Dissemination of findings

The research process provides:

- Generation of new knowledge
- Confirmation and validation of existing knowledge
- Evidence to apply in practice





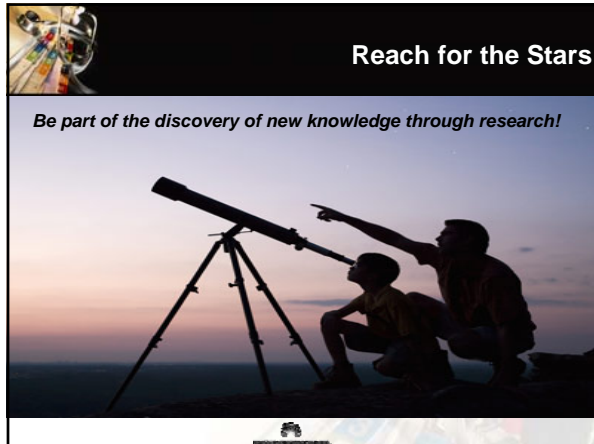
Research Resources

- Nurse Scientists
- Expert Clinicians
- Statisticians
- Research program and activities at your facility



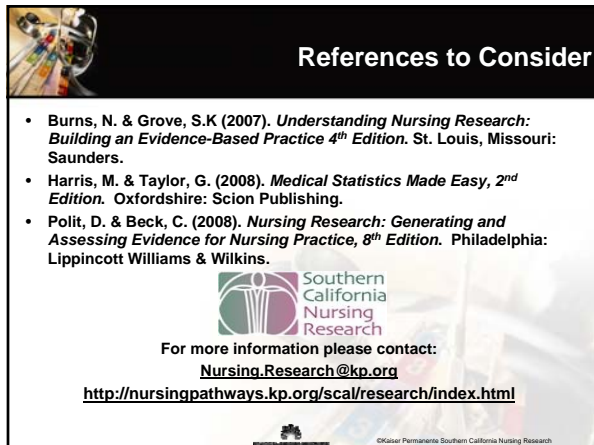
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Reach for the Stars

Be part of the discovery of new knowledge through research!



References to Consider

- Burns, N. & Grove, S.K (2007). *Understanding Nursing Research: Building an Evidence-Based Practice 4th Edition*. St. Louis, Missouri: Saunders.
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- Polit, D. & Beck, C. (2008). *Nursing Research: Generating and Assessing Evidence for Nursing Practice, 8th Edition*. Philadelphia: Lippincott Williams & Wilkins.

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