

*SEN-SRN Conversion Course*

## *Research Module*



# Research Problems and Hypothesis

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# Lecture Overview

- How research studies begin?
- Sources of research problems
- Developing & refining a research problem
- Statement of a research problem
- Research hypothesis

## *Source:*

Polit & Hungler (1996). Nursing Research, Philadelphia, Lippincot

## How research studies begin?

A research study begins as a question that a researcher would like to answer or a problem that a researcher would like to solve.

### *Why this phase is difficult?*

- Many things to be known, difficult to select one
- Unfamiliar with previous studies on the subject
- What the study would entail

# Sources of research problems (1)

## A) Experience

- Nurses everyday experience provide rich supply of problems for investigation
- Includes wealth of ideas
- Practical and relevant problems would instil more enthusiasm than abstract and distant problems
- Important ingredient: CURIOSITY
  - Ask questions....
    - » How are things done?
    - » How could be improved?

# Sources of Research Problems (2)

## B) Nursing Literature

- Mainly from nursing research in journals
- Would familiarise with wording of research problems
- Stimulate imagination or interest on certain topic
- Realise inconsistencies in findings
- Certain studies identify areas for further studies
- Can compare studies with different settings and subjects

# Sources of Research Problems (3)

## C) Nursing Theory

- What kind of evidence would support the theory?
- If theory is correct, what kind of behaviour is expected under certain conditions or situation?
- E.g. Theory that patient allocation results in individualised nursing care.

# Sources of Research Problems (4)

## D) Ideas from External Sources

- Board of studies can give certain topics for research
- Sponsors to find certain evidence
- Priority list of problems
- Brain storming with peers, advisors, researchers etc.
- However **CURIOSITY** remains a critical ingredient in successful research

# Most important considerations (1)

## A) Significance to nursing

- Is the problem important?
- Will patients, community, nurses, management benefit from the acquired knowledge?
- Will findings challenge untested assumptions?
- Will findings help formulate or alter nursing policies?
- If not: **PROBLEM IS IRRELEVANT AND SHOULD BE ABANDONED**



# Most important considerations (2)

## B) Researchability

- Not all problems researchable
- Researchable questions usually are those which involve precisely defined and measurable variables
- Problems or issues of a moral or ethical nature are usually incapable of being researched

# Most important considerations (3)

## C) Feasibility

- **Time and Timing:** To consider deadlines as research is time consuming, right timing etc.
- **Availability of subjects:** Securing co-operation is not easy especially when time and comfort are not guarantee.
- **Co-operation of others:** may need co-operation of third parties, authorities, other staff etc.
- **Facilities and equipment:** Check availability
- **Money:** literature, telephones, envelopes, charges
- **Ethical considerations:** may pose unfair or unethical demands on the participants

# Most important considerations (4)

## D) Interest to the researcher

- If problem is researchable, feasible, significant but is not of interest for the researcher then the problem for research should be changed.
- Great deal of time and effort is invested in a research.
- Should be supported by interest and enthusiasm
- The problem should extend the researcher's personal knowledge as well as the base of knowledge of others.

# Statement of the Research Problem

The problem statement should identify the key study variables and their possible interrelationships, and the nature of the population of interest

*Two main forms of statement:*

- *Statement of purpose:* Declarative for as a broad statement of purpose
- *Research questions:* Problem statement in an interrogative form. Advantage: simple and direct.



# Research Hypothesis

**A hypothesis is a tentative prediction or explanation of the relationship between two or more variables.**

- **Hypothesis translate problem statements into predictions of expected outcomes**
- **A good hypothesis is worded in simple, clear, and concise language and provides a definition of variables in concrete, operational terms**

# Testing the Hypothesis

- **Null Hypothesis (*Hypothesis 0*):** The null hypothesis is a statement that there is no relationship between the dependent and independent variable and that any such observed relationship is only a function of chance or sampling fluctuations
- **Significant results (*Hypothesis 1*) :** Results supporting the researcher's hypothesis
- **Level of significance:** most frequently used 0.05 or 0.01 (p value)