

HSCC 470 Research Methods and Data Analysis in Health Sciences

Research Hypotheses

HSCC 470: Research Hypotheses



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Unit Objectives

Upon completion of this unit, the student will be able to:

- List and discuss the parameters of selecting a research problem.
- List and discuss the various sources of researchable problems.
- Define problem statement.
- Define sub-problems.
- Describe the process of formulating a research hypothesis.

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Selection of the problem

- Interest
- Operability
- Scope and significance
- Theoretical and practical value
- Values of the researcher
- Research methodology
- Availability of subjects
- Time frame
- Money

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Sources of researchable problems

- Daily practice
- Practitioners
- Professional journals
- Workshops and conferences

Problem statement

- Specific
- Easily understood
- Focused
- Example: “Which drugs administered by paramedics result in adverse interactions with patients’ home medications?”

Sub-problems

- What is the profile of home medications in an EMS patient population?
- Which drugs of the paramedic formulary have the highest potential for adverse interactions in an EMS patient population?
- What patient characteristics and/or home medications are predictive of adverse interactions?

Setting and limitations

- Location
 - Is it typical? Can we generalize findings to other locations?
- Scope
 - Who is included? Who isn't?

Formulation of Hypotheses

Hypothesis – a reasonable guess or suggested answer to a problem or sub-problem

- Development – derived from problem statement or sub-problems. Typically a one-to-one relationship with sub-problems
- Concise and understandable.
- Expresses a relationship between two or more variables.
- Is written in “null” form.
- Is testable.

Examples or Research Hypotheses

Beta blockers are no more likely to be involved in adverse drug interactions among EMS patients than calcium channel blockers.

EMS patients with more than 4 concurrent prescriptions are at no greater risk for adverse drug interactions than EMS patients with less than 4 concurrent prescriptions.
