

HSCC 470 Research Methods and Data Analysis in Health Sciences

Conceptual Framework of Research

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Unit Objectives

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

- List 6 approaches to acquiring knowledge.
- Characterize the Scientific approach to knowledge acquisition.
- Characterize the scientist/researcher.
- List the 5 purposes of scientific research.
- List the characteristics of sound theory.
- Discuss the limitations of scientific research.
- Define the 2 basic types of research.
- Describe the research process.

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Approaches to Knowledge

- Tradition
- Authority
- Human Experience
- Trial and Error
- Logical Reasoning
- Scientific Approach

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Characteristics of the Scientific Approach

- Order and Systemization
- Control
- Empiricism
- Generalization

Characteristics of Scientists

- Objective and Impartial
- Skeptical
- Factually-Based
- Systematic and Orderly

Purposes of Scientific Research

- Description
- Exploration
- Explanation
- Prediction and Control
- Development of Theory

Science and Theory

The ultimate goal of scientific inquiry is to formulate theory. Theories provide a way to conceptualize, organize, integrate, and classify the facts that scientists accumulate.

Characteristics of a Sound Theory

- A theory should be able to explain the observed facts.
- A theory should be consistent with observed facts and with the already established body of knowledge.
- A theory should provide a means for its verification.
- A theory should stimulate new discoveries and indicate further areas in need of investigation.

Limitations of Scientific Research

- The scientific method cannot be used to answer questions of a moral or ethical nature.
- Problems arise in measuring variables.
- Every study contains design flaws.

General Types of Research

- Basic
- Applied

The Research Process


