Tikrit University

College of Nursing

Basic Nursing Sciences

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Research Methods

(Hypotheses)

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Research methods

Hypotheses

The term hypothesis is derived from the ancient Greek, „"hypotithenai"" meaning "to put under" or "to suppose a hypothesis is a specific statement of predication. It describes in concrete (rather than theoretical) terms what you expect will happen in your study. A hypothesis is the formal statement of the expected relationship(s) between two or more variables. The hypothesis translates the research problem and purpose into a clear explanation or prediction of the expected results or outcomes of the study.

Source of hypotheses

1. Conceptual or theoretical framework.
2. Personal experience.
3. The literature review.

Characteristics of hypotheses

1. Written as declarative sentences, commonly using a present-tense verb (the content of the sentence should be similar to that of the problem statement.

2. Identifies the population to be studied (should be specifically stated and congruous with the population identified in the problem statement)

3. Identified at least on independent variable and one dependent variable (the variables, which are linked by the hypotheses, should be congruous with the variables identified in the problem statement).

4. is empirically testable and therefore cannot focus on moral or ethical issues.

Types of hypothesis

1. The Null Hypothesis: is a statement that no difference exists between the populations being compared. (H0).

2. The Alternative or Research Hypothesis:

Is a statement that there is a difference between the population being compared, hypothesis that would support researchers' prediction. (HA).

3. Directional Hypothesis
In this type of hypothesis the investigator suspects that one variable will have an influence upon another variable. Investigator suspects that there will be either a direct or inverse relationship between two variables.

4. Non-directional Hypothesis
In this type the investigator suspects there is a difference but does not state what it is, and in which way. It could be either direct or inverse.
Variables

Variables are qualities, properties and / or characteristics of persons, things or situations that are studied in research. Variables are concepts that have been concretely defined to help in observation or measurement within a study.

Characteristics of variables:-

1. Identify the concepts to be studied

2. Are measurable.

3. Are usually narrow and specific in focus.

Types of variables

1. Dependent variables

is the variable that is measured by the experimenter. It Is the response, behavior or outcome that the researcher wants to predict or explain. changes in the dependent variables are presumed to be caused by the independent variables.

2. Independent variables

The **independent variable** is the variable that is controlled and manipulated by the experimenter. Is a stimulus or activity that is manipulated or varied by the researcher to create an effect on the dependent variable. There are two types of independent variables: **Active and attribute**.

3. Control variable

A control variable is a variable that effects the dependent variable. They Are quantities that a research wants to remain constant, and he must observe them as carefully as the dependent variables.

4. Attribute variables

Attribute variables are characteristics or elements of the human subject that are collected to describe the sample.

Some common attribute variables are:

- Age.
- Gender.
- Educational level.
- Income.
- Race.
- Socioeconomic status.
- Job classification.

5. An environmental variable: is a factors that is part of the setting in which the study is conducted, it also may be independent, dependent, extraneous, or confounding.

6. Extraneous variable: This is a variable that probably does influence the relationship between the independent and dependent variables, but it is one that we do not control or manipulate.

7. Participant Variables: These extraneous variables are related to individual characteristics of each participant that may impact how he or she responds. These factors can include background differences, mood, anxiety, intelligence, awareness and other characteristics that are unique to each person.

8. Situational Variables: These extraneous variables are related to things in the environment that may impact how each participant responds. For example, if a participant is taking a test in a chilly room, the temperature would be considered an extraneous variable. Some participants may not be affected by the cold, but others might be distracted or annoyed by the temperature of the room.