Social Science Research Methods

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Descriptive Research

Observational Research Design

- The researcher **observes** and **systematically records** the **behavior** of individuals in order to **describe** the behavior.

Types of observational research

- Behavioral observation: **direct** and **systematic recording** of behaviors, usually in a **natural setting.**

Types of observational research

- Issues:
  - Behaviors disrupted by observation
  - Subjective interpretation
  - Observational Exercise

Observational Research

- Habituation: getting used to **observer's presence.**
- Setting up **behavior categories** to categorize **counted behaviors**.

Observational Research

- Content analysis: using techniques of behavioral analysis to look at **occurrence of specific events in media.**

Observational Research

- Archival research: using **historical records** to measure behaviors.

Types of Observations

- Naturalistic observation: researcher **observes behavior in a natural setting as unobtrusively as possible.**

Types of Observations

- Participant observation: researcher **engages in activities to observe and record behavior of individuals.**

Types of Observations

- Contrived (structured) observation: setting is arranged to **elicit target behavior.**
- Structured Observation

Survey Research Design

- Survey research design: uses a **survey** to obtain a **description of a particular group.**

Survey research design

Name	Definition	Advantages	Disadvantage/Issues	Example
Open-ended	Allows participants to **respond in their own words.**	Reveals individuals' **true thoughts or opinions**	1. **Different perspectives** 2.**Difficult to summarize or analyze**	What is your favorite pet type?

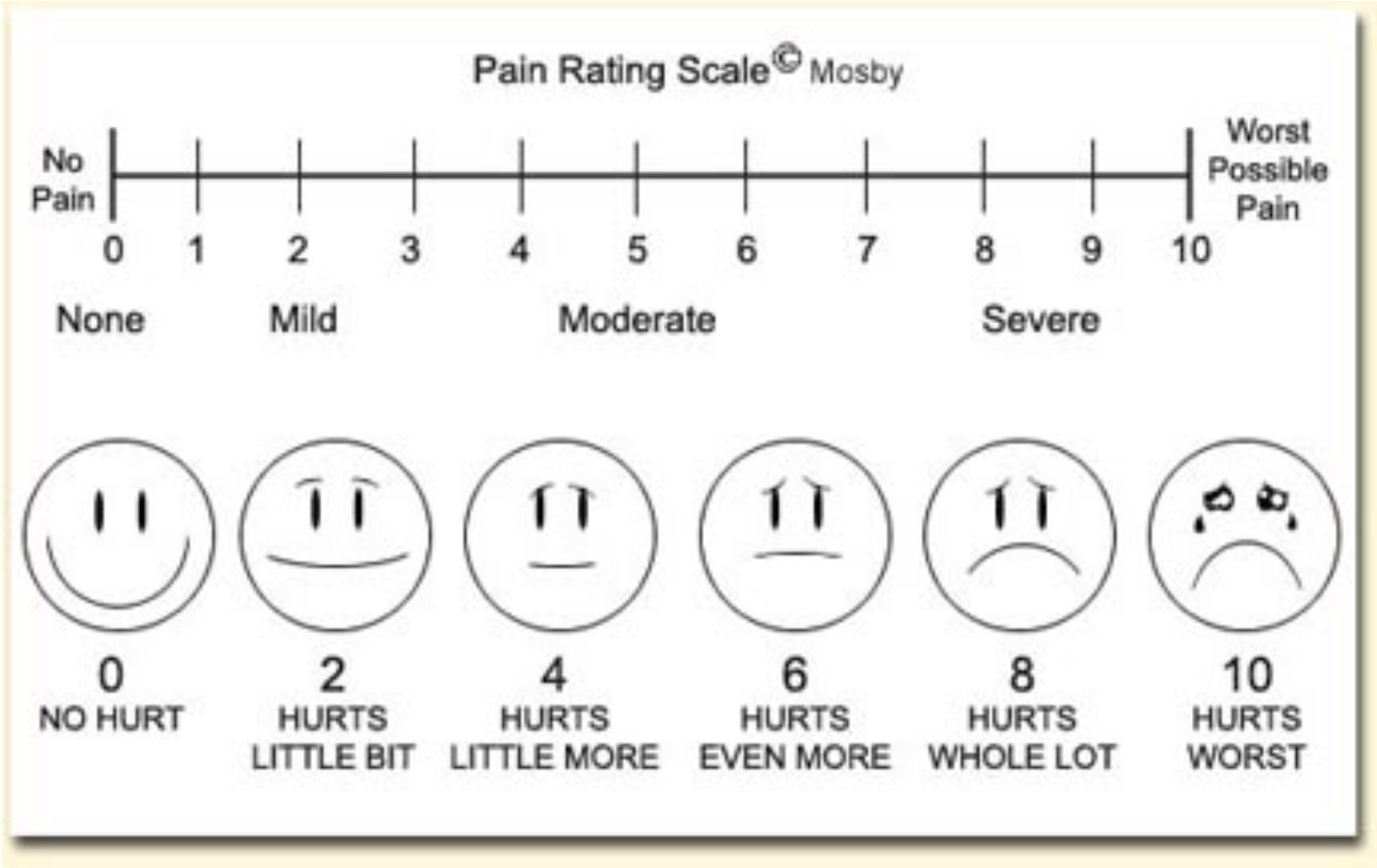
Survey research design

Restricted	Gives participants **limited responses. (multiple choice)**	Easy to **analyze and summarize**	1. **Might not have all answers.**	What is favorite pet type: A. Dog B. Cat C. Bird

Survey Research Design

Rating -scale	Gives participants **Pre-determined scale**	Easy for participant to **Understand** Allows for **measurement on interval scale**	1. **Response Set: Answer the same for all** 2. **Debate about interval scale.**	

Survey research Design



Administering a survey

- Mailed Surveys
  - Convenient and anonymous
  - Non-threatening
  - Easy to administer

Administering a survey

- Mailed Surveys
  - Can be expensive
  - Low response rate
  - Unsure who completes the survey

Administering a survey

- Non-response bias: **people who return surveys are not usually representative of population.**

Administering a survey

- Telephone Surveys
  - Conducted from home or office
  - Cheaper (no paper involved)

Administering a survey

- Telephone Survey
  - Time Consuming
  - Interviewer Bias: **researcher influences natural responses.**

Administering a survey

- Internet Surveys
  - Efficient to administer
  - Access to large number of people
  - Survey can be individualized

Administering a survey

- Internet Surveys
  - Expense for site (not always)
  - Sample may not be representative
  - Cannot control who sees/takes survey

Administering a Survey

- In person survey
  - Efficient to administer in groups
  - 100% response rate
  - Flexible (groups or individual)

Administering a Survey

- In person surveys
  - Time consuming
  - Interviewer bias

Experimental Research Strategy

Experimental research strategy

- The goal of the experimental research strategy is to **demonstrate a cause-and-effect relationship between two or more variables**.

Experimental research strategy

- The following four basic elements must be present (for experiment status):
  - **Manipulation**
  - **Measurement**
  - **Comparison**
  - **Control**

Experimental research strategy

- The variable that is **manipulated/changed** is called the **independent variable**.
  - Specific conditions are called **levels**.

Experimental research strategy

- The variable that is **measured** is called the **dependent variable**.

Experimental research strategy

- Trying to demonstrate that changes in the **independent variable** are responsible for changes in the **dependent variable**.

Experimental research strategy

- A researcher is interested in the effects of exercise on weight. He creates a new exercise program that targets certain body areas. Each participant's weight is measured at the beginning of the study. The researcher then has the participants either participate in the new program, or do nothing. Weight is then measured 6 weeks later, comparing the two groups.

Experimental research strategy

- A developmental psychologist is interested in the effects of age on color preference. She recruits people of three different age groups:10-15, 16-20 and 20-25, and asks them to rank five different colors: red, blue, green, white, and black. The preferences are then compared among the age groups.

Experimental research strategy

- A clinician is interested in looking at how gender and a new therapy are related in terms of depression scores. All participants are given a depression test. The researcher splits the groups into male and female. Each group is then split into treatment/no-treatment groups. Depression scores are then measured again, and compared among the groups.

Experimental research strategy

- All other variables in the study are called **extraneous variables.**

Experimental research strategy

- May become a **confounding variable** if **systematically changes with dependent variable**.

Experimental research strategy

- A researcher is interested in the effects of off-topic discussion in a classroom on attention. He has one classroom that is taught as normal, and a second in which two confederates chat in the back during the lecture. Scores on a “pop quiz” are then taken, and compared between the two classes.

Conditions for cause and effects

- Time-order of independent /dependent variable
  - Independent must come first
- Covariance of independent and dependent variables
  - Must correlate with each other
- Exclusion of confounding variables

Problems with causation

- Third variable problem: **occurs when a third variable is related to both the independent variable and the dependent variable, and is responsible for the changes in both. (Confound!)**

Problems with causation

- Directionality Problem: **Can be unknown if independent caused dependent or dependent caused independent.**

Problems with causation

- Setting of experiment: **Unknown if findings of study extend beyond "unnatural" setting.**

Elements of an experiment

- Manipulation:
  - **Determine which variable to manipulate**
  - **Create series of treatments with different IV values**

Elements of an experiment

- Helps to solve the **directionality problem** by allowing for **systematic changes in only one variable.**

Elements of an experiment

- Helps to solve the **third-variable problem** by allowing for **a means to test for it**.
  - Can manipulate third-variable to test for changes in dependent variable

Elements of an experiment

- Control: **Experiments control all other variables outside IV and DV.**

Elements of an experiment

- Helps to solve the **third-variable problem** by allowing for **consistency among levels of IV**.

Elements of an experiment

- How to control extraneous variables:
  - Hold constant: Keep the variable the same for all participants. (Only use women, only use 5-year-olds, etc.)
  - Matching: Keep the variables the same between levels. (Same number of men and women in each group, same number of 1st and 2nd graders in each group, etc.)
  - Randomization: Place people into groups randomly to prevent systematic placement into groups.

TABLE 7.1

A Confounding Variable and Three Methods to Prevent Confounding

(A) Gender Confounded		(B) Gender Held Constant		(C) Gender Matched		(D) Gender Randomized	
Treatment		Treatment		Treatment		Treatment	
I	II	I	II	I	II	I	II
M	M	F	F	M	M	M	F
M	M	F	F	M	M	F	M
F	M	F	F	M	M	F	F
F	M	F	F	M	M	M	F
F	M	F	F	F	F	F	M
F	M	F	F	F	F	M	M
F	M	F	F	F	F	M	F
F	M	F	F	F	F	F	F
F	F	F	F	F	F	M	M
F	F	F	F	F	F	F	M

Groups of an experiment

- Experimental group: **Group that experiences the manipulated independent variable (treatment).**

Groups of an experiment

- Control group: **group that does not experience manipulated independent variable (treatment).**

Groups of an experiment

- Control groups
  - No-treatment control group: **participants do not receive any treatment/manipulation.**
  - Placebo group: **participants receive a placebo version of the treatment/manipulation (sugar pill, off-topic test, etc.)**

Correlational Research Design

r=0.0

r=-0.3

r=0.5

r=-0.7

r=0.9

r=-0.99

Pearson Correlation

- Significance of the relationship: **significance indicates that the relationship was not due to random variance (is a relationship).**

Pearson Correlation

- Significance does not measure **how strong the relationship is.**

Pearson Correlation

- **r^2: co-efficient of determination.**
  - Measures how much of the **variance of one variable** is **predicted by the second variable**.
    - Square of correlation

Correlational Research vs. Experimental Research

- Correlational research demonstrates the **existence** of a relationship.
- Correlations cannot answer **why the relationship exists.**
  - **Third-variable problem**

Correlational Research vs. Experimental Research

- Experimental research demonstrates the **causality** of a relationship.

Uses of correlational research

- **Prediction: future behavior and level of second variable**
- **Reliability**
- **Validity**
- **Theory Evaluation**