

# Introduction to the Psychology of Women

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Biases in Research

# Psychology Definition

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- Psychology is the scientific study of human behavior and mental processes.

# Scientific Method

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Orderly systematic procedures researchers follow as they:

- Identify a research problem
- Design a study
- Collect and analyze data
- Draw conclusions
- Communicate findings

# The Goals of Psychology

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Psychologists seek to accomplish one or more of the following goals:

1. Describe
2. Explain
3. Prediction
4. Control

# Description

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## Goal 1

To describe the behavior or mental processes accurately and completely.

# Explanation

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## Goal 2

- To explain why a particular behavior or mental process occurred.

# Predication

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## Goal 3

- To specify the conditions under which a behavior or event is likely to occur.

# Control

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## Goal 4

- To apply a principle or change a condition to prevent unwanted occurrences or to bring about desired outcomes.

# Two Types of Research

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## 1. Applied research

- To solve practical problems and improve the quality of life.

## 2. Basic research

- to seek new knowledge and explore and advance scientific knowledge.

# Aspects of Critical Thinking

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Researchers need to think critically.

- ❑ Independent thinking
- ❑ Suspension of judgment
- ❑ Willingness to modify or abandon prior judgments

# Hypothesis

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- ❑ Educated guess about some phenomenon
- ❑ Must be stated in clear precise language so there is no confusion about its meaning.

# Methods of Research

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1. Descriptive Research Methods
2. Experimental Research Methods
3. Correlational Method

# Descriptive Research Methods

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4. Naturalistic observation

5. Laboratory observation

6. Case study

7. Survey

# Naturalistic Observation

Descriptive

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- A research method in which the researchers observe and record behavior in its natural setting without attempting to influence or control it.

# Naturalistic Observation

Descriptive

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## Advantage

- ❑ Allows study under normal conditions instead of artificial conditions

## Limitations

- ❑ Researchers have to wait for events to occur
- ❑ Observer Bias

# Laboratory Observation

## Descriptive

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- ❑ Studying behavior by observation in a laboratory, not in a natural setting. Researchers can exert more control and use more precise equipment to measure responses.

# Case Study

## Descriptive

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- A single individual or a small number of persons are studied in great depth, usually over an extended period of time.

# Case Study

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## Advantage

- ❑ good source for rare or unusual situations

## Limitations

- ❑ May not be representative
- ❑ Time consuming
- ❑ Researcher bias

# Survey

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- A method of study in which researchers use interviews and/or questionnaires to gather information about the attitudes, beliefs, experiences, or behaviors of a group of people.
  
- Methods of Research Descriptive

# Survey

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## Advantage

- ❑ provide accurate information about large groups
- ❑ Can track changes over time

## Limitations

- ❑ Sample may not be representative
- ❑ Responses may be inaccurate
- ❑ Researcher may influence response

# Experimental Method

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- Only method that can be used to identify cause and effect between two conditions or variables.

# Experimental Method

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## □ Variables

- Independent Variable
- Dependent Variable

Every experiment includes one or more independent variables

## □ Groups studied

- Experimental Group
- Control Group

Most experiments use two or more groups of participants.

# Independent Variables

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- ❑ Independent variables  
any variable that can be manipulated in order to determine effect on another variable.
- ❑ Referred to as the treatment.
- ❑ The experimental group is exposed to the independent variable.

# Dependent Variable

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- Is measured at the end of the experiment .
- It is hypothesized to increase or decrease as a result of the manipulations of the independent variable.

# Experimental Groups

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- The experimental group is the group that is exposed to the independent variable (the treatment).

# Control Groups

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- ❑ Are similar to the experimental group
- ❑ The control group is exposed to the same experimental environment as the experimental group but it is not given the treatment.
- ❑ Allows researchers to compare the effects of the independent variable with “natural” behavior.

# Correlational Method

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- ❑ Determines the correlation, or degree of relationship between two variables (characteristics, events or behaviors).
- ❑ Is used when for ethical reasons the experimental study cannot be used.
- ❑ A group is selected, and the variables of interest are measured for each participant.

# Correlation Coefficient

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- ❑ A numerical value indicating the degree and direction of the relationship between two variables.
- ❑ Ranges from +1.00 ( a perfect positive correlation) to .00 (no relationship) to -1.00 ( a perfect negative correlation).
- ❑ The number refers to the strength of the relationship.

# Positive & Negative Correlation

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- ❑ A positive correlation indicates that the two variables vary in the same direction.
  
- ❑ A negative correlation means that an increase in the value of one variable is associated with a decrease in the value of the other variable.

# Two Approaches to Summarizing Multiple Studies

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- 1. Box-score approach (counting) researches review studies on one topic and tally the results.
- 2. Meta-analysis perform statistic analysis that combines the results of all the studies

# Meta-analysis

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- ❑ Yields a effect number known as  $d$
- ❑  $d$  value less than 0.35 is a small difference
- ❑  $d$  value greater than 0.65 is a large difference

# Potential Problems in Experimental Research

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1. Selection Bias

2. The Placebo Effect

3. Experimental Bias

# Potential Problems in Experimental Research

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## Selection Bias

- ❑ Occurs when there are systematic differences among groups before the experiment begins.
- ❑ Random assignment maximizes the probability that groups are similar at the beginning of the experiment.

# Potential Problems in Experimental Research

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## The Placebo Effect

- ❑ Occurs when a person's expectations influence the outcome of a treatment or experiment.
- ❑ To control, researchers must make certain that participants do not know which group they belong to.

# Potential Problems in Experimental Research

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## Experimental Bias

- ❑ Occurs when the researcher's expectations affect the outcome of the experiment.
- ❑ It is controlled by using the double-blind technique, neither researcher or participants know which group they are in.

# Biases in the Gender Study

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- ❑ Most Researchers have strong preexisting emotions, values and opinions about men and women.
- ❑ May adhere to a specific psychological theory

# Biases in the Gender Study

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- ❑ Expectations can influence results
- ❑ Biased samples can influence results
- ❑ Gender differences do not occur in all situations

# Biases in the Gender Study

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## Interpreting Data

- ❑ Statistical Significance results not likely to occur by chance
- ❑ Practical Significance results have useful implications for the real world.