Psychopathology
Research Methods

What you should know when you finish studying Chapter 4: Research Methods

1. Basic components of research: Hypothesis, Independent and Dependent variables
2. Important considerations in research design: Internal and External Validity, Statistical and Clinical Significance
3. Types of research designs used to study psychopathology

Psychopathology
Research Methods

What you should know when you finish studying Chapter 4: Research Methods

4. Aims and purposes of Behavior Genetics designs for studying psychopathology
5. Cross-sectional versus longitudinal designs: Advantages and disadvantages
6. Cross-cultural Designs
7. Need for Replication
8. Ethical principles in the research process

Psychopathology
Research Methods

- Nature of Science
  - Way of knowing unlike normal everyday ways of knowing
  - Values empiricism, objectivity, and replicability
  - Demands rigorous standards of proof
  - A means for testing hypotheses and theoretical claims
  - A human enterprise that is value laden, not value free

Psychopathology
Research Methods

- Questions Driving a Science of Psychopathology
  - What problems cause distress or impair functioning?
  - Why do people behave in unusual ways despite sometimes severe negative consequences?
  - How can we help people behave in more adaptive ways?

Basic components of research: Hypothesis, Independent and Dependent variables

- Research Starts with a Hypothesis or "Educated Guess"
  - Not all hypotheses are testable
  - Scientific hypotheses must be testable
- Research Design
  - A method to test hypotheses
  - Independent variable – The variable that causes or influences behavior
  - Dependent variable – The behavior influenced by the independent variable

Important considerations in research design: Internal and External Validity

- Balancing Internal vs. External Validity
  - Internal validity – Did the independent variable produce the outcomes?
  - External validity – Are the findings generalizable? Was the sample representative?
- Ways to Increase Internal Validity by Minimizing Confounds
  - Use of control groups
  - Use of random assignment procedures
  - Use of analogue models
- Relation Between Internal and External Validity

Important considerations in research design: Statistical and Clinical Significance

- Statistical Methods
  - Branch of mathematics
  - Helps to protect against biases in evaluating data
- Statistical vs. Clinical Significance
  - Statistical significance – Are the results due to chance?
  - Clinical significance – Are the results clinically meaningful?
  - Statistical significance does not imply clinical meaningfulness
- Balancing Statistical vs. Clinical Significance
  - Evaluate effect size
  - Evaluate social validity
- Generalizability and the Patient Uniformity Myth

Types of research designs used to study psychopathology

Studying Individual Cases: Case Study Method

- Nature of the Case Study
  - Extensive observation and detailed description of a client
  - Foundation for early developments in psychopathology
- Limitations of the Case Study
  - Lacks scientific rigor and suitable controls
  - Internal validity is typically weak
  - Often entails numerous confounds

Types of research designs used to study psychopathology

Research by Correlation

- The Nature of Correlation
  - Statistical relation between two or more variables
  - No independent variable is manipulated
- Correlation and Causation
  - Problem of directionality
  - Correlation does not mean causation
- Nature of Correlation and Strength of Association
  - Range from –1.0 to 0 to +1.0
  - Negative vs. positive correlation

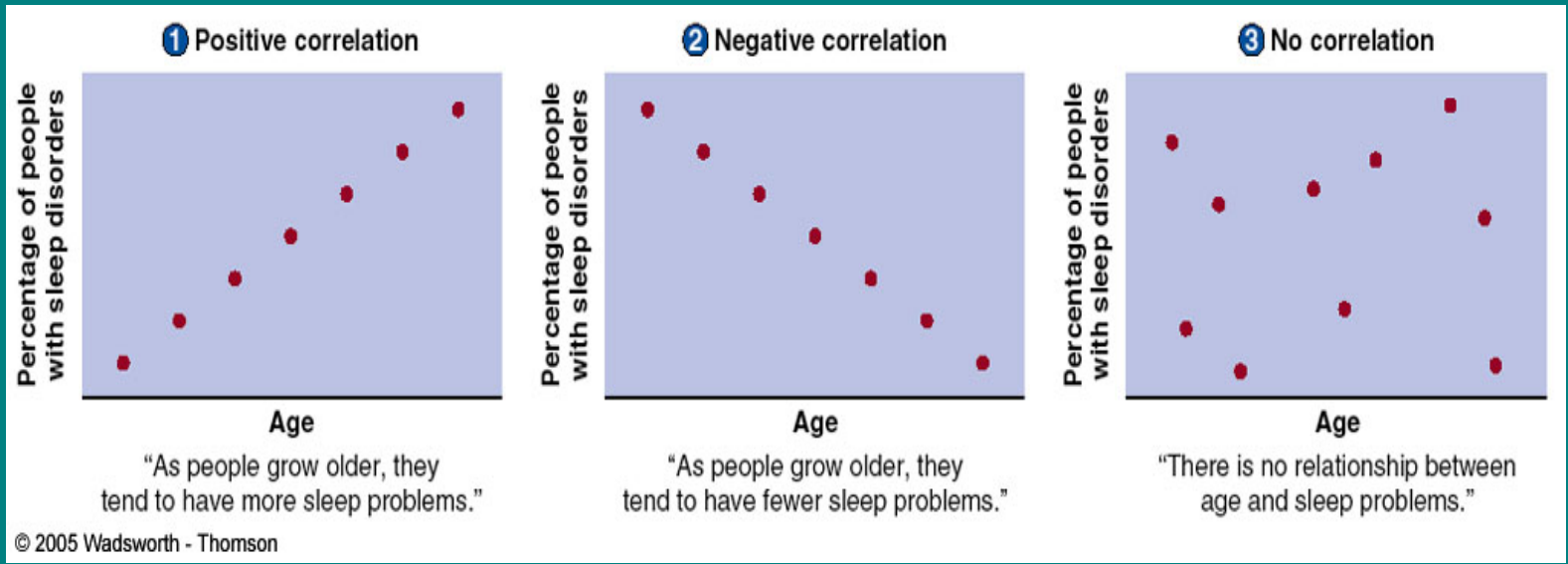
Types of research designs used to study psychopathology

Research by Correlation (continued)

- Epidemiological Research
  - An example of correlational methods
  - Study incidence, prevalence, and course of disorders
  - Examples – AIDS, trauma following a disaster

Types of research designs used to study psychopathology

Research by Correlation (continued)



Types of research designs used to study psychopathology

Experimental Designs

- Nature of Experimental Research
  - Manipulation of independent variables
  - Attempt to establish causal relations
  - Premium on internal validity
- Group Experimental Designs
  - Nature and purpose of control groups
  - Placebo vs. double-blind controls

Types of research designs used to study psychopathology

Experimental Designs (continued)

- Comparative Treatment Designs
  - Type of group design
  - Compare different forms of treatment in similar persons
  - Addresses treatment process and treatment outcome

Types of research designs used to study psychopathology

Single Case Experimental Designs

- Nature of Single Subject Design
  - Rigorous study of single cases
  - Over varied experimental conditions and time
  - Repeated measurement
  - Evaluation of variability, level, and trend
  - Premium on internal validity
- Types of Single-Subject Design
  - Withdrawal designs: Nature, assets, and liabilities
  - Multiple baseline designs: Assets and liabilities

Types of research designs used to study psychopathology

Behavioral Genetics Research

- Interaction among genes, experience, and behavior
- Phenotype vs. genotype

- Strategies Used in Genetic Research
  - Family studies – Examine behavioral pattern/emotional traits in family members
  - Adoptee studies – Allow separation of environmental from genetic contributions
  - Twin studies – Evaluate psychopathology in fraternal vs. identical twins
  - Genetic linkage and association studies – Locate site of defective gene

Types of research designs used to study psychopathology

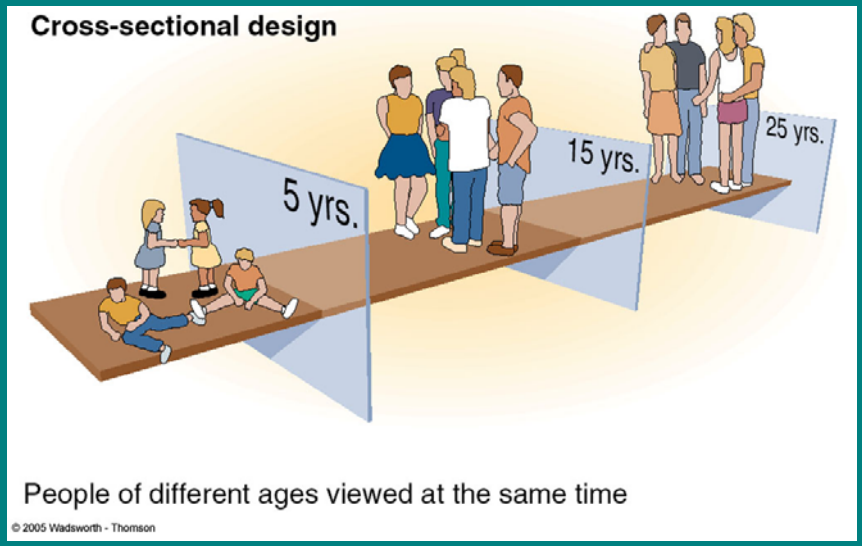
Time-Based Research Designs

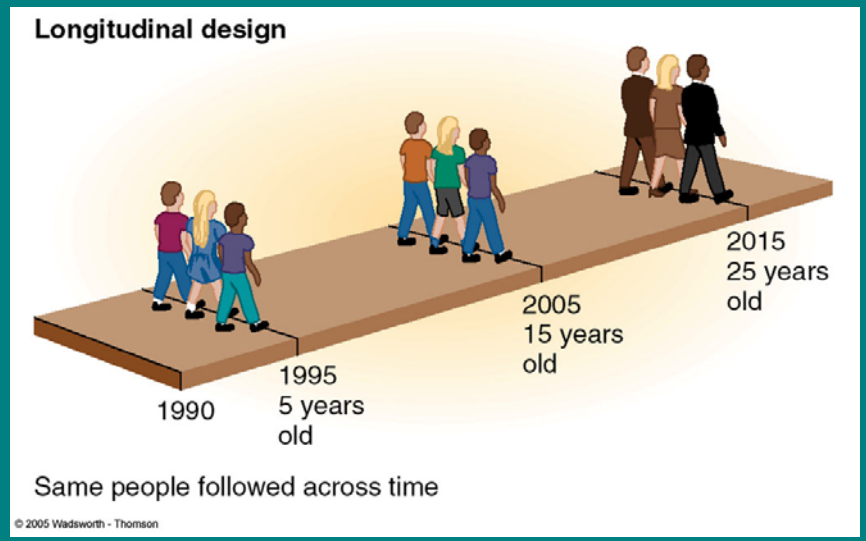
- Rationale and Overview
  - How does the problem or behavior change over time?
  - Important in prevention and treatment research

Types of research designs used to study psychopathology

- Time-Based Research Strategies
  - Cross-sectional designs and the cohort effect
  - Longitudinal designs and the cross-generational effect
  - Sequential designs – Combines cross sectional and longitudinal designs
- Assets and Liabilities of Time-Based Research Strategies

Types of research designs used to study psychopathology





Types of research designs used to study psychopathology

- Value of Cross-Cultural Research
  - Overcoming ethnocentric research
- Assets and Liabilities of Cross Cultural Research
  - Assets – Clarify how psychopathology manifests in different ethnic groups
  - Problems with cross-cultural research

Types of research designs used to study psychopathology

- Components of a Research Program
  - A tree with many branches
  - Addresses inter-related research questions:
  - Draws on several methodologies to find answers
  - Conducted in stages, often involving **replication**

Research Ethics

- Role of Institutional Review Boards and APA Ethics Codes
- Informed consent – Historical evolution post WWII
- Competence – Ability to provide consent
- Voluntarism – Lack of coercion
- Full information – Necessary to make an informed decision
- Comprehension – Understand benefits / risks

http://www.citiprogram.org/

Summary—Chapter 4

- Nature of Research
  - Establishing and testing hypotheses
  - Occurs in the context of ethics and values
- Value of Research Designs
  - Vary depending on the questions posed
- Psychopathology Is Founded in the Scientific Method
  - Focus on the nature of abnormality and human suffering
  - Address causes of psychological disorders
  - Clarify the course of psychological disorders
  - How to prevent and treat psychological disorders
- Replication
  - Cornerstone of science and programmatic research