## Chapter 1: Why Do We Use Statistics?

### Test Bank

### Multiple Choice

1. Descriptive research can be summarized as:
a. study that describes a specific social phenomenon or attributes
b. study that shows the characteristics of relationship between variables
c. study that predicts relationships
d. study that establishes association
Ans: A
Cognitive Domain: Comprehension
Answer Location: Some Examples of Types of Research
Difficulty Level: Medium

2. Practical significance indicates whether:
a. statistical significance exists or not
b. the study findings can be generalized to the study population
c. the results could be explained by chance alone
d. the study findings are clinically noteworthy
Ans: D
Cognitive Domain: Knowledge
Answer Location: Practical Significance and Statistical Significance & on Page 8
Difficulty Level: Easy

3. Professional social workers use explanatory research when they:
a. want to study relatively unknown phenomenon
b. wish to study one group's views on a topic
c. study self-contained social groups
d. seek to explain social phenomena by examining the relationship between two or more variables
Ans: D
Cognitive Domain: Comprehension
Answer Location: Some Examples of Types of Research

Difficulty Level: Medium

4. Evaluative research can be described as research that:

a. explores unknown areas of social phenomenon

b. evaluates the funding source of a service or set of services and programs

c. is also a form of descriptive research

d. uses statistics to evaluate the impact of a chosen treatment on a sample of clients and make inferences about the population from which the sample was chosen

Ans: D

Cognitive Domain: Comprehension

Answer Location: Some Examples of Types of Research

Difficulty Level: Medium

5. One of the following is not a key factor to consider before beginning your data analysis:

a. the level of measurement of the variables

b. the nature of data (related or independent)

c. funding source

d. study design

Ans: C

Cognitive Domain: Comprehension

Answer Location: The Structure of Our Data

Difficulty Level: Medium

6. A *p* value that is less than 0.05 for a study in social science does not mean which of the following:

a. the findings of the study would be expected to occur by chance less than 5 times in 100.

b. statistical significance has been achieved according to the normally accepted standard for the validity of your findings in the social sciences

c. the data support the hypothesis

d. statistical significance has not been achieved

Ans: D

Cognitive Domain: Comprehension

Answer Location: Statistical Significance

Difficulty Level: Hard

7. The important factors to consider in data analysis are:

a. research question and the structure of data

b. statistical test

c. research question, the structure of data, statistical test, and the use of computer

d. use of relevant computer applications for statistical analysis

Ans: C

Learning Objective: Preparing to conduct data analysis

Cognitive Domain: Knowledge

Answer Location: What You Will Find in the Rest of this Chapter

Difficulty Level: Medium

8. The difference between “Inferential Statistics” and “Descriptive Statistics” is:

a. inferential statistics are used to test an explanatory or evaluative hypothesis, whereas a descriptive statistic may be used to describe or summarize the distribution of a single variable

b. descriptive statistics are used to examine associations and patterns, whereas inferential statistic may be used to describe or summarize the distribution of a single variable

c. inferential statistic can be used only to describe or summarize the distribution of multiple variables

d. descriptive statistics can be used only to evaluate the impact of a program on the client population

Ans: A

Cognitive Domain: Knowledge

Answer Location: Descriptive and Inferential Statistics

Difficulty Level: Medium

9. Please select the important factors to consider in data analysis:

a. research question

b. sample size

c. research question, the structure of data, statistical test, and the use of computer

d. use of relevant computer applications for statistical analysis

Ans: C

Learning Objective: Preparing to conduct data analysis

Cognitive Domain: Knowledge

Answer Location: What You Will Find in the Rest of this Chapter

Difficulty Level: Medium

10. When you use CESD's Depression scale as a tool of measurement, the variable you are measuring is:

a. grief

b. well-being

c. depression

d. low identity

Ans: C

Learning Objective: To understand the importance of concepts, variables, and measurement definition

Cognitive Domain: Knowledge

Answer Location: Variables

Difficulty Level: Medium

11. Explanatory research is close to:

a. descriptive research

b. exploratory research

c. evaluative research

d. survey research

Ans: C

Learning Objective: To differentiate between different types of research

Cognitive Domain: Knowledge

Answer Location: Some Examples of Types of Research

Difficulty Level: Medium

12. When you have two measurements—one before the treatment and one after the treatment and have a comparison group, it helps in:

a. controlling the effect size

b. reducing the cost of the study

c. eliminating the role of chance

d. using a limited number of variables

Ans: C

Learning Objective: To understand the importance of baseline and comparison groups in evaluating the impact of a treatment/service/program

Cognitive Domain: Application

Answer Location: Why We Use Statistics

Difficulty Level: Hard

13. Research question and the structure of data are:

a. important factors in the description of variables

b. important factors in data analysis

c. important factors only in qualitative data analysis

d. important factors only when you use the computer for data analysis

Ans: B

Learning Objective: Preparing to conduct data analysis

Cognitive Domain: Knowledge

Answer Location: What You Will Find in the Rest of this Chapter

Difficulty Level: Medium

14. When you have a hypothesis that states the relationship between self-efficacy and self-esteem, the variables of the study are:

a. self-efficacy and Relationship

b. well-being and Self-esteem

c. self-satisfaction and Relationship

d. self-esteem and Self-efficacy

Ans: D

Learning Objective: To understand the importance of concepts, variables, and measurement definition

Cognitive Domain: Knowledge

Answer Location: Variables

Difficulty Level: Easy

15. Evaluative research is a form of:

a. descriptive research

b. explanatory research

c. exploratory research

c. qualitative research

Ans: B

Learning Objective: To differentiate between different types of research

Cognitive Domain: Knowledge

Answer Location: Some Examples of Types of Research

Difficulty Level: Easy

16. When we know an already known factor such as a national proportion, this can be used as:

a. a sample

b. the threshold fraction

c. a statistical significance measure

d. a tool for description

Ans: B

Learning Objective: To understand the importance of a baseline data and the relevance of a known threshold as a substitution

Cognitive Domain: Comprehension

Answer Location: Data Analysis with an Excel File

Difficulty Level: Hard

**True/False**

1. Establishing statistical significance is important to determine whether the results of the study occurred due to chance or not.

Ans: T

Cognitive Domain: Knowledge

Answer Location: Basic Concepts We Need to Know

Difficulty Level: Medium

2. The concept of statistical significance is simply the estimation and description of the variables.

Ans: F

Cognitive Domain: Knowledge

Answer Location: Statistical Significance

Difficulty Level: Hard

3. Statistical significance can be established to eliminate the role of chance by having two measurements—one before the treatment and one after the treatment and have a comparison group.

Ans: T

Learning Objective: To understand the importance of baseline and comparison groups in evaluating the impact of a treatment/service/program

Cognitive Domain: Application

Answer Location: Why We Use Statistics

Difficulty Level: Medium

4. The difference between a “sample” and the “population” is that the sample consists of those whose responses constitute the data and the population includes the sample.

Ans: T

Learning Objective: To understand the difference between the sample and the population and thus understand the role of inferential statistics

Cognitive Domain: Comprehension

Answer Location: Descriptive and Inferential Statistics

Difficulty Level: Easy

5. The Excel file described in this chapter uses a regional proportion as the threshold fraction for comparison.

Ans: F

Learning Objective: To understand the importance of a baseline data and the relevance of a known threshold as a substitution

Cognitive Domain: Comprehension

Answer Location: Data Analysis with an Excel File

Difficulty Level: Hard

6. Hypotheses do not state the relationship between the variables pertaining to your research question.

Ans: F

Learning Objective: To understand the role of hypotheses in research

Cognitive Domain: Knowledge

Answer Location: What You Will Learn from this Book

Difficulty Level: Easy

7. Explanatory and evaluative research hypotheses differ from other forms of hypotheses because these hypotheses examine client progress as a consequence of the intervention.

Ans: T

Learning Objective: To understand the importance of evaluation in the practice of therapeutic interventions and being accountable professionals

Cognitive Domain: Application

Answer Location: What You Will Learn from this Book

Difficulty Level: Medium

8. Statistics can be useful only in evaluative research.

Ans: F

Learning Objective: To understand the broader use and implications of statistical techniques in human services

Cognitive Domain: Knowledge

Answer Location: Using Statistics to Describe Clients

Difficulty Level: Easy

9. Practical significance focuses on the statistical test to be used.

Ans: F

Learning Objective: To understand the preliminary factors pertaining to when and how practical significance can be assumed

Cognitive Domain: Knowledge

Answer Location: Practical Significance

Difficulty Level: Easy

10. Human service professionals prefer to do study with populations rather than sample.

Ans: F

Learning Objective: To understand the difference between the sample and the population and thus understand the role of inferential statistics

Cognitive Domain: Comprehension

Answer Location: Descriptive and Inferential Statistics

Difficulty Level: Easy

11. Hypotheses state the relationship between the variables pertaining to your research question.

Ans: T

Learning Objective: To understand the role of hypotheses in research

Cognitive Domain: Knowledge

Answer Location: What You Will Learn from this Book

Difficulty Level: Easy

12. Descriptive studies cannot be conducted without hypothesis.

Ans: F

Learning Objective: To understand the importance of evaluation in the practice of therapeutic interventions and being accountable professionals

Cognitive Domain: Comprehension

Answer Location: What You Will Learn from this Book

Difficulty Level: Easy

13. Descriptive research relies do not rely on inferential statistics to analyze the data.

Ans: T

Learning Objective: To understand the broader use and implications of statistical techniques in human services

Cognitive Domain: Knowledge

Answer Location: Using Statistics to Describe Clients

Difficulty Level: Medium

14. Magnitude as a concept related to practical significance focuses on factors such as resources expended to achieve the result.

Ans: T

Learning Objective: To understand the preliminary factors pertaining to when and how practical significance can be assumed

Cognitive Domain: Knowledge

Answer Location: Practical Significance

Difficulty Level: Easy

**Short Answer**

1. Why do we use inferential statistics when we are testing a hypothesis in evaluative research?

Ans: A hypothesis is a statement of educated prediction until it is tested to be evidenced by the statistical significance of the relationship between the variables in the hypothesis.

Cognitive Domain: Application

Answer Location: Inferential Statistics and Descriptive Statistics

Difficulty Level: Medium

2. Why do human service professionals need to engage in evaluative research?

Ans: Human service professionals are accountable to various entities and because evaluative research uses the same principles as explanatory research, it is possible for the professionals, through statistical tools, to establish statistical significance and eliminate the role of chance is to:

Learning Objective: To understand the importance of baseline and comparison groups in evaluating the impact of a treatment/service/program

Cognitive Domain: Application

Answer Location: Why We Use Statistics

Difficulty Level: Medium

3. Data analysis is a methodical process. Explain the reasons.

Ans: When we engage in data analysis, we take into consideration certain factors such as the study/research questions that we used in our study, the structure of the data collected from the study inclusive of the level of measurement of the variables, and the specific statistical tests to be used and the use of statistical packages to be used with the aid of computers.

Learning Objective: Preparing to conduct data analysis

Cognitive Domain: Knowledge

Answer Location: What You Will Find in the Rest of this Chapter

Difficulty Level: Medium

4. Study variables need to vary. Please explain.

Ans: Study variables are not constant. They need to vary so that we can measure the distribution of the scores on the variables that we are interested in studying as indicated by our hypothesis and make comparisons between two groups or between the pretest and posttest scores of a single group.

Learning Objective: To understand the importance of concepts, variables, and measurement definition

Cognitive Domain: Knowledge

Answer Location: Variables

Difficulty Level: Medium

## Essay

1. Why is it important to choose a representative sample for our study?

Ans: Because a population is a bigger group than the sample, we choose a sample that represents the population either through a random or non-random sampling method depending upon the availability of the subjects and the study question/hypothesis. A representative sample consists of those whose responses constitute the data and the population of the study as we define it, includes the sample we choose to study. A representative sample is inclusive of all the relevant groups of interest as dictated by our study variables, and we may use randomization along with random sampling in order to eliminate the role of chance in our data and subsequent study findings. A representative random sample is necessary to meet the assumptions of many of the statistical tests used in inferential statistics.

Learning Objective: To understand the difference between the sample and the population and thus understand the role of inferential statistics

Cognitive Domain: Comprehension

Answer Location: Descriptive and Inferential Statistics

Difficulty Level: Medium