



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY SCIENCES
KENYA REGISTERED COMMUNITY HEALTH NURSING
Supplementary/Special Examination Dec 2024

COURSE CODE AND TITLE: DNS 224: Nursing Research

DATE: WEDNESDAY 11TH DECEMBER 2024

TIME: 2 Hours

START: 0900 HOURS

FINISH: 1100 HOURS

INSTRUCTIONS

- 1. This exam will be marked out of 70 Marks**
- 2. ALL Questions are compulsory.**
- 3. The Examination has Three Sections: Section I- Multiple Choice Questions, Section II: Short Answer Questions, Section III: Long Essay Questions**
- 4. Answer all Questions in the ANSWER BOOKLET provided**
- 5. Do Not write anything on the question paper -use the back of your booklet for rough work if need be.**

SECTION I: MULTIPLE CHOICES QUESTIONS (20 MARKS)

1. The following best describes the difference between reliability and validity in research: -

- a) Reliability is the accuracy of a measure, while validity is its consistency.
- b) Reliability is the consistency of a measure, while validity is its accuracy.
- c) Reliability is the variability of a measure, while validity is its relevance.
- d) Reliability and validity both measure the accuracy of a research tool.

2. The most appropriate statistical for comparing the means of three or more independent groups is:-

- a) T-test
- b) Chi-square test
- c) ANOVA
- d) Regression analysis

3. In qualitative research, the method is used to ensure the credibility of the data

is:-

- a) Triangulation
- b) Random sampling
- c) Blinding
- d) Hypothesis testing

4. The following best defines a confounding variable:-

- a) A variable that is manipulated by the researcher
- b) A variable that is influenced by the independent variable
- c) A variable that systematically varies with the independent variable and affects the dependent variable
- d) A variable that measures the effect of the dependent variable

5. The primary purpose of conducting a power analysis before a study is:-

- a) To increase the likelihood of finding a statistically significant result
- b) To determine the appropriate sample size needed to detect an effect
- c) To identify potential confounding variables
- d) To ensure the reliability of the measurement tools

6. The type of research design is most susceptible to the threat of internal validity due to maturation is:-

- a) Cross-sectional design
- b) Longitudinal design
- c) Experimental design
- d) Case-control design

7. The most effective method for controlling for participant variability in an experimental study is:-

- a) Random assignment
- b) Matching
- c) Random sampling
- d) Stratification

8. The following is a non-parametric test used to compare the distributions of two independent samples:-

- a) Independent t-test
- b) Mann-Whitney U test
- c) Paired t-test
- d) Wilcoxon signed-rank test

9. In a research study, an example of an operational definition is:-
- a) Defining happiness as a state of well-being and contentment
 - b) Defining anxiety as the score obtained on a specific anxiety questionnaire
 - c) Defining intelligence as the ability to learn and solve problems
 - d) Defining health as the absence of disease
10. The statistical method used to predict the value of a dependent variable based on the value of one or more independent variables is:-
- a) Factor analysis
 - b) Path analysis
 - c) Regression analysis
 - d) Structural equation modeling
11. The main advantage of using a double-blind study design is:-
- a) It reduces the variability in the data
 - b) It ensures the study's external validity
 - c) It minimizes bias from both participants and researchers
 - d) It increases the sample size

12. The following statement best describes the Hawthorne effect:-

- a) Participants alter their behavior because they know they are being observed
- b) The placebo effect experienced by participants in a control group
- c) The tendency for researchers to find what they expect to find
- d) The effect of the independent variable on the dependent variable

13. In research ethics, the principle of "beneficence" refers to:-

- a) The obligation to treat all participants fairly and equitably
- b) The responsibility to maximize benefits and minimize harm to participants
- c) The requirement to obtain informed consent from participants
- d) The commitment to maintain participant confidentiality

14. The following is an example of a within-subjects design:-

- a) Comparing two different groups at a single point in time
- b) Measuring the same participants at multiple points in time
- c) Randomly assigning participants to different treatment groups
- d) Using matched pairs of participants across treatment groups

15. The method used to visually inspect the distribution of a dataset is:-

- a) Boxplot
- b) Histogram
- c) Scatterplot
- d) Line graph

16. The main purpose of a literature review in a research study is to:-

- a) Collect primary data from participants
- b) Summarise and critique existing research on a topic
- c) Formulate the study's hypothesis
- d) Analyse and interpret research findings

17. The following is a key characteristic of qualitative research:-

- a) Use of large, randomly selected samples
- b) Focus on numerical data and statistical analysis
- c) Exploration of complex phenomena through detailed, narrative data
- d) Testing of specific hypotheses

18. In research, the term for a variable that mediates the relationship between the independent and dependent variables is:-

- a) Confounding variable
- b) Moderator variable
- c) Mediator variable
- d) Control variable

19. The type of validity is concerned with the extent to which a test measures what it claims to measure is:-

- a) Content validity
- b) Construct validity
- c) Criterion validity
- d) External validity

20. Which of the following is a primary characteristic of action research?

- a) Focus on theoretical development
- b) Emphasis on experimental control and manipulation
- c) Collaboration with participants to solve a practical problem
- d) Use of standardized measures and instruments

SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)

21. Define the following terms:

a) Reliability. (2 marks)

b) Validity. (2 marks)

22. Explain the importance of triangulation in qualitative research. (4 marks)

23. Discuss the threats to internal validity in experimental research. (4 marks)

24. Outline the steps involved in conducting a systematic literature review. (4 marks)

25. Explain the concept of external validity and its significance in research. (4 marks)

26. Describe the ethical considerations in conducting research with vulnerable populations. (6 marks)

27. Discuss non-probability sampling techniques used in research. (4 marks)

SECTION III: LONG ANSWER QUESTIONS (20MARKS)

28A researcher is investigating the effects of a new medication on blood pressure levels in a hypertensive population. The study involved 200 participants who were randomly assigned to either the treatment group or the placebo group. After three months, the blood pressure levels of participants were recorded. The data below represents the systolic blood pressure levels (in mm Hg) of participants in the treatment group:

Blood Pressure Range (mm Hg) Frequency (f)

120-129	8
130-139	22
140-149	30
150-159	50
160-169	45
170-179	25
180-189	15
190-199	5

Questions:

1. Calculate the arithmetic mean systolic blood pressure level of the participants in the treatment group. (5 marks)

2. Calculate the variance and standard deviation of the systolic blood pressure levels.
(5 marks)
3. Describe the sampling technique used in this study and explain its significance. (5 marks)
4. Discuss the data collection methods that could be used to gather blood pressure levels in this study. (5 marks)

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