

# C E E X A M

## Research Methodology: Some Statistical Consideration

Upon completion of this article, the successful participant should be able to:

1. explain the term "statistical significance."
2. discuss the impact of the number of subjects on statistics.
3. differentiate between parametric and nonparametric tests.
4. discuss the importance of mean and variance in data analysis.
5. differentiate correlation and causation.

### SELF-ASSESSMENT QUESTIONS

1. Statistical tests are:
  - a. either parametric or nonparametric.
  - b. only parametric.
  - c. only nonparametric.
  - d. neither parametric nor nonparametric.
2. When the research article reports  $p < 0.05$ , this usually refers to a:
  - a. lack of difference between two or more groups.
  - b. statistically significant difference.
  - c. clinical difference that may have little statistical significance.
  - d. small sample size.
3. When the research article reports  $p < 0.05$ , this would usually mean a \_\_\_\_ t-value.
  - a. small
  - b. insignificant
  - c. large
4. A Type I error would be:
  - a. reporting no difference when one existed.
  - b. reporting a difference when one did NOT exist.
  - c. using too large of a sample size.
  - d. running a parametric statistic inappropriately.
5. Using a t-test with a sample size of 10 to report that two medications were equally effective could be a:
  - a. Type I error.
  - b. Type II error.
  - c. correlation.
  - d. significant difference.
6. A larger sample size \_\_\_\_\_ a significant difference compared to a smaller sample size.
  - a. makes it harder to show
  - b. has no effect on showing
  - c. makes it easier to show
7. If the variance of a sample was four, which number would be larger?
  - a. Variance
  - b. Standard deviation
8. When two variables are correlated, then one can be said, statistically, to cause the other.
  - a. True
  - b. False
9. When two means from two questions on a survey are about the same:
  - a. the standard deviation of the scores will be the same.
  - b. the distribution of the scores will be different.
  - c. the standard deviation of the scores might help understand the results.
  - d. the data cannot be analyzed with statistics.
10. To test for significant differences between three groups, the best choice is:
  - a. correlation.
  - b. t-test.
  - c. analysis of variance.



See text of article beginning on page 617 of this issue of *JMCP*.

This article qualifies for 1 hours of continuing pharmaceutical education (0.10 CEU). The Academy of Managed Care Pharmacy is approved by the American Council on Pharmaceutical Education as a provider of continuing pharmaceutical education. This is program number 233-000-98-006-H04 in AMCP's educational offerings.

# CE EXAM

## DEMOGRAPHIC INFORMATION (not for scoring)

11. In what type of setting do you work (leave blank if none of the responses below applies)?

- a. HMO.
- b. PPO.
- c. Indemnity insurance.
- d. Pharmacy benefits management.
- e. Other.

12. Did this program achieve its educational objectives?

- a. Yes.
- b. No.

13. How many minutes did it take you to complete this program, including the quiz (fill in on answer sheet)?

14. Did this program provide insights relevant or practical for you or your work?

- a. Yes.
- b. No.

15. Please rate the quality of this CE article.

- a. Excellent.
- b. Good.
- c. Fair.
- d. Poor.

## INSTRUCTIONS

This quiz affords 1 hour (0.10 CEU) of continuing pharmaceutical education in all states that recognize the American Council on Pharmaceutical Education. To receive credit, you must score at least 70% of your quiz answers correctly. To record an answer, darken the appropriate block below. Mail your completed answer sheet to: Academy of Managed Care Pharmacy, 100N. Pitt Street, Suite 400, Alexandria, VA 22314. Assuming a score of 70% or more, a certificate of achievement will be mailed to you within 30 days. If you fail to achieve 70% on your first try, you will be allowed only one retake. The ACPE Provider Number for this lesson is 233-000-98-006-H04. This offer of continuing education credits expires October 31, 1999.

	A	B	C	D
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	A	B	C	D
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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9.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

11.  A  B  C  D  E  
12.  Yes  No  
13. Minutes \_\_\_\_\_  
14.  Yes  No  
15.  A  B  C  D

## Participant Identification: Please type or print

Date \_\_\_\_\_

Social Security # \_\_\_\_\_  
For Identification Purposes Only

Name \_\_\_\_\_  
Last First Middle

Work Phone # \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_  
Street (with Apt. No.) or P.O. Box City State Zip

State and Lic. No. \_\_\_\_\_  
State No.

Member Type:  Active  Supporting Associate  
 Student  Nonmember

Signature \_\_\_\_\_