

## Practitioner Update—Educational Objectives

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

1. differentiate between experimental and nonexperimental research.
2. describe various types of nonexperimental research and how they are used.
3. explain how to control the effects of extraneous variables.
4. describe the limitations of experimental research.
5. describe the various research designs and their strengths and weaknesses.
6. differentiate between longitudinal and cross-sectional research designs.
7. describe how the various methods of sampling from a population are used in research.

### SELF-ASSESSMENT QUESTIONS

Use the following scenario to answer Questions 1-4.

In an attempt to assess the effectiveness of physician intervention letters for antiulcer medication prescribing, Medicaid prescription claims were analyzed for patients receiving this therapy. Half of these patients' physicians received an intervention letter. Those who would receive a letter were chosen at random. The prescribing patterns of the physicians receiving the intervention letter were compared with the prescribing patterns of those physicians who had not been sent an intervention letter. Results indicated that physicians receiving the letter used less-duplicative antiulcer medications.<sup>1</sup>

1. The two groups (those that received or did not receive the letter) represent
  - a. the dependent variable.
  - b. the independent variable.
  - c. external validity.
  - d. random selection.
  - e. stratified random sampling.
2. The determination of which physician would receive a letter and which would

- not was random. This would be an example of
  - a. a dependent variable.
  - b. systematic sampling.
  - c. external validity.
  - d. random selection.
  - e. random assignment.
3. This design would best be described as
  - a. descriptive research.
  - b. case study research.
  - c. qualitative research.
  - d. experimental research.
  - e. quasi-experimental research.
4. The research design used for this study is best described as a
  - a. one-group pretest-posttest design (Design 2).
  - b. static-group comparison (Design 3).
  - c. pretest-posttest control group design (Design 4).
  - d. posttest-only control group design (Design 5).
  - e. time-series analysis (Design 6).
5. When an organization conducts a survey based on a representative sample of U.S. managed care users, they most likely use
  - a. simple random sampling.
  - b. stratified random sampling.
  - c. systematic sampling.
  - d. convenience sampling.
  - e. snowball sampling.
6. When a researcher pilot tests a questionnaire on his friends at work who are pharmacists, this probably would be
  - a. simple random sampling.
  - b. stratified random sampling.
  - c. systematic sampling.
  - d. convenience sampling.
  - e. snowball sampling.
7. The type of research that describes narrative responses to open-ended questions is
  - a. descriptive research.
  - b. case study research.
  - c. exploratory research.

- d. qualitative research.
- e. quasi-experimental research.
8. Which of the following statements is most accurate regarding experimental research?
  - a. Experimental research usually lacks internal validity.
  - b. MCOs usually find experimental research easy to conduct because large databases provide ready access to control groups and comparison groups.
  - c. Experimental research may have some weaknesses with regard to external validity because results determined through experimental conditions may not be generalizable to the actual practice environment.
  - d. Experimental research is the only type of research that should be conducted by MCOs.
  - e. Experimental research answers the question "what;" it does not answer "why."
9. Factors that dilute or mask the effects under study are best described as
  - a. independent variables.
  - b. dependent variables.
  - c. experimental variables.
  - d. quasi-experimental variables.
  - e. extraneous variables.
10. Which of the following is true regarding longitudinal and cross-sectional designs?
  - a. Longitudinal designs are much less expensive to conduct than cross-sectional designs.
  - b. Cross-sectional designs eliminate the effect of age as an explanation for differences among groups.
  - c. Longitudinal designs follow the same patients across time.
  - d. Cross-sectional designs suffer from two threats to internal validity: the testing effect and maturation.



See text of article beginning on page 504 of this issue of *JMCP*. This article qualifies for 2 hours of continuing pharmaceutical education (.2 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 233-000-98-005-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.

### ▲ Reference

1. Rascati KL, Okano GJ, Burch C. Evaluation of physician intervention letters, Medical Care 1995; 34: 760-66.

## INSTRUCTIONS

This quiz affords 2 hours (.2 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 233-000-98-005-H04. This offer of continuing education credits expires October 31, 1999.

	A	B	C	D	E
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	A	B	C	D	E
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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 \_\_\_\_\_