

HBHE 750: Applied Research Methods – Fall 2007 v5

Dept. of Health Behavior and Health Education, School of Public Health
University of North Carolina at Chapel Hill

Tuesdays & Thursdays, 9–10:50 am, 2301 McGavran Greenberg
Optional recitations: Tuesdays, 11–11:50 am, 0003 Hooker

Teaching Team

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Office hours are by appointment. Special help sessions may be scheduled as needed.

Course Description

Whether you see yourself as a practitioner or as a researcher, this course offers a foundation for the work required in your professional career. This overview of behavioral research methods is designed to make you a more intelligent consumer of scientific research on health behavior. Whether you need to intervene in a public health problem or want to make new scientific contributions to the field, you will benefit from being able to identify the strengths and weaknesses of work you plan. The course focuses on *quantitative* research methods and covers observational and experimental research designs, with a brief overview of *qualitative* research methods.

Course Objectives

At the completion of the course, students are able to:

1. be informed consumers of the research literature;
2. formulate research questions and testable hypotheses that apply to behavior change interventions and program evaluation; and
3. select a research design appropriate for examining a particular research question or program goal.

Website

To access the course website, go to **blackboard.unc.edu** and click on “Login.” Enter a user name and password, the same ones you use to access your UNC email account. The homepage lists of all the courses in which you are enrolled. Click on “Applied Research Methods” to reach the course website for HBHE 750.

Lectures and Recitations

Plan to attend all lectures. Students routinely say that this is the time when they do the most learning for the class. The recitations are optional for students who wish to gain a deeper understanding of the material. In the past, perhaps one in five students will attend them.

Lecture Notes

Lectures will usually be presented using PowerPoint. A preliminary slide set for each lecture will be posted at least 48 hours before the class. However, note that I reserve the option of revising the slides if I see a clearer way to present the material. Instructions for printing the slides with space for notes are posted online.

Readings

The required readings for the course include a text by Singleton and Straits and several articles. The text is available at the Caduceus Bookstore. The articles are available on Blackboard under the "Readings" link in the left hand column. Journal Club readings will be posted as the semester progresses. Supplemental readings can be read if you have time and interest.

Text

Singleton, R. A. & Straits, B. C. (2005). *Approaches to Social Research, 4th edition*. New York: Oxford University Press.

Articles (on electronic reserve) * indicates an optional supplemental reading

*American Association for Public Opinion Research (2000). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rats for Surveys*. Lenexa, Kansas: AAPOR.

Brownson, R. C., Baker, E. A., Leet, T. L., & Gillespie, K. N. (2002). *Evidence-Based Public Health*. (Ch. 3, p. 44-53 & 69-77). New York: Oxford.

*Brownson, R. C., Baker, E. A., Leet, T. L., & Gillespie, K. N. (2002). *Evidence-Based Public Health*. (Ch. 6). New York: Oxford.

*Coday, M., Boutin-Foster, C., Goldman Sher T., Tennant, J., Greaney, M. L., Saunders, S. D., & Somes, G. W. (2005). Strategies for retaining study participants in behavioral intervention trials: Retention experiences of the NIH Behavior Change Consortium. *Annals of Behavioral Medicine, 29(2 Suppl)*, 55-65.

*Cook, T. D. & Campbell, D. T. (1979). *Quasi-Experimentation: Design & Analysis Issues for Field Settings* (Ch. 2. pp. 37-94). Boston: Houghton Mifflin.

*Cook, T. D. & Campbell, D. T. (1979). *Quasi-Experimentation: Design & Analysis Issues for Field Settings* (Ch. 3. pp. 95-146). Boston: Houghton Mifflin.

*Dillman, D. A. (2000). Writing questions. In D.A. Dillman, *Mail and Internet Surveys: The Total Design Method* (Ch. 2, pp. 32-78). New York: John Wiley & Sons, Inc.

Dillman, D. A. (2000). Constructing the questionnaire. In D.A. Dillman, *Mail and Internet Surveys: The Total Design Method* (Ch. 3, pp. 79-148). New York: John Wiley & Sons, Inc.

*Dillman, D. A. (2000). Internet and interactive voice response surveys. In D.A. Dillman, *Mail and Internet Surveys: The Total Design Method* (Ch. 11, pp. 352-401). New York: John Wiley & Sons, Inc.

Earp, J. A. & Ennett, S. T. (1991). Conceptual models for health education research and practice. *Health Education Research, 6*, 163-171.

Edwards, P., Roberts, I., Clarke, M., DiGuseppi, C., Pratap, S., Wentz, R., & Kwan, I. (2002). Increasing response rates to postal questionnaires: systematic review. *BMJ, 324*, 1183-1192.

*Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeaud, E. M. (2005). Experiences of discrimination: Validity and reliability of a self-report measure for population health research on racism and health. *Social Science & Medicine, 61*, 1576-1596

Lindley, P. & Walker, S. N. (1993) Theoretical and methodological differentiation of moderation and mediation. *Nursing Research, 42*, 276-279.

Rosen, L., Manor, O., Engelhard, D., and Zucker, D. (2006). In defense of the randomized controlled trial for health promotion research. *American Journal of Public Health, 96*, 1181-1186.

*Shadish, W. R., Cook, T. D. & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized inference*. Boston: Houghton Mifflin.

Journal Club

The purpose of the Journal Club is to help students apply course concepts in critically assessing research articles. Students read and critique an assigned research article, focusing on specific components of the article's methods and results (e.g., threats to causal inference, generalizability, construct validity) that they describe and critique during a small group discussion group. Journal club readings will be announced as the semester progresses.

Exercises

Regular in-class exercises are an integral part of the course because they provide students the opportunity to discuss and to apply concepts covered in the course readings and lectures. Most are group exercises that are discussed during class. In addition, three individual exercises are assigned to be completed by the student on her or his own outside of class and turned in for grading. The due dates for these graded exercises are shown in the schedule below.

Exams

All exams are cumulative. I have chosen this approach as research suggests that it optimizes learning and should best prepare you for the master's comprehensive exam. The first two exams will be given in-class. The third exam—designed to help you prepare for the comps—will be an analysis of a research article reporting the results of a quasi-experimental study; this will be a group project conducted in groups of 4. More information on the third exam will be given later in the semester.

Grading

The course grade is based on points earned from three exams (exam 1=300 points, exam 2 =300 points, exam 3=100 points) and three take-home exercises (100 points each).

950-1000	High Pass
830-949	Pass
700-829	Low Pass
Below 700	Fail

Schedule

Dates (R=recitation)	Lecture Topic	Readings	Activities
Getting started			
8/21 Tu	1. Evaluating research evidence		In class exercise (designing an HIV intervention)
8/23 Th	2. Social science research -literature searches -reading journal articles	Ch.1 & 2 Supplemental: Brownson et al. (2004), Chapter 6	Review syllabus
Conceptual models			
8/28 Tu R	3. Variables and units of analysis	Ch.3: 43-51	In class exercise (units of analysis and variables)
8/30 Th	4. Relationships among variables, association and	Ch.3: 51-64	In class exercise (relationships among variables)

Dates (R=recitation)	Lecture Topic	Readings	Activities
	causation		<i>Exercise 1 available online</i>
9/4 Tu R	5. Research questions and hypotheses	Ch.3: 64-72	In class exercise (practice writing hypotheses)
9/6 Th	6. Conceptual models	Earp & Ennett (1991) Lindley & Walker (1993)	In class exercise (variables, hypotheses and conceptual models)
9/11 Tu R	7. Measurement-operational definitions	Ch.4: 76-90 Ch.12: 384-389	In class exercise (measurement process) Exercise 1 due
External Validity			
9/13 Th	12. Sampling 1 <i>1st day of Rosh Hashanah</i>	Ch.5: 111-152	In class exercise (putting it all together)
9/18 Tu R	13. Sampling 2	Supplemental: AAPOR (2000) Supplemental: Coday et al., (2005)	In class exercise (sampling) <i>Exercise 1 returned</i> <i>Exercise 2 available online</i>
9/20 Th	22. Threats to external validity	Ch 13: 434-435 Supplemental: Shadish et al. (2002), ch. 3, 83-95. Journal Club #1	In class exercise (threats to external validity) Journal Club #1
9/25 Tu Noel at Cornell	Exam 1, 9-10:30 am		
Observational Research			
9/27 Th	15. Observational research designs	Ch. 8: 227- 232	No in-class exercise <i>Final exam template available online</i>
10/2 Tu R	11. Interview mode	Ch.8: 232-245 Edwards, et al. (2002) Supplemental: Dillman (2000), Ch.11 Ch.8: 246-262	In class exercise Discuss exam 1
10/4 Th	G1. Guest lecture: Melissa Roche – Qualitative research.		

Dates (R=recitation)	Lecture Topic	Readings	Activities
10/9 Tu R	8. Construct validity of measured variables	Ch.4: 90-105 Supplemental: Krieger et al., 2005	In class exercise (reliability and validity)
10/11 Th	9. & 10. Survey design	Supplemental: Dillman (2000), Ch.2 & 3	In class exercise (questionnaire practice) Exercise 2 due
Experimental Research			
10/16 Tu R	16. Overview of evaluation research 17. Logic of experimentation 5a. Factorial designs	Ch. 6: 155-162 Ch. 7: 200-206	No in-class exercise
10/18 Th	FALL BREAK		
10/23 Tu R	G2. Guest lecture: Kurt Ribisl 10-10:50.	Journal Club #2	Journal Club #2 <i>Exercise 2 returned</i> <i>Exercise 3 available online</i>
10/25 Th	18. Threats to internal validity	Ch.7: 187-192 Supplemental: Cook & Campbell (1979), Ch. 2	In class exercise (threats to validity and designs)
10/30 Tu R	19. Evaluation research designs – pre-experimental 20. Evaluation research designs – experimental	Ch. 7: 192-194 Supplemental: Cook & Campbell (1979), Ch. 3 Ch. 7: 194-206	In class exercise (threats to internal validity)
11/1 Th	21. Evaluation research designs- quasi-experimental	Ch.7: 206-218 Ch.13: 425-433 Rosen et al. (2006)	In-class exercise (quasi designs and process evaluation)
11/6 Tu	No class – APHA Annual Convention		Exercise 3 due
11/8 Th	22a. Construct validity of manipulated variables	Supplemental: Shadish et al. (2002), ch. 3, p. 64-82.	In class exercise (manipulated vs. measured variables; construct validity)
11/13 Tu R	23. Process evaluation 24. Data preparation and analysis	Ch.14: 445-482 Journal Club #3	Journal Club #3 <i>Exercise 3 returned</i>

Dates (R=recitation)	Lecture Topic	Readings	Activities
11/15 Th Noel at ACS	Exam 2, 9-10:30 am		Exam 2 is cumulative
Standards of Evidence			
11/20 Tu R	26b. Debates about “what works” (REAIM)		Course evaluation In class exercise (practice evaluating studies)
11/22 Th	No class - Thanksgiving		
11/27 Tu	25. Literature reviews 26. Evaluating scientific evidence	Brownson et al. (202), Ch. 3, p. 44- 53 & 69-77	Discuss exam 2
11/29 Th	Final Exam Presentations		
12/4 Tu	Final Exam Presentations		