

MHCH 713 & 713L: RESEARCH METHODS IN MATERNAL AND CHILD HEALTH

Fall 2016

Course Overview

In this syllabus:

- Course objectives p. 1
- Assignments & Grading p. 2
- Readings p. 3
- Schedule p. 4 & 5
- Course Eval p. 5

The purpose of this course is to introduce research methods useful in the field of Maternal and Child Health (MCH). This course will provide an overview of the research process and practical experience in survey research, including conceptualization, measurement, data collection, data management, data analysis, and dissemination of research findings. The course will extend students' research skills by emphasizing the practical application of statistical and epidemiological methods to research problems commonly encountered in MCH. Hands-on practicum activities, including statistical programming, will be integrated into and central to the content of the course.

MEETING TIMES

Lecture: Tuesday & Thursday, 9:30-10:45 a.m.,
1304 McGavran-Greenberg

Lab: Thursday, 11:00-12:15, 230 Rosenau

TEACHING TEAM

Jon Hussey, Instructor

jon_hussey@unc.edu

Office Hours: Weds, 1-2 & by appt, 403 Rosenau

Tim Kim, Teaching Intern

Amelia Mackenzie, Teaching Intern

Intern Office Hours: Thurs, 1-2

Course Objectives

Completing this course will enable you to:

- Critically review and evaluate individual research studies and the evidence base for a chosen MCH issue;
- Demonstrate the basic skills necessary to design and execute a secondary data analysis;
- Increase expertise in univariate and multivariate statistics and the necessary Stata programming language to execute these analyses;
- Design, write, and present a formal scientific paper.

2014 MHCH 713 Poster Session

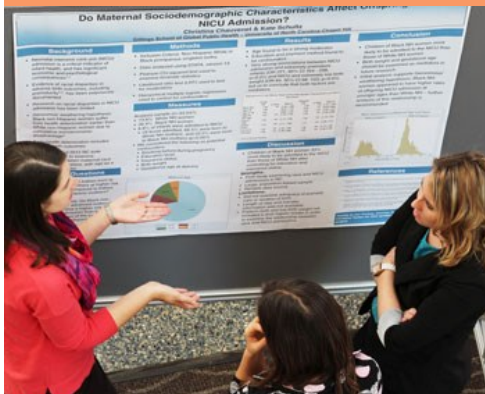


Photo Credit: Kathy Biancardi

Left: Christina Chauvet, Ashley Cobb and Kate Schultz

Right: Lauren Wall and Kathryn Mitchell



ASSIGNMENTS

In addition to completing the assigned readings, students will:

- Evaluate two research studies through a written Critical Review Assignment (individual assignment).
- Demonstrate competency in Stata through the completion of two Stata Review Assignments (individual assignments).
- Write a final paper, and present a poster of your Secondary Data Analysis Project (partner).

More detailed instructions for each assignment will be posted on Sakai.

Secondary Data Analysis Project

Students may choose to utilize one of two data sets that will be used during lecture and lab examples, and for the Stata Review Assignments:

1. North Carolina Vital Statistics – Births 2012
or
2. the Zimbabwe DHS, 2010-2011.

Students are encouraged to work in pairs on the secondary data analysis project. Students wanting to use the Secondary Data Analysis Project to advance on their Master's Thesis may do so and work individually if the student receives a P or higher on the Stata Review Assignment 1 and has his or her own data set ready by 9/29. Likewise, students may use another statistical software, such as SAS, for the secondary data analysis project, but assistance from the teaching team may be limited.

Advice from previous students on the

Secondary Data Analysis Project:

“Don't make your research question too involved.”

“Use one of the course data sets.”

“Keep to the timeline from the beginning.”

“Think about the big picture when coding and where you want to go.”

GRADING

Critical Review (5%)

Stata Review Assignments (2) (5% each)

Class Participation (5%)

Secondary Data Analysis Project Assignments (80%):

- ◇ Secondary Analysis Literature Review Peer Review (5%)
- ◇ Secondary Analysis Literature Review Revised (20%)
- ◇ Secondary Analysis Conceptual Model & Analysis Plan (5%)
- ◇ Secondary Analysis Methods/Results/ Discussion-Draft (5%)
- ◇ Secondary Analysis Methods/Results/ Discussion-Draft Peer Review (5%)
- ◇ Secondary Analysis Poster Presentation (15%)
- ◇ Secondary Analysis Final Paper (25%)

Students working in pairs will receive the same grade on the Secondary Data Analysis Project unless peer evaluation indicates that one partner did not contribute fairly. Although you may divide up the work for an assignment, each team member is responsible for the entire product.

Assignments should be submitted before class on the due date via your Assignment folder in Sakai unless otherwise noted. Late assignments will be accepted only at the discretion of the instructor and may be subject to grade deductions.

Attendance and participation in class discussion and activities are expected. Please inform the instructor ahead of time if you will be unable to attend class.

Consistent with the practices of the Graduate School, grades will be assigned as follows:

- H = Clear Excellence (Exceptional)
- P = Entirely Satisfactory (Demonstrates Mastery)
- L = Low Satisfactory (Mastery Lacking)
- F = Fail
- I = Incomplete

Final grades will be assigned according to the following criteria: 92-100: H, 76-91: P, and 75 or less: L

Your full participation and observance of the Honor Code is expected. Please familiarize yourself with its terms <http://instrument.unc.edu>.

Readings

Readings should be completed prior to the relevant class or lab session and are available on Sakai. The readings are designed to inform class discussions, reinforce and extend lecture content, and to provide practical advice for the Secondary Data Analysis Project. Students desiring a guide to Stata may find this book useful: Acocck A.C. *A Gentle Introduction to Stata* (5th edition). College Station: Stata Press, 2016.

Required reading

- 8/23 1) Syllabus. 2) **Become familiar with** The Instrument of Student Judicial Governance: <http://instrument.unc.edu>.
- 8/25 1) Belmont Report <http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html> 2) **Become familiar with** the UNC IRB and Office of Human Research Ethics website: <http://research.unc.edu/offman-research-ethics/getting-started/>
- 8/30 **Browse Documentation for Secondary Data Analysis Project in the Lab folder:**
Vital Statistics 1) 2011 Birth Dataset Description_Stat 2) Guide 2013 3) North Carolina Birth Certificate; or **DHS: 1) Guide_to_DHS_Statistics_29Oct2012_DHS** 2) DHS 6 standard recode manual 3) DataNotes 4) Individual Recode Documentation (Specific to Zimbabwe) 5) Zimbabwe DHS Report
- 9/1 1) Earp J, Ennett ST. Conceptual Models for Health Education Research and Practice. *Health Education Research* 1991;6(2):163-171. 2) D Kuh et al. Life Course Epidemiology. *J Epidemiol Community Health* 2003;57:778-783. 3) **Optional browse:** Rimer, B. K., & Glanz, K. (2005). Theory at a glance: a guide for health promotion practice.
- 9/8 1) Alexander GR. A Guide to Reviewing Manuscripts. *Maternal and Child Health Journal* 2005; 9(1):113-117. 2) MCHJ Instructions for Authors: http://www.springer.com/public+health/journal/10995?print_view=true&detailsPage=pltc1_18246
- 9/13 Cronin P, Ryan F, Coughlan M. Undertaking a literature review: a step-by-step approach. *British Journal of Nursing* 2008;17(1):38-43.
- 9/15 1) Haas JS et al. Prepregnancy Health Status and the Risk of Preterm Delivery *Arch Pediatr Adolesc Med* 2005;159:58-63. 2) Gavin AR et al. Maternal Early Life Risk Factors for Offspring Birth Weight: Findings from the Add Health Study. *Prev Sci* 2012;13:162-172.
- 10/4 Grimes DA, Schulz KF. An overview of clinical research: the lay of the land. *Lancet* 2002; 359:57-61.
- 10/6 1) Ann Bowling and Shah Ebrahim, Editors. Handbook of Health Research Methods: Investigation, Measurement and Analysis. New York: Open University Press, 2006. **Chapter 8 pgs 190-99.** 2) Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International. 2012. Zimbabwe Demographic and Health Survey 2010-11. Calverton, Maryland: ZIM-STAT and ICF International Inc. **read page 4 on Sampling and page 8 on Response Rates.**
- 10/11 1) Ann Bowling and Shah Ebrahim, Editors. Handbook of Health Research Methods: Investigation, Measurement and Analysis. New York: Open University Press, 2006. **Chapter 17 pgs 394-402. Choose one of the following:** 2) Braveman P, Cubbin C, Marchi K, Egarter S, Chavez G. Measuring Socioeconomic Status/Position in Studies of Racial/Ethnic Disparities: Maternal and Infant Health. *Public Health Reports* 2001;116(5):449-463. or 3) Rutstein SO and Johnson K. 2004. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro. **read pages ix-14.**
- 10/18 1) Grimes DA, Schulz KF. Descriptive studies: what they can and cannot do. *Lancet*; 2002; 359:145-149. 2) **Optional browse:** Collier, C. H., Rosenthal, M., Harris, K., Lucas, G., & Stanwood, N. L. (2014). Contraceptive implant knowledge and practices of providers serving an urban, low-income community. *Journal of health care for the poor and underserved*, 25(3), 1308-1316.
- 10/25 Raj, A., Vilms, R. J., McDougal, L., & Silverman, J. G. (2013). Association between having no sons and using no contraception among a nationally representative sample of young wives in Nepal. *International Journal of Gynecology & Obstetrics*, 121(2), 162-165.
- 10/27 1) Bernstein, Ira M., et al. "Maternal smoking and its association with birth weight." *Obstetrics & Gynecology* 106.5, Part 1 (2005): 986-991. 2) Reading guide Linear Regression
- 11/1 Aschengrau, Ann, and George Seage. *Essentials of epidemiology in public health*. Jones & Bartlett Learning, 2008. 1) Chapter 11 Confounding and 2) Chapter 13 Effect Measure Modification.
- 11/3 1) Grimes DA, Schulz KF. Bias and Causal Associations in Observational Research. *Lancet*; 2002;359(9302):248-252. 2) Nelson, Melissa C., Penny Gordon-Larsen, and Linda S. Adair. "Are adolescents who were breast-fed less likely to be overweight?: Analyses of sibling pairs to reduce confounding." *Epidemiology* 16.2 (2005): 247-253.
- 11/10 Fowler FJ. Designing Questions to Be Good Measures. Chapter 5 (pp. 76-103) in *Survey Research Methods* (3ed). Thousand Oaks: Sage. 2002.

MHCH 713 / 713L SCHEDULE, FALL 2016

Date	Topic	Reading	In-Class Exercises & Assignments Due
MODULE 1 DEVELOPING A RESEARCH QUESTION & REVIEWING THE EVIDENCE			
8/23 T	Course Orientation	Syllabus & browse the Instrument	Written Reflection
8/25 TH	Developing a Research Question & Research Ethics	Belmont Report & browse the UNC IRB website	
8/25 TH	Lab 1: VCL & Stata Intro		
8/30 T	Birth Certificate & DHS Data Orientation	Documentation for Vital Statistics and/or DHS	Secondary Analysis Topic Speed Dating
9/1 TH	Theory & Conceptualization	Earp & Ennett; Kuh et al.; <i>Optional Rimer & Glanz</i>	
9/1 TH	Lab 2: Data Management		Finalize Partners
9/6 T	Module 1 Checkpoint		Partner Work
9/8 TH	Critical Evaluation of Research	Alexander & MCHJ Instructions for Authors	<i>Submit Draft Research Question & Conceptual Model</i>
9/8 TH	Lab 3: Descriptive & Bivariate Stats		Handout Stata Assign 1
9/13 T	Literature Reviews I: Theory, Synthesis, & Identifying Gaps	Cronin, Ryan, & Coughlan	Partner Work
9/15 TH	Journal Club	Haas et al.; Gavin et al.	<i>Submit Critical Review Paper</i>
9/15 TH	Lab 4: Stata Assign 1		
9/20 T	Literature Reviews II: Tools and Methods		Guest Lecture: Mary White [invited]; Partner Work
9/22 TH	Module 1 Checkpoint		
9/22 TH	Lab 5: Multivariate Stats		Handout Stata Assign 2 <i>Submit Individual Stata Review Assignment 1</i>
9/27 T	Peer Review		<i>Submit Draft Literature Review to Peer Reviewer & Instructor</i>
9/29 TH	Peer Review Feedback & Partner Work		<i>Submit Literature Review Peer Review to Peer & Instructor</i>
MODULE 2 STUDY DESIGN AND ANALYSIS			
9/29 TH	Lab 6: Review Assign 1		<i>Project Dataset Stata-ready</i>
10/4 T	Study Design: Experimental vs. Observational Methods	Grimes & Schulz (Overview of Clinical Research)	Partner Work
10/6 TH	Sampling	Bowling & Ebrahim Chapter 8; Zimbabwe DHS	Partner Work
10/6 TH	Lab 7: Data Management		<i>Submit Individual Stata Review Assignment 2</i>
10/11 T	No Class (University Day)		<i>All classes canceled from 9:30a-12:30p</i>
10/13 TH	Measurement	Bowling & Ebrahim; Choose 1: Bravemen et al. or Rutstein & Johnson	<i>Submit Revised Literature Review</i>
10/13 TH	Lab 8: Figure 1 & Review Assign 2		
10/18 T	Descriptive Statistics & Bivariate Associations	Grimes & Schulz (Descriptive); <i>Optional Collier et al.</i>	Journal Club Mid-Term Course Evaluation

MHCH 713 / 713L SCHEDULE, FALL 2016

Date	Topic	Reading	In-Class Exercises & Assignments Due
10/20 TH	FALL BREAK		
10/25 T	Introduction to Regression Modeling	Raj et al.	
10/27 TH	Linear & Logistic Regression	Bernstein et al.; Reading guide linear regression	<i>Submit Secondary Analysis Con-</i>
10/27 TH	Lab 9: Table Shells		
11/1 T	Interaction & Mediation	Aschengrau & Seage Chapters 11 & 13.	
11/3 TH	Confounding, Selection and Information Bias	Grimes & Schulz (Bias and Causal Assocs); Nelson et al.	Journal Club
11/3 TH	Lab 10: Multivariable Table Shells		
11/8 T	Module 2 Checkpoint		
11/10 TH	Primary Data Collection I: Designing Self-Administered Questionnaires	Fowler	Guest Lecture: invited
MODULE 3 COMMUNICATING AND DISSEMINATING RESULTS			
11/10 TH	Lab 11: Project Work		
11/15 T	Effective Posters and Presentations		<i>Submit Secondary Analysis Methods/Results/Discussion Draft to Peer Reviewer & Instructor Guest Lecture: Nicole Kahn</i>
11/17 TH	Peer Review Feedback &		<i>Submit Sec. Analysis Methods/ Re-</i>
11/17 TH	Lab 12: Finalize Analysis		<i>Submit Final Do File & Output to</i>
11/22 T	Module 3 Checkpoint		
11/24 TH	THANKSGIVING		
11/29 T	Poster Session		
12/1 TH	Implementation Science		Guest Lecture: Andra Wilkinson
12/1 TH	Lab 12: Poster Evaluation		
12/6 T	Party & Partner & Course Evaluations		<i>Submit Secondary Analysis Final Paper & Course & Partner Evals</i>

Course Evaluation



Evaluation of the course will be ongoing and your input is important to us. Please share any feedback you have with the instructors throughout the course to improve the course and your experience, and especially at the end of the term through the school administered electronic evaluations.

Photo Credit: Kathy Biancardi

Amanda Zabala and Phoebe Wescott at the 2014 MHCH 713 Poster Session