



POPULATION COURSE SYLLABUS HEALTH

Introduction to Life Course Epidemiology and Family Health Services Research: 650-067

A course in the Program in Population Health
Spring 2012
Mondays and Wednesdays from 1:15-2:30pm
WARF 758
University of Wisconsin-Madison,
School of Medicine and Public Health

Course Director:	Whitney P. Witt, PhD, MPH
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Office hours:	Generally available following class; or, by appointment.

OVERVIEW

This course will deepen our understanding of how health is produced over the life course. A life course approach focuses on how early life experiences influence health across lives and possibly generations. This includes the concept of “linked lives” or how health is produced in the context of familial and social relationships. Using a life course and human development framework, we will explore a number of concepts explaining how exposures in early life lead to health outcomes at later life stages. Namely, we will examine critical or sensitive periods (i.e., “Barker hypothesis” or “fetal or biological programming”), cumulative effects, pathways and trajectories, risk and resilience, and intergenerational impacts (transmission of health across one or more generations). Through this lens, we will consider the biobehavioral processes that underlie the development of health across the life course. Together this theoretical and empirical evidence will be applied to the understanding of the evolution and persistence of health disparities. Data sources, study designs, and statistical approaches used in life course epidemiology and family health services research will also be reviewed and evaluated. Finally, we will explore implications for clinical and public health practice, policy, and health system development with an eye towards the development of effective and sustainable life course interventions. We will conclude the course with an in-depth examination of three case-studies that will allow the

students to apply their knowledge to specific life course and family health services research examples.

The purpose of this course is to provide students with a foundation for understanding: 1) the terminology and theoretical framework used in life course epidemiology and family health services research; 2) biobehavioral pathways by which early life experiences impact health across the life course; 3) the data sources, study designs, and statistical approaches used in life course epidemiology and family health services research; 4) the implications for clinical and public health practice, policy, and health system development with an eye towards the development of effective and sustainable life course interventions

PREREQUISITES

Students must have taken *Principles of Population Health Science Population Health (795)* **or** obtain instructor permission to enroll in the class.

COURSE OBJECTIVES

By the end of this course, students will be able to:

- Discuss the terminology and theoretical framework used in life course epidemiology and family health services research
- Describe the biobehavioral pathways by which early life experiences impact health across the life course
- Understand the methodological approaches (data sources, study design, and statistical analyses) in life course epidemiology and family health services research
- Discuss the implications of life course epidemiology and family health services research for practice, policy, and health systems
- Explain various preventive and intervention strategies for improving health across the life course and generations

COURSE ADMINISTRATION

Dr. Witt will be responsible for all administrative issues and grading. A course website is set up on the LEARN@UW system. This is the electronic course home. A main purpose of this website is that it will be a repository of downloadable copies of the course readings and, *where appropriate*, copies of lecture slides (not all lectures will have slides made available in this manner, so good note taking will be important). Occasionally, announcements will be posted under the "News" heading on the course homepage. Students should check the course website frequently. Students may audio record lectures for their own personal use (i.e. not for distribution) with permission of the lecturer.

The lecture will be held in the WARF building two days per week for 75 minutes per session.

COURSE ENVIRONMENT AND ACADEMIC INTEGRITY/MISCONDUCT

Collaborative Environment & Academic Misconduct

Students are encouraged to discuss course material and content with each other. However, unless otherwise indicated, assignments, exams, and quizzes should be representative of your own work. Please refer to this website if you have questions about student misconduct:

<http://www.wisc.edu/students/saja/misconduct/misconduct.html>

Non-Discrimination Policy

The UW–Madison is committed to creating a dynamic, diverse and welcoming learning environment for all students and has a non-discrimination policy that reflects this philosophy. Disrespectful behaviors or comments addressed towards any group or individual, regardless of race/ethnicity, sexuality, gender, religion, ability, or any other difference is deemed unacceptable in this class.

Special Needs or Disabilities

We wish to fully include persons with special needs or disabilities in this course. Please let Dr. Witt know if you need any special accommodations in the curriculum, instruction, or assessments of this course to enable you to fully participate.

STUDENT EVALUATION

The grading for the course is based on three elements:

1. **Paper written in a grant application format** (65% of course grade)
2. **Presentation** (20% of course grade)
There will be a presentation that students will make in class at the end of the semester.
3. **Participation** in discussion, exercises, and lectures (15% of grade)

READINGS

Required and additional readings for each particular lecture or module will be posted on the course webpage at Learn@UW. Most readings will be available for download from the course webpage or will be available electronically from UW-Madison Libraries.

The following books may be *required* (WPW need's to review them) for the course. They will be available for purchase at University Book Store Health Sciences (located inside HSLC) and on course reserve in Ebling Library.

Kuh, D and Shlomo, YB. A Life Course Approach to Chronic Diseases Epidemiology. Oxford University Press.

Lawlor, DA and Mishra, GD. (2009). Family matters: Designing, analysing and understanding family based studies in life course epidemiology. Oxford University Press.

Pickles et al. (2007). Epidemiological Methods in Life Course Research. Oxford University Press.

Elder, GE and Giele, JZ. (eds.) (2009) The Craft of Life Course Research. Guilford Press.

Course Schedule			
Date	Week	Topic	Lecturer
Monday January 23, 2012 Wednesday January 25, 2012	1	Terminology	Witt
Monday January 30, 2012 Wednesday February 1, 2012	2	Theory	Witt
Monday February 6, 2012 Wednesday February 8, 2012	3	Biobehavioral Processes	Witt
Monday February 13, 2012 Wednesday February 15, 2012	4	Health Disparities	Witt
Monday February 20, 2012 Wednesday February 22, 2012	5	Methodological Considerations	Witt
Monday February 27, 2012 Wednesday February 29, 2012	6	Methodological Considerations	Witt
Monday March 5, 2012 Wednesday March 7, 2012	7	Implications for Clinical Practice	Witt
Monday March 12, 2012 Wednesday March 14, 2012	8	Implications for Public Health Practice	Witt
Monday March 19, 2012 Wednesday March 21, 2012	9	Implications for Health Systems	Witt
Monday March 26, 2012 Wednesday March 28, 2012	10	NO CLASS	NA
SPRING RECESS March 31-April 8, 2012		Case Study 1	Witt
Monday April 9, 2012 Wednesday April 11, 2012	11	Case Study 2	Witt
Monday April 16, 2012 Wednesday April 18, 2012	12	Case Study 3	Witt
Monday April 23, 2012 Wednesday April 25, 2012	13	Future Research and Directions	Witt
Monday April 30, 2012 Wednesday May 2, 2012	14	PRESENTATIONS	Students
Monday May 7, 2012 Wednesday May 9, 2012	15	PRESENTATIONS	Students

READINGS

Please read all required readings prior to the class session. Readings listed as “additional” are not required and their content will not be included on exams or quizzes.

<u>Date</u>	<u>Week</u>	<u>Topic</u>	<u>Readings</u>
1/23/12 1/25/12	1	<i>Life Course Terminology</i>	<ul style="list-style-type: none">• Kuh, D., Y. Ben-Shlomo, et al. (2003). "Life course epidemiology." <i>J Epidemiol Community Health</i> 57(10): 778-783.• Krieger, N. (2001). "A glossary for social epidemiology." <i>J Epidemiol Community Health</i> 55(10): 693-700.• Barker DJP. Developmental origins of adult health and disease; a glossary. <i>J. Epidemiol. Community Health</i>. 2004; 58:114-5
1/30/12 2/1/12	2	<i>Life Course Theory</i>	<ul style="list-style-type: none">• Halfon, N. and M. Hochstein (2002). "Life course health development: an integrated framework for developing health, policy, and research." <i>Milbank Q</i> 80(3): 433-479, iii.• Barker D. 1990. The fetal and infant origins of adult disease. <i>BMJ</i> 301:1111–1117.• Misra, DP, Guyer, B, Alston, A. Integrated perinatal health framework. A multiple determinants model with a life span approach. <i>Am. J. Prev. Med.</i> 2003; 25: 65-75.• Elder, G. H. (1998). "The Life course as developmental theory." <i>Child Development</i>, 69: 1–12.• Wise PH. Framework as metaphor: The promise and peril of MCH life-course perspective. <i>Matern Child Health J</i>. 2003;7:151-6.
2/6/12 2/8/12	3	<i>Biobehavioral Processes and Health Development Trajectories</i>	<ul style="list-style-type: none">• Drake, A. J. and B. R. Walker (2004). "The intergenerational effects of fetal programming: non-genomic mechanisms for the inheritance of low birth weight and cardiovascular risk." <i>J Endocrinol</i> 180(1): 1-16.• Hertzman C, Boyce T. How experience gets under the skin to create gradients in developmental health. <i>Annu Rev Public Health</i>, 2010.31:329-347.

- Power C, Hertzman C. Social and biological pathways linking early life and adult disease. *British Medical Bulletin* 1997;53(No 1):210-221.
- McEwen, BS. Protective and damaging effects of stress mediators. *New Eng J Med* 1998; 338: 171-178.
- Shonkoff JP, Boyce WT, McEwen BS. Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *JAMA* 2009; 301(21): 2252-2259.
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Koss MP, Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *External Web Site Icon. American Journal of Preventive Medicine* 1998;14:245–258.

2/13/12 4
2/15/12

A Life Course Approach to the Evolution and Persistence of Health Disparities

- Geronimus, A. T., M. T. Hicken, et al. (2010). "Do US Black Women Experience Stress-Related Accelerated Biological Aging?: A Novel Theory and First Population-Based Test of Black-White Differences in Telomere Length." *Hum Nat* 21(1): 19-38.
- Geronimus AT, Hicken M, Keene D, Bound J. "Weathering" and age patterns of allostatic load scores among blacks and white in the United States. *Am J Public Health.* 2006;96:826-33.
- House, James S., Paula M. Lantz and Pamela Herd. 2005. Continuity and change in the social stratification of aging and health over the life course: evidence from a nationally representative longitudinal study from 1986 to 2001/2002 (Americans' Changing Lives Study). *Journals of Gerontology: Series B* 60B (Special Issue II): 15-26.
- Chapter 4-- Life course approaches to socioeconomic differentials in health from Kuh, D and Shlomo, YB. *A Life Course Approach to Chronic Diseases Epidemiology.* Oxford University

			<ul style="list-style-type: none"> Press. • Braveman P, Barclay C. Health disparities beginning in childhood: A life-course perspective. <i>Pediatrics</i> 2009; 124 Supplement: S163-S175. • Kahn RS, Wilson K, Wise PH. Intergenerational health disparities: Socioeconomic status, women's health conditions, and child behavior problems. <i>Public Health Rep.</i> 2005;120:399-408. • Wise PH. Confronting social disparities in child health: A critical appraisal of life-course science and research. <i>Pediatrics</i> 2009; 124 Supplement: S203-S211.
2/20/12 2/22/12 2/27/12 2/29/12	5-6	<i>Methodological Considerations for Life Course Research</i>	<ul style="list-style-type: none"> • Chapters from Elder, GE and Giele, JZ. (eds.) (2009) <u>The Craft of Life Course Research</u>. Guilford Press. • De Stavola, B. L., D. Nitsch, et al. (2006). "Statistical issues in life course epidemiology." <i>Am J Epidemiol</i> 163(1): 84-96. • Chapters from Pickles et al. (2007). <u>Epidemiological Methods in Life Course Research</u>. Oxford University Press
3/5/12 3/7/12	7	<i>Implications for Clinical Practice</i>	<ul style="list-style-type: none"> • Gilman, S. E. and M. C. McCormick (2010). "Insights from life course epidemiology." <i>Acad Pediatr</i> 10(3): 159-160. • Stein, R. E., M. J. Siegel, et al. (2010). "Double jeopardy: what social risk adds to biomedical risk in understanding child health and health care utilization." <i>Acad Pediatr</i> 10(3): 165-171. • Biermann J, Dunlop AL, Brady C, Dubin C, Brann A Jr. Promising practices in preconception care for women at risk for poor health and pregnancy outcomes. <i>Matern Child Health J.</i> 2006;10:S21-8. • Lu MC, Kotelchuck M, Culhane JF, Hobel CJ, Klerman LV, Thorp JM Jr. Preconception care between pregnancies: The content of internatal care. <i>Matern Child Health J.</i> 2006;10:S107-22.
3/12/12 3/14/12	8	<i>Implications for Public Health Practice</i>	<ul style="list-style-type: none"> • HRSA. Rethinking MCH: The Life Course Model as an Organizing Framework (2010). http://mchb.hrsa.gov/lifecourse/rethinkingmchlifecourse.pdf. • Frohlich, K. L. and L. Potvin (2008). "Transcending the known in public health practice: the inequality

paradox: the population approach and vulnerable populations." Am J Public Health 98(2): 216-221.

3/19/12 9 3/21/12	<i>Implications for Policy and Health Systems</i>	<ul style="list-style-type: none"> • Halfon, N., H. DuPlessis, et al. (2007). "Transforming the U.S. child health system." Health Aff (Millwood) 26(2): 315-330. • Forrest CV, Riley AW Childhood origins of adult health: A basis for life-course health policy. Health Affairs 2004;23(5): 155-64. • Halfon N. 2009. "Life Course Health Development: A New Approach for Addressing Upstream Determinants of Health and Spending." Expert Voices, NIHCM Foundation, Washington, DC. http://www.nihcm.org/pdf/ExpertVoices_Halfon_FIN_AL.pdf
3/26/12 10 3/28/12	<u>Case Study:</u> Pregnancy History, Birth Outcomes, and Women's Future Health	<ul style="list-style-type: none"> • Lu, M. C. and N. Halfon (2003). "Racial and ethnic disparities in birth outcomes: a life-course perspective." Matern Child Health J 7(1): 13-30. • Lu MC, Kotelchuck M, Hogan V, Jones L, Jones CA, Halfon N. Closing the black-white gap in birth outcomes: A life-course approach. Ethnicity and Disease 2010;20(S2):62-76. • Rich-Edwards, J. W., T. F. McElrath, et al. (2010). "Breathing life into the lifecourse approach: pregnancy history and cardiovascular disease in women." Hypertension 56(3): 331-334. • Geronimus AT. Black/white differences in the relationship of maternal age to birthweight: A population-based test of the weathering hypothesis. Soc Sci Med. 1996;42:598-97.
4/9/12 11 4/11/12	<u>Case Study:</u> Social Ties and Health Outcomes Across the Life Course	<ul style="list-style-type: none"> • Umberson, D., K. Williams, et al. (2006). "You make me sick: marital quality and health over the life course." J Health Soc Behav 47(1): 1-16. • Umberson, D., R. Crosnoe, et al. (2010). "Social Relationships and Health Behavior Across the Life Course." Annual Review of Sociology 36: 139-157.
4/16/12 12 4/18/12	<u>Case Study:</u> Life Course Approach to Health Services and Health Systems	<ul style="list-style-type: none"> • Pies, C., P. Parthasarathy, et al. (2011). "Integrating the Life Course Perspective into a Local Maternal and Child Health Program." Matern Child Health J. • Halfon, N., H. DuPlessis, et al. (2008). "Looking back at pediatrics to move forward in obstetrics." Curr Opin Obstet Gynecol 20(6): 566-573.

			<ul style="list-style-type: none"> • http://www.chmcla.org/Who_We_Are/Serving_the_Community/181663
4/23/12 4/25/12	13	Future Directions for Research and Interventions	<ul style="list-style-type: none"> • Mayer, K.U. (2009). "New Directions in Life Course Research", Annual Review of Sociology 35: 413–433. • Chapters 17 and 18 of Kuh, D and Shlomo, YB. <u>A Life Course Approach to Chronic Diseases Epidemiology</u>. Oxford University Press.
4/30/12 5/2/12	14	STUDENT PRESENTATIONS	<ul style="list-style-type: none"> • No readings
5/7/12 5/9/12	15	STUDENT PRESENTATIONS	<ul style="list-style-type: none"> • No readings