

## **IH591D: Demographic Methods for Public Health Decision-Making**

Course Instructor: Kathryn M. Yount, Ph.D.  
Email: [kyount@sph.emory.edu](mailto:kyount@sph.emory.edu)  
Office hours:

Pre-requisites: IH 540 Population Dynamics  
IH591E Maternal and Child Health Demography  
OR Permission of Instructor

Term: Spring, 2000

Course credits: 2 credits

Course time: 9-11 Tuesdays

Course location: TBA

Course objectives: This course introduces students to scientific perspectives on some of the most pressing issues affecting public health. The course focuses on social inequality in health over the life course and focuses on the measurement and determinants of mortality, morbidity, health status, and quality of life among populations in developing countries. Students should develop “demographic literacy” – or the ability to read, interpret, and critique basic information about mortality, perceptions of health, objective health status, and health care utilization. Students should also acquire knowledge of basic demographic techniques related to the above topics, should be able to apply these skills, and should develop from exposure to selected case studies an appreciation for the application of demography to the study of health problems in the developing world. All students will use personal computer spreadsheets and other demographic software to conduct basic demographic analyses.

Specific objectives: Upon completion of the course, students should:

1. Know the major sources of demographic data on health status and mortality most relevant for the developing world.
2. Understand how mortality affects population structure and be able to generate and interpret basic measures of population composition for this purpose.
3. Understand, interpret, and apply techniques that enable one to compare levels of mortality cross-nationally.
4. Understand, generate, and interpret measures of under-five mortality.
5. Understand and interpret trends in the cause structure of mortality globally.
6. Have an understanding of some of the major causes of global inequality in health status and mortality.

7. Understand, generate, and interpret the basic measures of a life table, such as the age-specific probability of death, life expectancy at birth, and life expectancy beyond a certain age.

Course Format:

The course will consist of 13, 2-hour sessions. Each session will be divided into two parts. The first part will be led by the course instructor, will be lecture-based, and will focus on the basic methods required to understand the measurement of mortality and morbidity in the developing world. The second part will focus on a particular topic or case study that illustrates the material taught. This part of the session will be purely discussion-based and will be led by the students.

Evaluation:	Homeworks (3)	45% (15% each)
	Discussion chair/presentation	20%
	Paper	15%
	Final Exam	20%

Homeworks will focus on the methods discussed in lecture that are commonly used to measure mortality and health status in developing countries. Homeworks will be completed on an individual basis. Homeworks will be due two weeks after they are distributed.

Discussion chair: Each student will present at least one set of readings to the class. Students are encouraged to use a presentation format (powerpoint, transparencies) to present a summary of each article/chapter and a critique of the material. Based on the critique, the student will then pose a set of questions to stimulate class discussion. Presenters are encouraged to draw on other sources of information (beyond the required readings) to augment their presentation. At this time, the other students are expected to participate fully in the discussion and to provide constructive criticism about the presentation. The presenter should incorporate these comments into their final paper on this topic.

The paper should draw on the student's presentation, should incorporate comments from the other students to the presentation, and should include additional material related to the topic of study. The paper, however, should not exceed five pages, double-spaced, and 12 point font (1000 word limit).

The final exam will be based on the methods that are taught in class. Part of the exam will be multiple choice, and part of the exam will require students to use the methods that have been taught during the course.

Required texts:

Palmore, J.A., Gardner, R.W. 1983. *Measuring Mortality, Fertility, and Natural Increase: A self-teaching guide to elementary measures*. Honolulu: The East-West Center.

Shryock, H.S. and Siegel, J.S. 1976. *The methods and materials of demography*. San Diego: Academic Press.

Pol, L.G. and Thomas, R.K. 1992. *The demography of health and health care*.

Course Packet of selected readings

## IH 591D: Demographic Methods for Public Health Decision-Making Course Schedule

### Class #

### Section I: Mortality

- 1 (1/23) Introduction
- 2 (1/30) Excess Mortality and Unusual Population Structures  
2.1 Age, Sex, Racial, Ethnic composition; Population Pyramids  
2.2 Discussion Topic: The Determinants of High Sex Ratios at Birth in India  
Homework 1: Interpreting Sex ratios at Birth and Population Pyramids in China
- 3 (2/6) The Measurement of Mortality: Some Basics  
3.1 Crude death rates, age-specific death rates, standardization  
3.2 Discussion Topic: Mortality and International Human Rights
- 4 (2/13) Perinatal, Neonatal, Infant, and Under-Five Mortality  
4.1 Basic measures, DHS pregnancy histories  
4.2 Discussion topic: Gender Inequality in Child Mortality: Biology vs. Environment  
Homework 1: Due  
Homework 2: Standardization of Mortality Rates; Estimating child mortality rates and probabilities
- 5 (2/20) Global change in the cause structure of mortality  
5.1 ICD classifications, global trends in child and adult mortality  
5.2 Discussion Topic: Social Inequality in Health Status and Survival
- 6 (2/27) Life tables – Part 1  
Discussion Topic: Perceptions of Death and HIV/AIDS in the Developing World  
Homework 2: Due  
Homework 3: Constructing an Abridged Lifetable
- 7 (3/6) Life tables – Part 2  
Discussion Topic: None – day of review
- (3/13) No class – spring recess**
- 8 (3/20) Life table – Part 3
- Section II: Morbidity, Health Status, and Quality of Life**
- 9 (3/27) Perceived versus Actual Morbidity  
Homework 3: Due
- 10 (4/3) Basic Measures of Health Status: Disability-Adjusted Life Years (DALYs)  
11 (4/10) Health and Aging: Is Old-Age a Diagnosis?  
12 (4/17) Review and Papers Due  
13 (4/24) Final Exam

## IH 591D: Demographic Methods for Public Health Decision-Making Course Schedule

### Class #

### Section I: Mortality

#### 1 Introduction

Sources of demographic data on health status and mortality  
Rates, ratios, and lexis diagrams

Reading: Pol, Chapter 9, Pole  
Shryock and Siegel, Chapters 1 – 3  
Palmore and Gardner, Chapter 1  
DHS and CDC material

#### 2 Excess Mortality and Unusual Population Structures

##### 2.1 Age, Sex, Racial, Ethnic composition; Population Pyramids

Readings: Shryock and Siegel, Chapters 7,8,9

##### 2.2 Discussion Topic: The Determinants of High Sex Ratios at Birth in India: Female Infanticide, Sex-Selective Abortion, Both, or Neither?

Readings: Coale, A. 1991. Excess female mortality and the balance of the sexes in the population: An estimate of the number of 'missing females'. *Population and Development Review* 17(3): 517-523.

Miller, B. 1981. *The Endangered Sex: Neglect of Female Children in Rural North India*. Preface and Chapters 1 – 7. Ithica: Cornell University Press.

For homework: Johnson K.,Huang, B., and Wang, L 1998. Infant abandonment and adoption in China. *Population and Development Review* 24(3): 469-510.

Das Gupta, M. and Shuzhuo, L. 1999. Gender bias in China, South Korea, and India 1920-1990: Effects of War, Famine and Fertility Decline. *Development and Change* 30: 619-652.

Recommend: Sudha S., Rajan, S.I. 1999. "Female demographic disadvantage in India 1981-1991: sex selective abortions and female infanticide." *Development and Change* 30(3):585-618.

Das Gupta, M., Bhat, P.N. 1997. Fertility decline and increased manifestation of sex bias in India. *Population Studies* 51(3):307-15.

### Homework 1: Estimating and interpreting Sex ratios at Birth and Population Pyramids in China

### **3 The Measurement of Mortality: Some Basics**

#### **3.1 Crude death rates, age-specific death rates, effect of population composition on crude death rates, standardization**

Readings: Palmore and Gardner, Chapter 2, pp. 9-32  
Shyrock and Siegal, Chapter 14  
Pol, Chapter 7, pp. 196-199, 204-216

#### **3.2 Discussion Topic: Mortality and International Human Rights**

Readings: TBA

### **4 Perinatal, Neonatal, Infant, and Under-Five Mortality**

#### **4.1 Basic measures, DHS pregnancy histories**

Readings: DHS resources  
Shyrock and Siegel, Chapter 14

#### **4.2 Discussion topic: Gender Inequality in Early Child Mortality: Biology versus Environment**

Readings: Waldron, I. (1998). Sex differences in infant and early childhood mortality: Major causes of death and possible biological causes. In (unedited) Too Young to Die: Genes or Gender (pp. 53-83). New York. Department of Economic and Social Affairs, United Nations Population Division.

Das Gupta, M. (1987). Selective Discrimination against female children in rural Punjab India. *Population and Development Review* 13(1): 77-100.

Arnold, F. (1992). Arnold, F. (1992). Sex preference and its demographic and health implications. *International Family Planning Perspectives* (18)3: 93-101.

#### **Homework 1 Due**

#### **Homework 2: Standardization of Mortality Rates; Estimating child mortality rates and probabilities**

### **5 Global change in the cause structure of mortality**

#### **5.1 ICD classifications, global trends in child and adult mortality**

Readings: Most recent ICD classification system (if of interest)

Ahmad, O.B., Lopez, A.D. & Inoue, M. 2000. The decline in child mortality: a reappraisal. *Bulletin of the World Health Organization* 78(10): 1175-1191.

Rutstein, S.O. 2000. Factors associated with trends in infant and child mortality in developing countries during the 1990s. *Bulletin of the World Health Organization* 78(10): 1256-1270.

Koury, S.A., Massad, D., Fardous, T. 1999. Mortality and Causes of Death in Jordan 1995-1996: Assessment by Verbal Autopsy. *Bulletin of the World Health Organization* 77(8): 641-650.

## **5.2 Discussion Topic: Protracted-Polarized Health Transitions and the Emergence of Social Inequality in Health Status and Survival**

Readings: Bobadilla, J.L., Frenk, R., Lozano, T.F., and Stern, C. 1993. "The epidemiologic transition and health priorities." Chapter 3 in D.T. Jamison, W.H. Mosley, A.R. Measham, J.L. Bobadilla (eds.) *Disease Control Priorities in Developing Countries*. New York: Oxford Press for the World Bank.

Farah, A-A., Preston, S.H. 1982. Child Mortality Differentials in Sudan. *Population and Development Review* 8(2): 365-383.

Wall, L. Lewis. 1998. "Dead Mothers and Injured Wives: The Social Context of Maternal Morbidity and Mortality Among the Hausa of Northern Nigeria." *Studies in Family Planning* 29(4): 341-359.

## **6 Life tables – Part 1**

Readings: Palmore and Gardner, Chapter 2, pp. 33-58  
Shyrock and Siegel, Chapter 15  
Pol, Chapter 7, pp. 200-205

### **Discussion Topic: Perceptions of Death and HIV/AIDS in the Developing World – culture, social structure, and "behavioral change theory"**

Readings: Caldwell, J.C., Orubuloye I.O. and Caldwell, P. 1992. Under-reaction to AIDS in Sub-Saharan Africa *Social Science and Medicine* 34(11):1169-1182.

Orubuloye, I.O., Oguntimehin, F. 1999. Death is pre-ordained, it will come when it is due: attitudes of men to death in the presence of AIDS in Nigeria. Chapter 9 in *Resistances to Behavioural Change to Reduce HIV/AIDS Infection in Predominantly Heterosexual Epidemics in Third World Countries*. Canberra: Health Transition Centre.

Caldwell, J.C., Orubuloye, I.O., and Caldwell, P. 1999. Obstacles to behavioural change to lessen the risk of HIV infection in the African AIDS epidemic: Nigerian research. Chapter 10 in *Resistances to Behavioural Change to Reduce HIV/AIDS Infection in Predominantly Heterosexual Epidemics in Third World Countries*. Canberra: Health Transition Centre.

Ayiga, N., Ntozi, J., Ahimbisibwe, F.E., Odwee, J., Okurut, F.N. 1999. Deaths, HIV testing, and sexual behaviour change and its determinants in northern Uganda. Chapter 6 in *Resistances to Behavioural Change to Reduce HIV/AIDS Infection in Predominantly Heterosexual Epidemics in Third World Countries*. Canberra: Health Transition Centre.

## **Homework 2 due**

### **Homework 3: Constructing an Abridged Lifetable**

#### **7 Life tables – Part 2**

**Discussion Topic: None – day of review**

Readings: From lecture 6

### **Section II: Morbidity, Health Status, and Quality of Life**

#### **8 Life tables – Part 3**

#### **9 Perceived versus Actual Morbidity**

Readings: Khattab, H. 1992. The Silent Endurance. Social Conditions of Women's Reproductive Health in Rural Egypt. UNICEF: Regional Office of the Middle East and North Africa.

Zurayk, H., Khattab, H., Younis, N., Kamal, O., el-Helw, M. 1995. Comparing women's reports with medical diagnoses of reproductive morbidity conditions in rural Egypt. *Studies in Family Planning* 26(1):14-21.

Murray, C. and Chen, L. (1992). Understanding morbidity change. *Population and Development Review* 18(3):481-503, 593, 595.

Murray, J.C., Feachem, R.G., Phillips, M.A., Willis, C. Adult morbidity: limited data, and methodological uncertainty. In: *The Health of Adults in the Developing World*. R. Feachem, T. Kjellstrom, C. Murray, M. Over, M. Phillips. New York: Oxford University Press: 113-160.

## **Homework 3 Due**

#### **10 Basic Measures of Health Status: Disability-Adjusted Life Years (DALYs)**

Readings: Murray, C.J. 1994. Quantifying the Burden of Disease: The technical basis for disability-adjusted life years. *Bulletin of the World Health Organization* 72(3): 429-445.

Murray, C.J. and Lopez, A.D. Regional Patterns of Disability-Free Life Expectancy and disability-adjusted life expectancy: Global burden of disease study. *Lancet* 349(9062):1347-1352.

Murray, C.J., Lopez, A.D. 1997. Global burden of disease. Author's reply [letter]. *Lancet* 350(9071):144-145.

AbouZahr, C., Vaughan, J.P. 2000. Assessing the burden of sexual and reproductive ill-health: questions regarding the use of disability-adjusted life years. *Bulletin of the World Health Organization* 78(5): 655-664.

## **11 Health and Aging: Is Old-Age a Diagnosis?**

Sankar, A. "It's just old age: old age as a diagnosis in American and Chinese Medicine." Chapter 10 in D. Kertzer and J. Keith (eds.) *Age and Anthropological Theory*. Ithaca: Cornell University Press.

Hurd, L.C. "We're not old!": Older women's negotiation of aging and oldness. *Journal of Aging Studies* 13(4): 419-439.

Fillenbaum, G. et al. 1999. Development of an activities of daily living scale to screen for dementia in an illiterate rural older population in India. *Age and Ageing* 28:161-168.

## **12 Catch-up and Review**

### **Papers Due**

## **13 Final Exam**