

EPIDEMIOLOGY OF PSYCHIATRIC DISORDERS ACROSS THE LIFESPAN

**M19-561 /MPHS: PSYCHIATRIC AND BEHAVIORAL HEALTH SCIENCES
CONCENTRATION**

Fall 2015

Dates: 8/28/15– 12/11/15

Time: Friday, 1-4 pm

Location: TBA

Coursemasters: Anne L. Glowinski, MD, MPE
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Lecturers: Kathy Bucholz, Anne Glowinski, Rumi Price and Alexandre Todorov

Office Hours: By Appointment (Administrative Administrator: Brigitte Northrop:
northropb@psychiatry.wustl.edu)

Prerequisites: M21-560 Biostatistics I or Coursemasters' approval.

Course Credits: 3

Grading: Letter for MPHS Psychiatric and Behavioral Health Sciences Concentration students.
Choice of Letter or Pass/Fail for others.

Overview:

This course takes an integrated developmental approach to the epidemiology, etiology and evolving nosology of psychiatric disorders. The course is organized into four sections. Part I lays most of the conceptual groundwork needed to understand and plan research on psychiatric disorders and their risk factors in the general population. The next two sections mostly focus on the nosology, epidemiology and

etiology of psychiatric disorders as illuminated by key epidemiological studies. Part II covers disorders that are traditionally considered child psychiatric disorders but have developmental consequences for adulthood and/or often persist chronically through adulthood. Part III covers psychiatric disorders more typical of adulthood as well as those that often emerge in adolescence or earlier but are more prevalent in adulthood. Finally Part IV will be devoted to special topics in psychiatric and developmental epidemiology. By the end of the course, students with sufficient statistical background will be expected to design and conduct basic analyses of existing psychiatric epidemiologic data and others will be expected to conduct a literature review on a topic of their choice. Alternatively, students will have the option to prepare a poster submission to a meeting of their choice.

Reading References (we have asked library to put books on reserve):

- Tsuang MT, & Tohen, M (Eds.), Textbook in Psychiatric Epidemiology, 3rd Ed. Hoboken, NJ: John Wiley and Sons, 2011
- American Psychiatric Association. DSM-IV. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: APA, 1994.
- American Psychiatric Association. DSM-5. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Washington, DC: APA, 2013.
- Susser, E. et al. Psychiatric Epidemiology: Searching for the Causes of Mental Disorders. Oxford University Press, 2006.
- Prince M et al. Practical Psychiatric Epidemiology, Oxford University Press, 2003

Links to supplementary reading or viewing material to be provided for each lecture

Course Format: The course will include review of material for each class, lectures, class discussions, participation (see below), preparation of analytical or other project, project presentation

Competencies:

1. Develop a critical understanding of diagnostic criteria in psychiatry, their past, present and future.
2. Recognize the development, natural course, known risk factors, and public health burden of psychiatric disorders and related behaviors across the lifespan.
3. Understand co-morbidity patterns and some of the underlying hypotheses as to why psychiatric disorders co-occur.
4. Plan and design epidemiological analyses using existing data to address substantive questions raised by course material.
5. Evaluate quality and comparability of epidemiologic data.
6. Evaluate the quality, strengths, and limitations of inferences drawn from observational descriptive studies, genetic association studies, and longitudinal and quasi-experimental approaches
7. Identify the sources of random and systematic error implicit in psychiatric health surveys.
8. Draw inferences from epidemiologic data to inform practice guidelines.
9. Appreciate ethical issues unique to psychiatric epidemiology research

Student Requirements for the course:

1. **Attendance is required for all classes.** Planned absences for reasons other than acute illness need to be excused in advance by coursemaster. Absences will typically be excused for reasons such as religious holidays, career development activities, or illness. Students who miss more than

three classes, even for excused absences, may be expected to withdraw from the class or to negotiate an arrangement to make up for the missed lectures.

2. **Readings or other material review** should be completed before each lecture. Articles or links to articles or other material will be posted on blackboard in advance of each lecture.
3. **Participation** is expected of each student. One hour of each course session will be devoted to student-led discussions/presentations. This will consist of either informal roundtable discussions, motivated by the readings, or presentations by students as indicated by the instructor for the session.
4. **Final Project:** Each student will be expected to decide on a final project after discussion with his/her primary mentor. An outline for the final project will be due by the sixth class of the course or October 2nd, 2015 and will be presented during class for feedback. Format for the final product can vary according to each student's career development needs, background, and goals. Acceptable final projects include: literature review paper, analytical project on topic of student's interest, or a poster.

Evaluation

- 10% Attendance
- 40% Participation
- 10% Final project outline/plans due October 2nd, 2015 (will be presented in class that day)
- 40% Final Project: Poster, Literature review paper or analytical project on topic of student's interest due last class 12/11/15

Grading Scale: TBA

COURSE OUTLINE

WEEK 1: August, 28th, 2014

Lecturers: Kathleen K. Bucholz, Ph.D., MPH, MPE

Introduction to Psychiatric Epidemiology

- Class and expectations overview
- History of psychiatric epidemiology research
- Evolution of psychiatric diagnosis
- DSM vs. RDOC
- Basic methods to identify risk factors for mental disorders
- Special ethical considerations
- **Discussion: nosology and measurement -general**

Readings:

- Susser, Chapters 1,2,3,4,5,6,7,8, 23 (Recommended)
- Copeland, Shanahan, Costello, Angold. Cumulative prevalence of psychiatric disorders by young adulthood: a prospective cohort analysis from the Great Smoky Mountains Study. JAACAP, 2011;50:252-61.
- Angold and Costello, Nosology and Measurement in Child and Adolescent Psychiatry, 2009. JCPP, 50:9
- NIMH Director's Blog entry on DSM 5:
<http://www.nimh.nih.gov/about/director/2013/transforming-diagnosis.shtml>
- NIMH Research Domain Criteria: <http://www.nimh.nih.gov/research-priorities/rdoc/nimh-research-domain-criteria-rdoc.shtml>

WEEK 2: September, 4th, 2015

Lecturer: Anne Glowinski, MD, MPE

Overview of Psychiatric Epidemiology Data

- Register data
- What constitutes a landmark study?
- Overview of instruments used in psychiatric epidemiology research
- Publicly available data sets relevant to psychiatric and behavioral health
- Common designs in psychiatric epidemiologic studies
- **Discussion: strengths and weaknesses of common psychiatric epidemiologic designs**

Readings:

- Tsuang, Chapter 8, 13 and 14 (Recommended)
- Tohen, Bromet, Murphy, Tsuang. Psychiatric epidemiology. Harv Rev Psychiatry. 2000; 8:111-25.
- Munk-Jørgensen and Østergaard. Register-based studies of mental disorders. Scand J Public Health. 2011; 39:170-4.
- Allebeck P. The use of population based registers in psychiatric research. Acta Psych Scand 2009; 120: 386-91

- Kessler, RC. The challenges of using epidemiology to inform clinical practice. *Int Rev Psychiatry* 2007; 19: 509-21.

WEEK 3: Sept 11th, 2015

Lecturer: Kathleen K. Bucholz, Ph.D., MPH, MPE

Psychiatric epidemiology: The Big Picture

Burden of illness in the U.S. and worldwide

Commonly occurring mental disorders: prevalence and course across the lifespan

Landmark Psychiatric Epidemiology Contributions

Comorbidity

Discussion: GBD results and implications for mental health policy and services planning

Readings:

- Tsuang et al, Ch 9
- Kessler RC, Wang PS. The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annu Rev Public Health* 2008; 29: 1115-129
- Gaudermann AM et al. Comorbidity and disease burden in the NCS-R. *Depression and anxiety* 2012; 29: 797-806
- Global Burden of Disease 2010 studies: Read Vos, Lim and Murray OPTIONAL
- Lim SS et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380: 2224-2260. OPTIONAL
- Vos T et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380:2163-2196. ******READ******
- Murray CJL. Et al. Disability-adjusted live years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380:2197-2223. OPTIONAL

WEEK 4: September 18th, 2015

Lecturer: Alexandre Todorov, PhD

Introduction to psychiatric genetics

- Brief overview of family, twin and molecular approaches
- Genetic epidemiologic studies and psychiatric nosology
- Psychiatric comorbidity and structural analyses for psychiatric phenotypes
- Conceptualization of the development of psychopathology
- **data analysis – begin analysis using SDA for NCS-1**

Readings:

- Susser, Chapters 28, 29, 31
- Tsuang, Chapters 3 and 4
- Kendler KS. Explanatory models for psychiatric illness. *Am J Psychiatry* 2008; 165: 695–702.
- Kendler KS. The dappled nature of causes of psychiatric illness: replacing the organic-functional/hardware-software dichotomy with empirically based pluralism. *Mol Psychiatry*. 2012 Jan 10.
- Kendler KS. Reflections on the relationship between psychiatric genetics and psychiatric nosology. *AJP* 2006; 163: 1138–1146.

- OPTIONAL: Susser, Chapters 30, 32, 33

WEEK 5: September 25th, 2015

Lecturer: Anne L. Glowinski, MD, MPE

Public Mental Health Perspectives on Child Psychiatric Epidemiology

Burden of illness worldwide
Burden of illness in US
Landmark Child Studies
Common and less-common disorders
Inference of need/under-service

Discussion: Rose's paradox

Readings:

- Rose, G. Sick Individuals and Sick Populations. *International Journal of Epidemiology*. 1985. 14, 32-38
- John. Why the prevention paradox is a paradox, and why we should solve it: a philosophical view. *Prev Med*. 2011. 53, 250-2.
- Kieling et al. Child and adolescent mental health worldwide: evidence for action. *The Lancet*, 2011. 378, 1515-1525

WEEK 6: October 2nd, 2015

Lecturer: Kathleen K. Bucholz, Ph.D., MPH, MPE

Mental health services and barriers to treatment

Methodological Issues related to the study of minority samples and individuals
Overview of mental health services data
Barriers to treatment: from simple to complex
Examples of innovative approaches
Discussion: TBA

Readings: TBA

WEEK 7: October 9th, 2015

Lecturer: Anne Glowinski, MD, MPE

Attention Deficit Hyperactivity Disorder, Conduct Disorder, and Oppositional Defiant Disorder (aka "Disruptive Disorders" or "Childhood Externalizing Disorders")

- Historical perspectives on ADHD diagnosis
- Epidemiology of Attention Deficit Hyperactivity Disorder
- Complexity and comorbidity with other disorders of childhood
- Other disruptive disorders: Conduct disorder, Oppositional Defiant Disorder - Epidemiology, Risk Factors, Comorbidity, Treatment
- **Discussion: ADHD and disruptive disorders as precursors to addiction**

Readings:

- Still, G. F. (2006). Some abnormal psychical conditions in children: excerpts from three lectures. *J Atten Disord*, 10(2), 126-136. doi: 10.1177/1087054706288114

- Faraone, S. V., Sergeant, J., Gillberg, C., & Biederman, J. (2003). The worldwide prevalence of ADHD: is it an American condition? *World Psychiatry*, 2(2), 104-113.
- Groenman, A.P., Oosterlan, J., Ronmeise, N., Franke, B., Roeyers, H., Oades, R.D., Sergeant, A., Buitelaar, J.K. & Faraone, S.V.
- Lahey BB, Waldman ID. Annual research review: Phenotypic and causal structure of conduct disorder in the broader context of prevalent forms of psychopathology. *J Child Psychol Psychiatry* 2012; 53: 536-557.
- Frick PJ, Nigg JT. Current issues in the diagnosis of Attention Deficit Hyperactivity Disorder, Oppositional Defiant Disorder and Conduct Disorder. *Annu Rev Clin Psychol* 2012; 8: 77-107.
- Loeber R, Burke J, Pardini DA. Perspectives on oppositional defiant disorder, conduct disorder and psychopathic features. *J Child Psychol Psychiatry* 2009; 50: 133-142.
- Mathys W, Vanderschuren LJMJ, Schutter DJLG. The neurobiology of oppositional defiant disorder and conduct disorder: Altered functioning in three mental domains. *Dev Psychopath* 2013; 25: 193-207.

WEEK 8: October 16th, 2015

Lecturer: Kathleen K. Bucholz, Ph.D., MPH, MPE

Developmental Epidemiology of Addiction

- Nosology and epidemiology
- Addiction across the lifespan
- Comorbidity: independent and induced
- Drug harms
- Global burden of disease
- **Discussion: Students to present their project outlines for the class**

Readings:

- Caulkins JP et al. Design considerations for legalizing cannabis: lessons inspired by analysis of California's Proposition 19. *Addiction* 2011; 107: 865-871.
- Commentaries on Caulkins: *Addiction* 1022; 107: 872-877
- Edwards & Gross, Alcohol dependence syndrome. *Br Med J* 1976; 1058.
- Tsuang, Ch 21, 22
- Bachhuber MA, Saloner B, Cunningham CO, Barry CL. Medical cannabis laws and opioid analgesic overdose mortality in the United States, 1999-2010. *JAMA Intern Med*. Doi.10.1001/jamainternmed.2014.4005. Published online Aug 25, 2014. (optional)

WEEK 9: October 23rd, 2015

Lecturer: Anne L. Glowinski MD, MPE

Epidemiology of Precursors of personality and personality disorders

- Continuity of personality and temperament across the lifespan
- Prediction of psychopathology from early life personality and temperament
- General population outcomes of different personality traits
- Overlap between standard personality measures, personality disorder, and psychopathology
- **Discussion: the relationship between temperament, personality and psychopathology**
- **Readings:**
 - Goldberg, Lewis R. The structure of Phenotypic Personality traits, *American Psychologist*, Jan1993, Vol. 48 Issue 1, p26, 9p
 - Krueger, R., Eaton, N. Personality Traits and the Classification of Mental disorders: Towards a More Complete Integration in DSM-5 and an Empirical Model of

WEEK 10: October 30th, 2015

Lecturer: Kathleen K. Bucholz, Ph.D., MPH, MPE

Eating disorders and Obesity

- Anorexia, Bulimia and Binge eating disorder: Epidemiology, risk factors, comorbidity, treatment
- Obesity epidemic in US
- Concept of food addiction
- Regional variations and global trends
- Cultural influences on eating disorders
- **Discussion: the case for food addiction**

Readings:

- Tsuang, Chapter 20
- Becker et al. Social network media exposure and adolescent eating pathology in Fiji. *Br J Psychiatry*. 2011 (optional)
- Kessler RC et al.: The prevalence and correlates of binge eating disorder in the WHO world mental health surveys. *Biol Psych* 2013; 73: 904-914.
- Ziauddeen H, Farooqi IS, Fletcher PC. Obesity and the brain: How convincing is the addiction model? *Nature Rev Neuroscience* 2012; 13: 279-286.
- Gearhardt AN, Bragg MA, Pearl RL, Schvey NA, Roberto CA, Brownell KD. Obesity and public policy. *Annu Rev Clin Psychol* 2012; 8: 405-30.

WEEK 11: November 6th, 2015

Lecturer: Anne L. Glowinski, MD, MPE

Epidemiology of Schizophrenia, Psychotic Disorders and Autism

- Historical Perspective on schizophrenia population based research
- Precursors and prodromes in the general population
- Assessment of autism for epidemiological studies.
- Categorical and dimensional views of Autism
- Autism Prevalence estimates and challenges in assessment across historical periods
- Autism Emerging international prevalence data
- **Discussion: the cannabis-psychosis link**

Readings:

- Tsuang, Chapters 16, 26, 29 and 31(optional)
- Rossler et al. Linking substance use with symptoms of sub-clinical psychosis in a community cohort over 30 years. *Addiction*. 2011.
- Poulton, R., Caspi, A., Moffitt, T. E., Cannon, M., Murray, R., & Harrington, H. (2000). Children's Self-Reported Psychotic Symptoms and Adult Schizophreniform Disorder: A 15-Year Longitudinal Study. *Arch Gen Psychiatry*, 57(11), 1053-1058. doi: 10.1001/archpsyc.57.11.1053
- Cannon, M., Caspi, A., Moffitt, T. E., Harrington, H., Taylor, A., Murray, R. M., & Poulton, R. (2002). Evidence for early-childhood, pan-developmental impairment specific to

schizophreniform disorder: results from a longitudinal birth cohort. *Arch Gen Psychiatry*, 59(5), 449-456.

- Constantino. The quantitative nature of autistic social impairment. *Pediatr Res*. 2011.
- Lazzof et al. Prevalence of pervasive developmental disorders among children at the English Montreal School Board. *Can J Psych*. 2010.

WEEK 12: Nov 13th, 2015

Lecturer: Kathleen K. Bucholz, Ph.D., MPH, MPE

Epidemiological Studies of Psychiatric Disorders in Geriatric Populations

- Global and US trends in aging
- Epidemiological insights on end of life course of psychiatric illness
- Dementia: epidemiological perspectives
- Discussion: planning for an aging US population

Readings:

- Sosa-Ortiz A et al. Epidemiology of dementias and Alzheimer's Disease. *Arch Med Res* 2012; 43: 600-608.
- Gandy S & DeKosky ST. Toward the treatment and prevention of Alzheimer's Disease: Rational Strategies and Recent Progress. *Annu Rev Med* 2013; 64: 367-383

WEEK 13: Nov 20th, 2015

Lecturer: Anne L. Glowinski, MD, MPE

Mood and Anxiety disorders

- Mood and anxiety disorders across the lifespan
- Informants in psychiatric epidemiology of youth internalizing disorders
- Youth Bipolar disorder and controversies
- Genetic epidemiology of depressive and anxiety disorders
- Family Studies of bipolar disorder
- Discussion: The case of juvenile bipolar disorder

Readings:

- Tsuang, Chapters 17, 18, 19 and 24 (Optional)
- Glowinski et al: Genetic Epidemiology of Self Reported Lifetime DSM-IV Major Depressive Disorder in a Population Based Twin Sample of Female Adolescents. *Journal of Child Psychology and Psychiatry and Allied disciplines* 2003; 44: 988-996
- Duffy et al. Findings from bipolar offspring studies: methodology matters. *Earl Interv Psych*. 2011.

WEEK 14: Nov 27th, 2015

THANKSGIVING BREAK

WEEK 15: December 4th, 2015

Lecturer: Rumi Price PhD

Suicide and Suicidality

Global trends and cohort effects

Epidemiology across the lifespan
Risk factors and models of suicide diathesis
Prevention and mixed results
Discussion: Based on readings

Readings:

- Tsuang, Chapter 28 (optional)
- Nock et al. Suicide and suicidal behavior., Epidemiol Rev 2008; 30: 133-154 (required).
- Glowinski et al., Suicide attempts in an adolescent female twin sample. J Am Acad Child Adolesc Psychiatry 2001; 40: 1300-1307 (optional)
- Fu et al. A twin study of genetic and environmental influences on suicidality in men (optional)
- Page et al. Effectiveness of Australian youth suicide prevention initiatives. Br J Psychiatry. 2011 (optional)

WEEK 16: December 11th, 2015

CLASS FROM 1-4 PM INCLUDING POSTER OR PRESENTATION SESSION

Final presentations – each student to have 30 min for presentation