

***Work and Health***  
**CHS M278/EHS M270**  
**Spring 2012**

April 4, 2012 – June 6, 2012  
School of Public Health, Rm 41-235,  
Wednesday 9:00 a.m. – 11:50 a.m.

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**Course Description:**

The impact of work on psychological and physical health, including cardiovascular disease, is explored in the context of newly emerging research. The focus is on work organization, psychosocial stressors, measurement (including hands-on experience), contextual factors (gender, ethnicity, social class), and how work stressors can be ameliorated. The class will have 10 three-hour sessions and will meet weekly.

**Course Requirements:**

**Readings:**

Schnall PL, Dobson M, Rosskam E, Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009.

Additional required readings are available as downloadable pdfs on our website: <http://unhealthywork.org>

**\*All articles are to be read prior to class in which reading is listed.**

**Grading:**

Class Participation (discussion): 5%  
Participant Observation Exercise: 5%  
Blog Assignment: 10%  
Case History Presentation: 10%  
Practice Questionnaire Packet: 10%  
Midterm: 25%  
Final Exam covering lecture materials and readings: 35%

## **Overview of Sessions:**

<b>Week</b>	<b>Date</b>	<b>Description</b>
1	4/04	Globalization, work and health
2	4/11	Introduction to psychosocial factors in the workplace
3	4/18	Conceptual and theoretical models: operationalization, measurement, and assessment of psychosocial factors
4	4/25	Physiological mechanisms leading to adverse physical and mental health outcomes
5	5/02	Cardiovascular risk factors
6	5/09	Assessing health outcomes with a focus on psychological distress and obesity – Instructors: Dr. BongKyo Choi & Dr. Marnie Dobson
7	5/16	Contextual factors mediating outcomes. Secondary interventions including individual programs
8	5/23	Programs and policies for regulation of workplace stressors, primary interventions: work organization redesign – Instructor: Dr. Paul Landsbergis
9	5/30	Economics costs of stressful working conditions
10	6/06	Course wrap-up and conclusions, final exam distributed

## **Description of Sessions:**

### **I. Globalization, work and health (April 4)**

The Global Epidemics we face in “advanced” industrialized countries as well as in rapidly industrializing countries are considered to be the “ordinary diseases of everyday life”: hypertension, heart disease, stroke, diabetes and depression. In most parts of the world, these diseases have replaced infectious diseases as the major causes of chronic illness and death. They are growing public health concerns in many emerging market economies, including China, India, Turkey, and Central and East European countries. Medicine struggles to find technologies to cope with these chronic diseases, while prevention is neglected.

But what makes us healthy or sick in the first place? The single strongest predictor of one’s health is social class position, usually measured by income, education or occupational status. Those at the lower rungs of the social class ladder get sicker and die younger than those at each higher rung. Income inequality and overall socio-economic insecurity are increasing worldwide; tax breaks for the rich, unregulated markets, the decline of trade unions, outsourcing, and cuts in social programs negatively impact working people, as well as families and communities.

One significant means through which social class transmits illness is through work and working conditions. While work can provide greater access to resources and well-being, it also has its detrimental side. Research shows that workers facing high demands at work combined with low control over the work process and/or workplace decision-making or high efforts combined with low rewards are more likely to die of heart disease and suffer from mental health problems than workers without such job stressors. Such stressors help to explain why those lower in the social class hierarchy have higher risk of heart disease and mental health problems than corporate CEOs. The greater our exposure to insecure, low control, and low-paying jobs; punishing, harsh or inflexible supervisors; work-family conflicts; the less access we have to money, power and the ability to cope and gain control over those pressures, the higher the chance for chronic stress and chronic illness to result.

Protecting workers from harm at work must be accompanied by initiatives addressing social and economic inequality in general, making work more conducive to health, increasing worker autonomy and participation in workplace decision-making, collective representation through trade unions, healthy job redesign, living wage jobs, paid sick and family leave, paid vacation time, universal access to health care, and pensions. Approaches focused on changing individual behaviors have not substantially altered overall population health indicators. Such approaches keep the discussion focused on individual responsibility for health without addressing the underlying causes of ill health and systemic change that is needed to reduce and prevent the burden of chronic illness plaguing the US and many other countries.

*Participant Observation Exercise distributed and reviewed in class. Due Session 3.*

### **Readings for Session 1:**

Beyond the Individual: Connecting Work Environment and Health. (Chapter 1) Gordon, D, Schnall, P., In Schnall PL, Dobson M, Rosskam E, Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009.

The Changing Nature of Work. In Schnall PL, Dobson M, Rosskam E, Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. Pp 17-20.

### Optional Reading:

Economic Globalization and Its Effects on Labor. (Chapter 2) Moutsatsos, C. In Schnall PL, Dobson M, Rosskam E, Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009.

## **II. Introduction to psychosocial factors in the workplace (April 11)**

Working people develop a wide variety of illnesses during their working lives, manifested in time lost from work, disability, physical incapacity, psychological distress and ultimately morbidity and mortality. How/whether these manifestations are connected to work is a critically important issue for those in the fields of medicine, occupational and public health. We will introduce the social epidemiologic approach, in which the workplace is viewed as a key determinant of a wide variety of behavioral and health outcomes. In other words, we focus upon the workplace as a relatively distal cause of these outcomes and view personality and individual factors as more proximal. Through viewing of a segment of Charlie Chaplin in the film *Modern Times*, we present two approaches to occupational health psychology, one of which focuses on individual coping and the other on the impact of the workplace on the individual. We present a brief overview of the field of stress research, and then examine in depth the historical origins of theoretical models of workplace psychosocial stressors.

*Directions for blog assignment distributed and reviewed in class.*

### **Readings for Session 2:**

Health, Productivity and Work Life in Karasek RA, Theorell T. Healthy Work: Stress, productivity and the reconstruction of working life. New York. Basic Books, Inc., 1990. pp. 1-31.

Measurement of psychosocial workplace exposure variables. In: Schnall PL, Belkic K, Landsbergis PA, Baker D (eds.) Occupational Medicine: State of the Art Review. The Workplace and Cardiovascular Disease. 2000; 15(1): 163-184.

### **III. Conceptual and theoretical models: operationalization, measurement, and assessment of psychosocial factors (April 18)**

Several theoretical models of workplace psychosocial stressors have been empirically validated, including the Demand Control Support, or job strain, model and the Effort-Reward Imbalance (ERI) model. Karasek's job strain model states that the greatest risk to physical and mental health from stress occurs to workers facing high psychological workload demands or pressures combined with low control or decision latitude in meeting those demands and low social support from others. The JCQ is one of the most popular instruments for assessing psychosocial working conditions. The lecture will address general features of the JCQ including psychometric information about the core scales – job control, job demands, and social support at work. In addition, recent international efforts for developing a new version of the JCQ (i.e., JCQ 2.0) will be presented, along with some intellectual inquiries on job demands and cultural adaptation of the JCQ (e.g., differential item functioning) in non-US countries.

Johannes Siegrist's broader ERI model defines stressful job conditions as a "mismatch between high workload (high demand) and low control over long term rewards". In comparison to the DCS model with its emphasis on moment to moment control over the work process (i.e., decision latitude), the ERI model provides an expanded concept, emphasizing macro level, long term control vis-à-vis rewards such as career opportunities, job security, esteem and income. The ERI model also integrates the exigencies and rewards of the job with the individual's input and coping style.

This session describes three main approaches for measurement of job characteristics: self report questionnaires (e.g., Job Content Questionnaire to measure job strain, ERI questionnaire, Occupational Stress Index); imputation of job characteristics scores based on aggregate data (e.g. national job title averages); and external assessment (e.g. supervisor or coworker ratings, job analysis by expert observers). We review important research results, highlight advantages and limitations of each method and discuss some issues to be resolved through future research. We recommend multi-method strategies for convergent validation, using as many of these approaches as possible.

*Participant Observation Exercise due. In-class discussion.*

*Practice Questionnaire Packet distributed and reviewed in class. Due Session 4.*

#### **Readings for Session 3:**

Karasek RA, Theorell T. Healthy Work: Stress, productivity and the reconstruction of working life. New York. Basic Books, Inc., 1990, pp. 31-82.

Kasl, S. The Influence of the Work Environment on Cardiovascular Health: A Historical, Conceptual, and Methodological Perspective. Journal of Occupational Health Psychology 1996; 1(1): 42-56.

### **IV. Physiological mechanisms leading to adverse physical and mental health outcomes (April 25)**

This session will draw from extensive research which reveals that a wide range of workplace conditions have been implicated as risk factors for a variety of health problems including cardiovascular disease (CVD), psychological distress and work-related musculoskeletal disorders. These workplace conditions include shift work, long work hours, and chemical, physical, and psychosocial conditions. The most consistent evidence is provided by sources of psychosocial stress at work. The deleterious physiological effects of different stressful work scenarios are reviewed, with a focus on cardiovascular hemodynamic

changes leading to the development of essential hypertension. Mechanisms will be discussed by which long work hours and shift work as well as exacerbating physical stressors such as noise, glare, heavy lifting, vibration, cold and heat can impact upon physiologic systems. Occupational groups exposed to a large number of these stressors are found to be at high risk for hypertension, myocardial infarction, stroke, peptic ulcer disease, headache, musculoskeletal disorders, burnout, depression, anxiety and other undesirable outcomes. They may also be susceptible to mood and sleep disturbances and disrupted relationships with family and friends.

*Practice Questionnaire Packet due.*  
*Midterm distributed. Due Session 6.*

#### **Readings for Session 4:**

Principles of allostasis: optimal design, predictive regulation, pathophysiology and rational therapeutics. Sterling, P. In Schulkin, J. Allostasis, Homeostasis, and the Costs of Adaptation, Cambridge University Press, 2004. pp. 1-36.

The central nervous system: Bridge between the external milieu and the cardiovascular system. In: Schnall PL, Belkic K, Landsbergis PA, Baker D (eds.) Occupational Medicine: State of the Art Review. The Workplace and Cardiovascular Disease. 2000; 15(1):107-115.

#### **V. Cardiovascular risk factors (May 2)**

Research studies reveal that a wide range of workplace conditions have been implicated as risk factors for a variety of health problems including cardiovascular disease (CVD), psychological distress and work related musculoskeletal disorders. These workplace conditions include shift work; long work hours, threat avoidant vigilant work and chemical, physical, and psychosocial conditions. We will review the strength of evidence for these outcomes and examine the role of potential confounders in evaluating the research results. We will present an overview of methods to assess health outcomes including medical exams, workplace injury records. Special emphasis will be given on workplace ambulatory blood pressure monitoring as an efficacious, non-invasive method for identifying work-related hypertension as well as the emerging public health epidemic of “hidden hypertension”.

*Practice Questionnaire Packet returned and reviewed.*  
*News article submission due for approval (email to [pschnall@workhealth.org](mailto:pschnall@workhealth.org) and [erinwigger@aim.com](mailto:erinwigger@aim.com)).*

#### **Readings for Session 5:**

The Workplace and Cardiovascular Disease. (Chapter 6) Landsbergis, P., Schnall, P., Dobson, M., In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp. 89 – 101.

Landsbergis PA, Schnall PL, Dietz DK, Warren K, Pickering TG, Schwartz JE. Job strain and health behaviors: Results of a prospective study. American Journal of Health Promotion 1998; 12(4): 237-245.

## **VI. Assessing health outcomes with a focus on psychological distress and obesity (May 9) – BongKyoo Choi and Marnie Dobson**

Obesity, an excess of body fat, has been a serious public health issue in the United States (US) since 1980. Among US adult aged 20-74 years, the prevalence rate of obesity (defined as Body Mass Index  $> 30 \text{ kg/m}^2$ ) has increased dramatically from 15% in 1980 to 34.3% in 2005-2006 National Health and Nutrition Examination Data. It is agreed among experts that the recent increase of obesity prevalence rate arises from change in the environment rather than from changes in genes. However, the role of work stress has never been fully explored as a risk factor for obesity in US workers. A theoretical framework for the linkage between work stress and obesity and recent empirical findings from a large US working population data will be presented.

A broad research field has developed to assess the role of work in relationship to psychological health or mental illness. Occupational health psychology as a research field has focused, in particular, on the association between work stressors and psychological health outcomes such as burnout, anxiety and depression. We will review the evidence for the contribution of work-related factors, such as job strain, to burnout, anxiety and depression as well as the mediating influences of gender and personality. Additionally, we will examine evolving research on “emotional labor” an aspect of the working conditions of human service work associated with high levels of burnout.

*Midterm due.*

*Articles for Case History Presentation distributed. Due Session 8.*

### **Readings for Session 6:**

Obesity in US workers: The National Health Interview Survey, 1986 to 2002. Caban AJ, Lee DJ, Fleming LE, Gómez-Marín O, LeBlanc W, Pitman T. *Am J Public Health*. 2005 Sep;95(9):1614-22. Epub 2005 Jul 28. pp. 1-9.

A framework for the concurrent consideration of occupational hazards and obesity. Schulte PA, Wagner GR, Downes A, Miller DB. *Ann Occup Hyg*. 2008 Oct;52(7):555-66. Epub 2008 Sep 2.

From Stress to Distress: The Impact of Work on Mental Health. (Chapter 7) Dobson, M., Schnall, P., In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp. 113 – 127.

### **Optional Readings:**

Choi B, Schnall PL, Yang H, et al. Psychosocial Working Conditions and Active-Leisure-Time Physical Activity in Middle-Aged Workers. International Journal of Occupational Medicine and Environmental Health Volume 23, Number 3, 2010. pp. 239-253.

Choi B, Schnall P, Yang H, et al. Sedentary Work, Low Physical Job Demand, and Obesity in US Workers. American Journal of Industrial Medicine Volume 53, Number 11, 2010. pp. 1088-1101.

## **VII. Contextual factors mediating outcomes; secondary intervention: individual programs (May 16)**

We will discuss current models of the complex pathways through which social conditions produce stress and influence behavior and risk of disease which progresses from general macro social conditions down to micro level processes in individual persons. These models describe how social structure (e.g., socioeconomic status or social class, race, gender) shapes the immediate social environment (e.g., working conditions, housing, neighborhood, access to services), which influences lifestyle behaviors (e.g., smoking, diet, exercise), personality and psychological characteristics (e.g., hostility, self efficacy, depression, Type A behavior, individual coping), and physiological risk factors for disease (e.g., blood pressure, cholesterol, overweight). In the context of these models, research findings linking personality/psychological characteristics, social conditions, job conditions and disease states are discussed. In addition, emphasis will be placed on recent research on the job strain model and the influence of job characteristics on behaviors, psychological characteristics and physiological responses to stress. This includes studies on the effects of "passive" (low demand low control) jobs on reducing self efficacy and increasing passive behavior, external locus of control, feelings of depression and learned helplessness; and the effects of "active" (high demand high control) jobs on increasing active learning, internal locus of control, a broader range of coping strategies, and intellectual flexibility.

Stress management programs (secondary intervention) teach workers about the nature and sources of stress, the effects of stress on health, and personal skills to reduce stress. We will also discuss programs that are complementary to these efforts, such as individual stress management and health promotion. Examples will be provided of programs that integrate workplace health promotion and occupational health.

*Review of Midterm.*

### **Readings for Session 7:**

Class, work, and health. Johnson JV, Hall EM. In: Amick B, Levine S, Tarlov AR, Walsh DC (eds.): Society and Health. New York, Oxford University Press, 1995, pp. 247-271.

Work and family in the 1990's. Perry-Jenkins, M, Repetti, R, Crouter, AC. Journal of Marriage and the Family 2000; 62: 981-998.

Work, Ethnicity, and Health in California (Chapter 8). In Schnall PL, Dobson M, Rosskam E. Unhealthy Work: Causes, Consequences and Cures. Baywood Publishing, 2009. pp. 133 – 148.

## **VIII. Programs and policies for regulation of workplace stressors; primary intervention: work organization redesign (May 23) – Paul Landsbergis**

This session will review the variety of legal and legislative measures that have been instituted to reduce employee exposure to workplace stressors. These include legislation (and accompanying regulations) and collective bargaining by labor unions and employers, both of which are designed to reduce exposure to workplace chemical, physical, ergonomic and psychosocial hazards. In addition, this session will examine how health educators, health psychologists, behavioral specialists and occupational health specialists have become increasingly aware of the workplace as a critical social environment that influences health behaviors. Two primary strategies (primary and secondary interventions, respectively) have been utilized to manage stress at work: organizational change approaches and stress management programs. Organizational change involves the identification of stressful aspects of work (e.g., excessive workload, low job control,

work-family conflict) and the design of strategies to reduce or eliminate the identified stressors. In this session, primary prevention strategies, aimed at redesigning jobs, work organization and/or employer policies, will be considered using case studies as examples.

*Case History Group Presentations.*

### **Readings for Session 8:**

Interventions. In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp. 169-172

Interventions to reduce job stress and improve work organization and worker health. (Chapter 11) Landsbergis, P.A., In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009, pp. 193-209

## **IX. Economic costs of stressful working conditions (May 30)**

While the costs of stressful working conditions are eventually experienced in the bodies of chronically stressed workers, these costs are not just an individual problem with individual solutions. While all workers exposed to unhealthy working conditions should have access to workers' compensation and health insurance to deal with the consequences of work-related injury or illness, employers and business must have a vested interest in preventing work from damaging the health and well-being of their employees. Businesses experience very real and extraordinarily high costs of work-related stressors and occupational injuries and illness. Employee illness and injury cost employers money and time. Besides the direct costs of health care and workers' compensation, more hidden costs include absenteeism, presenteeism or diminished productivity, and employee turnover all of which have a negative effect on the economic soundness of a work organization. The enormous costs of workers' compensation for work related disease may also provide an incentive to businesses to reduce workplace exposure to psychosocial stressors.

*Blog article due.*

### **Readings for Session 9:**

The Health and Economic Costs of "Unhealthy" Work, In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp. 87 - 88

Work, Psychosocial Stressors and the Bottom Line. (Chapter 9) Jauregui, M, Schnall P, In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp.153 – 165.

Stakeholder Perspectives on Work and Stress: Seeking Common Ground. (Chapter 10) Gordon, D, Jauregui, M, Schnall, P., In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009. pp. 173 – 190.

## **X. Course wrap-up and conclusions (June 6)**

This session will allow for a discussion that reviews the major themes of the course. The empirical (epidemiologic), theoretical, and biological evidence presented in this course provides convergent



validation that the relationship between workplace stressors and a number of adverse health outcomes is causal. In other words, the empirical findings are consistent with and predicted by the theoretical models, while the linkage between the theoretical models and empirical evidence is demonstrated to be plausible by considering biological mechanisms and experimental research. Based upon these conclusions, new strategies are explored for enhanced prevention and clinical management, work place interventions, and social policy to reduce the impact of disease, psychological distress and unhealthy behaviors that result from stressful working conditions. These strategies acquire an urgent public health dimension, given the magnitude of the epidemic of stress-related diseases and widespread psychological/behavioral effects, and the current deterioration in conditions of working life. Creating a healthy work environment is a high priority, and would entail the full participation of working people in the decision-making processes surrounding the organization of work.

*Final distributed. Due June 13<sup>th</sup>.*

**Readings for Session 10:**

Curing Unhealthy Work. (Chapter 19) Schnall, PL, Dobson, M, Roskam, E, Landsbergis, P., In Schnall PL, Dobson M, Roskam E., Editors Unhealthy Work: Causes, Consequences, Cures. Baywood Publishing, 2009.

Gardell B. Worker participation and autonomy: a multilevel approach to democracy at the workplace. In: Johnson JV, Johansson G. (Eds.) The Psychosocial Work Environment: Work Organization, Democratization and Health. Essays in Memory of Bertil Gardell. Baywood Publishing Co., Inc., Amityville, 1991, pp. 193-223