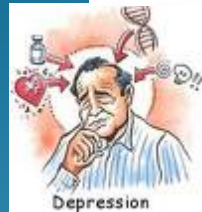
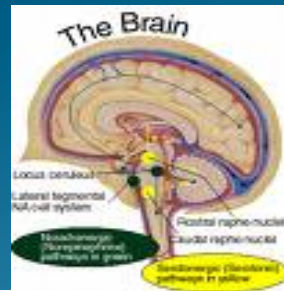


Psychological Health and Work



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Outline

- I. Prevalence and Costs
- II. Definitions/Measurement
 - Anxiety, Depression, Distress, Burnout
- III. Multifactorial Causes (individual, structural/work)
- IV. Contribution of Work Organization – research on psychosocial stressors and psychological illness:
 - Job strain
 - Effort-reward imbalance
 - Emotional labor
- IV. Contextual factors: gender, SES, maladaptive coping
- V. Research Limitations – Netterstrom et al, 2010

I. Prevalence and Costs

In any given 1-year period, 9.5 percent of the population, or about 20.9 million American adults, suffer from a depressive illness.

Women experience depression about twice as often as men.

In any one year about 3 in every 10 employees will have a mental health problem, and depression is one of the most common.

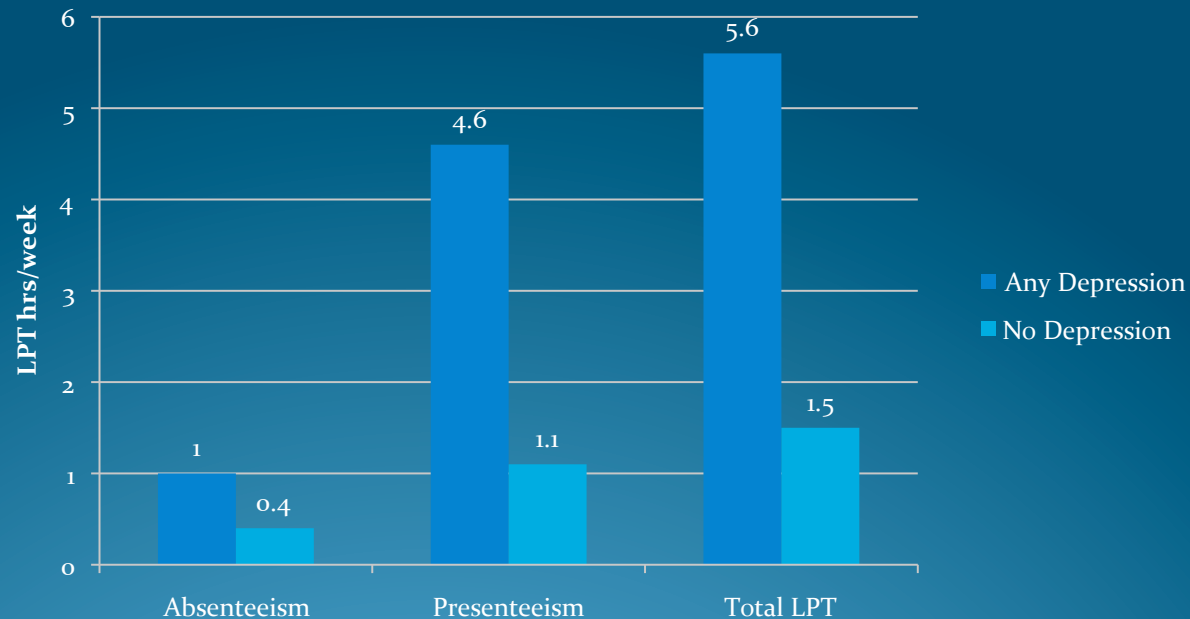
Costs: Stigma

A University of Michigan study (2004) of 443 depressed workers:

- 82 percent of the depressed workers had difficulty concentrating
- 83 percent lacked motivation
- 24 percent complained of chronic physical pain
- 50 percent missed one to three days of work because of their illness.
- Only 41 percent felt they could acknowledge their illness and still get ahead in their careers.
- Only 14 percent had taken advantage of employee assistance programs for workers who suffered from depression.
- *Thirty percent of working women suffering from depression either quit or lose a job as a result of symptoms.*

Costs

Average Lost Productive Time (LPT) Among US Workers with Depression and in the Absence of Depression



- This 2003 study draws the sobering conclusion that depression costs employers **\$44 billion** a year in lost productivity alone.

Stewart WF, Ricci JA, Chee E, Morganstein D. Lost productive work time costs from health conditions in the United States: results from the American Productivity Audit. Journal Occupational and Environmental Health 2003 Dec;45(12):1234-46.

II. Definitions/measurement

Anxiety

Depression

Psychological distress

Burnout

Def: Anxiety

1. An anxiety state consists of unpleasant feelings of tension, apprehension, nervousness, and worry, and activation of the autonomic nervous system.
2. The physiological manifestations of anxiety generally include:
increased blood pressure; rapid heart rate; sweating; dryness of mouth; nausea; vertigo; irregularities in breathing; muscle tension; and muscular-skeletal disturbances such as restlessness, tremors, and feelings of weakness(Spielberger and Rickman, 1990).

Measuring Anxiety

- DASS -Depression, Anxiety, Stress Scales (42 items)
- *Anxiety sub-scale (14 items)*
 - ❖ *apprehensive, panicky*
 - ❖ *trembly, shaky*
 - ❖ *aware of dryness of the mouth, breathing difficulties, pounding of the heart, sweatiness of the palms*
 - ❖ *worried about performance and possible loss of control*

Def: Depression

Symptoms:

- Sadness which does not change from day to day
- Crying for no apparent reason
- Anxiety, worrying, irritability or tension
- Disturbed sleep
- Reduced appetite and change in weight
- Tiredness, lethargy and lack of motivation
- Loss of interest in normal activities
- Forgetfulness and poor concentration
- Thoughts of worthlessness and hopelessness

Measuring Depression

- Disorder: usually a clinical diagnosis – e.g. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM IV)
- Depressive symptoms: Numerous measures for depression including the CES-D, Beck Depression Inventory (BDI), the Depression Rating Scale (HAM-D), the Profile of Mood POMS) etc.

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

	During the Past			
Week				
	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt that I could not shake off the blues even with help from my family or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt I was just as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I thought my life had been a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I talked less than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. People were unfriendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I enjoyed life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I had crying spells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt that people dislike me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I could not get "going."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology.

Def: Psychological Distress

- Detects signs or symptoms of mental distress – used for research purposes in place of a clinical diagnosis. It can also be used as an overall umbrella term for all mental or psychological problems.
- Many measures designed to measure signs of “distress” or “depressive symptoms” – sub-clinical

Measuring “Distress”

General Health Questionnaire (GHQ-12) We want to know how your health has been in general over the last few weeks. Please read the questions below and each of the four possible answers. Check the response that best applies to you.

Have you recently:

	Not at all (1)	No more than usual (2)	Rather more than usual (3)	Much more than usual (4)
1. Been able to concentrate on what you're doing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Lost much sleep over worry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Felt that you are playing a useful part in things?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Felt capable of making decisions about things?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Felt constantly under strain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Felt you couldn't overcome your difficulties?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Been able to enjoy your normal day to day activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Been able to face up to your problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Been feeling unhappy or depressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Been losing confidence in yourself?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Been thinking of yourself as a worthless person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Been feeling reasonably happy, all things considered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Def: Burnout

- German psychiatrist Herbert Freudenberger originator of the burnout syndrome (1974)
- Symptoms include:
 - Predominance of fatigue symptoms
 - Atypical physical distress symptoms
 - Symptoms are work-related
 - Symptoms appear in “normal” persons who did not suffer from prior psychopathology
 - Decreased effectiveness and impaired work performance due to negative attitudes and behaviors

Measuring Burnout

- Most commonly used measure developed by Christina Maslach

The MBI (Maslach Burnout Inventory) surveys address three general scales/domains:

- Emotional exhaustion measures feelings of being emotionally overextended and exhausted by one's work
- Depersonalization measures an unfeeling and impersonal response toward recipients of one's service, care treatment, or instruction
- Personal accomplishment (efficacy) measures feelings of competence and successful achievement in one's work

III. Multifactorial Causes

Etiology:

Genetic/family history

Individual/personality

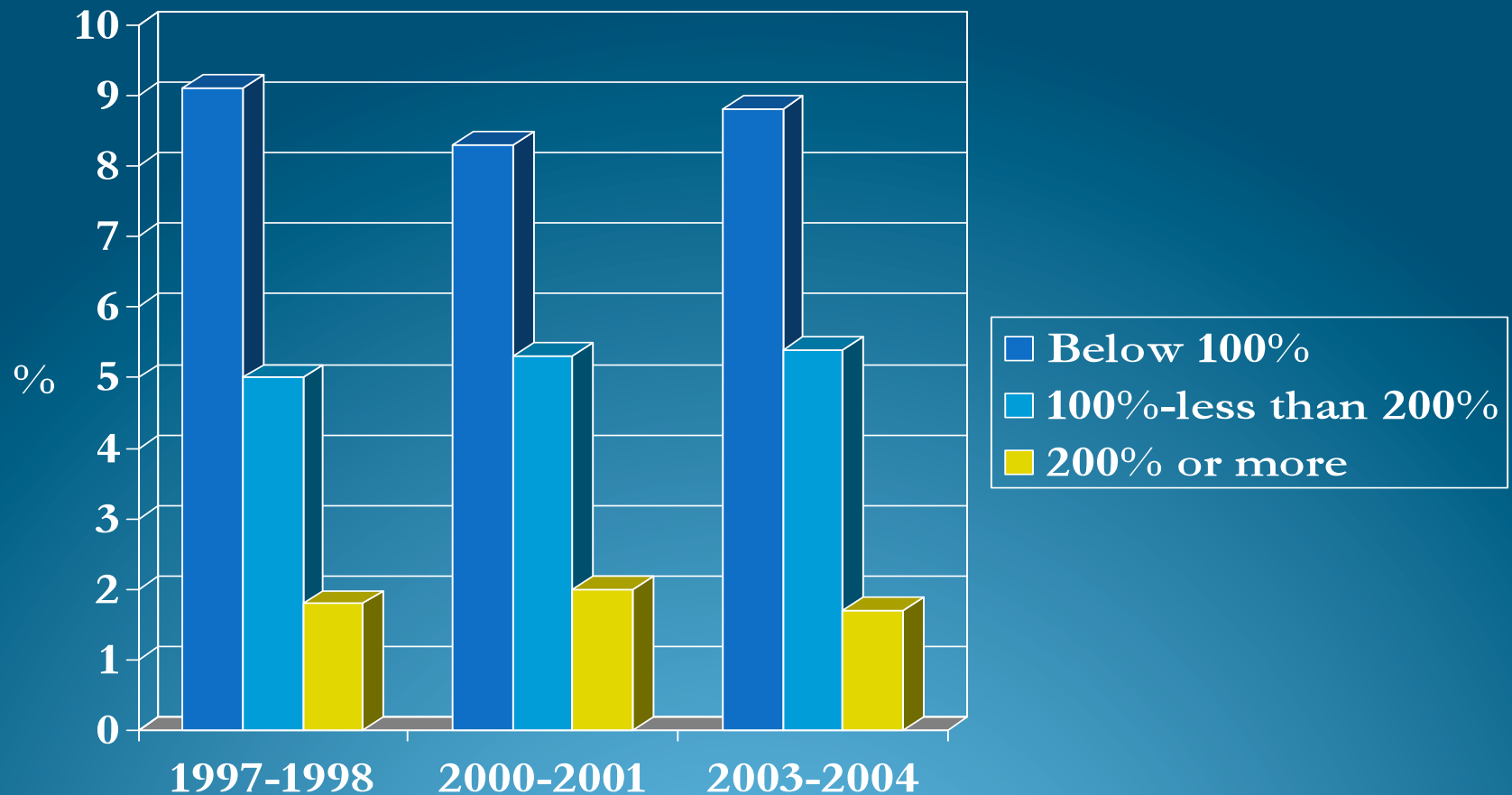
Life events (e.g., divorce, loss)

Social structural (e.g. SES, Race/Ethnicity, Gender)

Work organization and psychosocial stressors

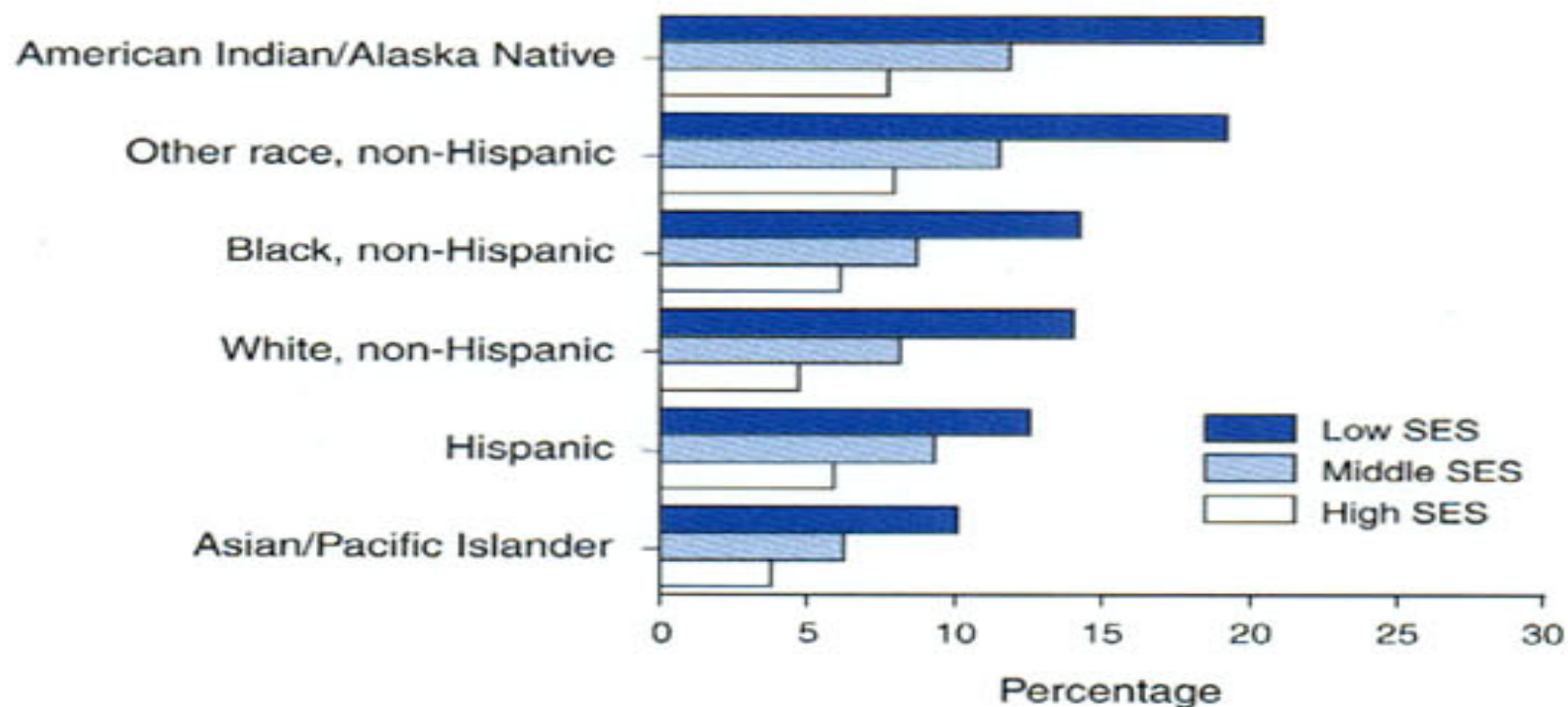
Focus on illnesses with social etiology: Depression, anxiety, burnout (work-related).

Serious Psychological Distress by Income (% poverty level), age 18+, U.S.



National Center for Health Statistics. Health, United States, 2006. Hyattsville, MD: 2006

FIGURE 2. Prevalence of frequent mental distress*, among adults, by racial/ethnic population and socioeconomic status (SES)[†] — Behavioral Risk Factor Surveillance System, United States, 1993–2001



* Self-reported mental health was not good (e.g., stress, depression, or emotional problems) ≥ 14 days during the preceding 30 days.

[†] Low SES: Those without a high school diploma or with annual household income of $< \$15,000$. High SES: Those with a college education and with annual household income of $\geq \$50,000$. Middle SES: All other respondents.

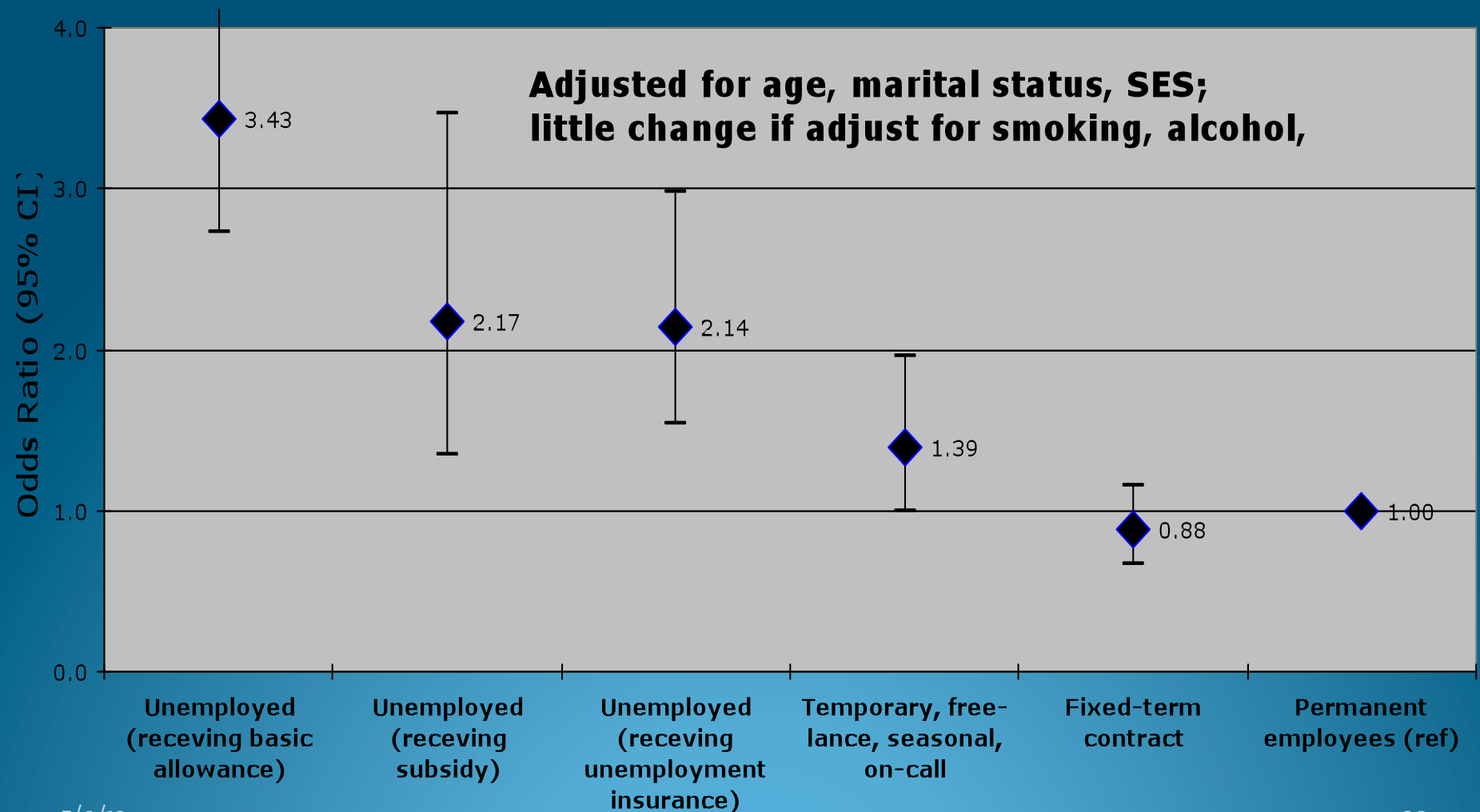
Zahran HS, R Kobau, DG Moriarty, MM Zack, WH Giles, J Lando. Self-reported frequent mental distress among adults--United States, 1993-2001. *Morbidity and Mortality Weekly Report* 53.41 (Oct 22, 2004): 963(4).

ILO study of Mental Health (Finland, Germany, Poland, UK, US)

- Incidence & costs of mental health problems increasing
- “while the origins of mental instability are complex...a number of common threads appear to link the high prevalence of stress, burnout and depression to changes taking place in the labour market, due partly to the effects of economic globalization.”
- unemployment, job insecurity, short-term contracts, time pressure, rationalization, new technology, tighter deadlines, quality demands, rising productivity requirements

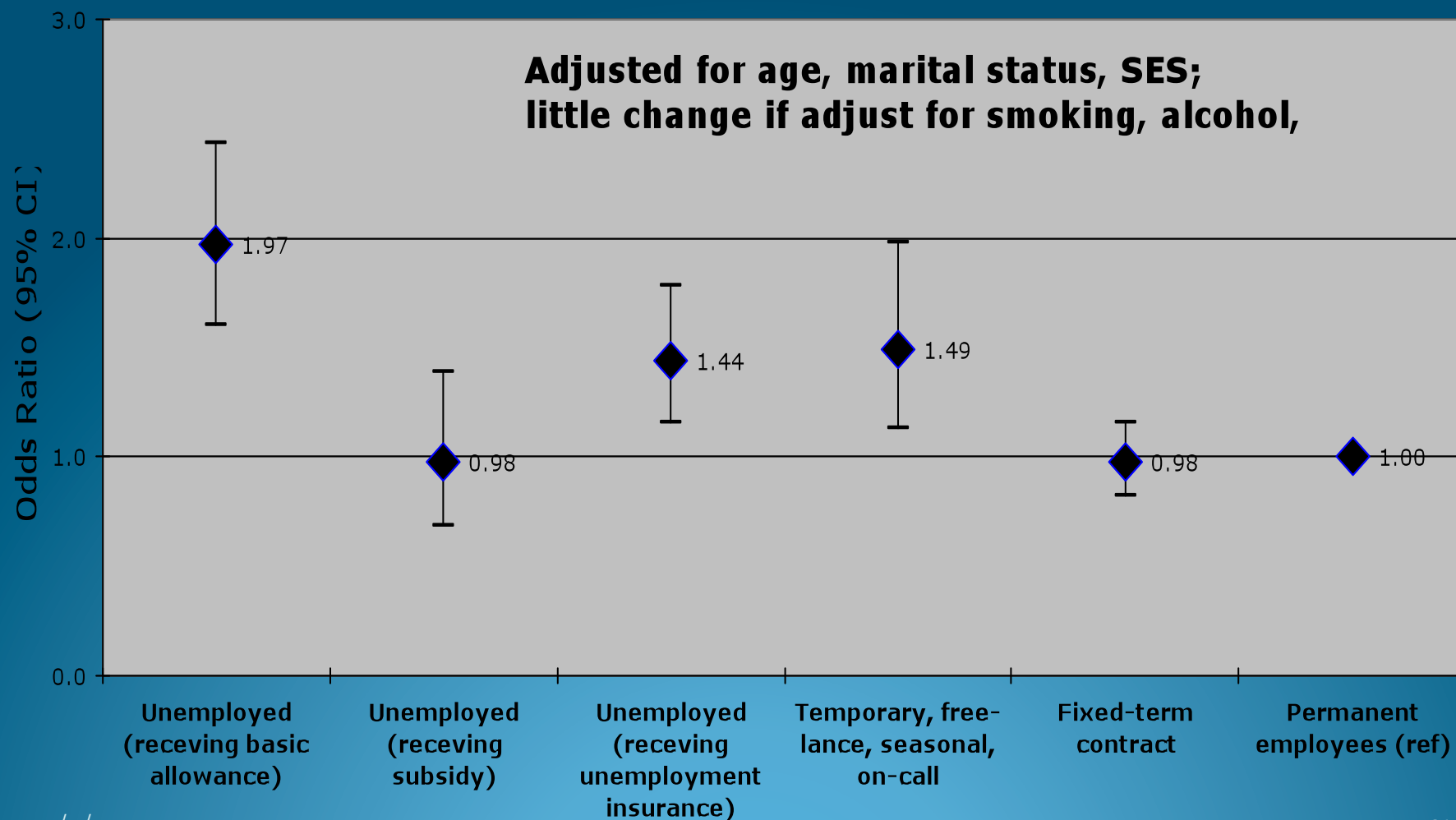
Precarious work and depression in the Finnish population: Men

(Virtanen et al. Int J Epidemiol 2003;32:1015–1021)



Precarious work and depression in the Finnish population: Women

(Virtanen et al. Int J Epidemiol 2003;32:1015–1021)



Working 11 hours a day may be linked with depression

January 26, 2012 | By Jeannine Stein, Los Angeles Times

Working 11 or more hours a day was associated with a 2.3- to 2.5-fold increased risk of having a major depressive episode compared with those who worked a standard seven- to eight-hour day.

Virtanen et al Overtime Work as a Predictor of Major Depressive Episode: A 5-Year Follow-Up of the Whitehall II Study
PLoS 2012



IV. Contribution of Work Organization to Psychological Illness

Psychosocial Stressors:

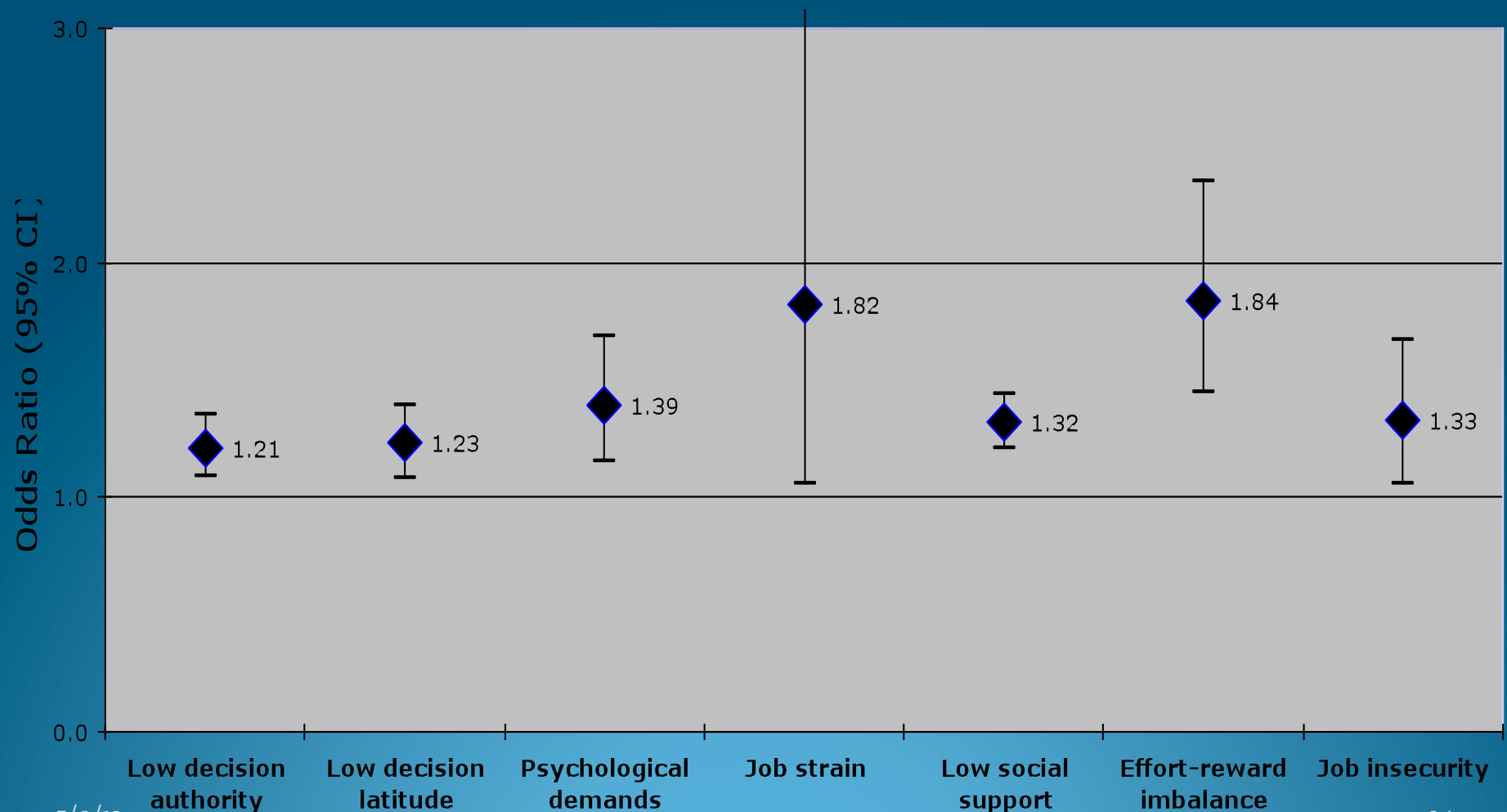
- Job strain

- Effort-reward imbalance

- Emotional labor

Meta-analysis of the association of work stressors and common mental disorders

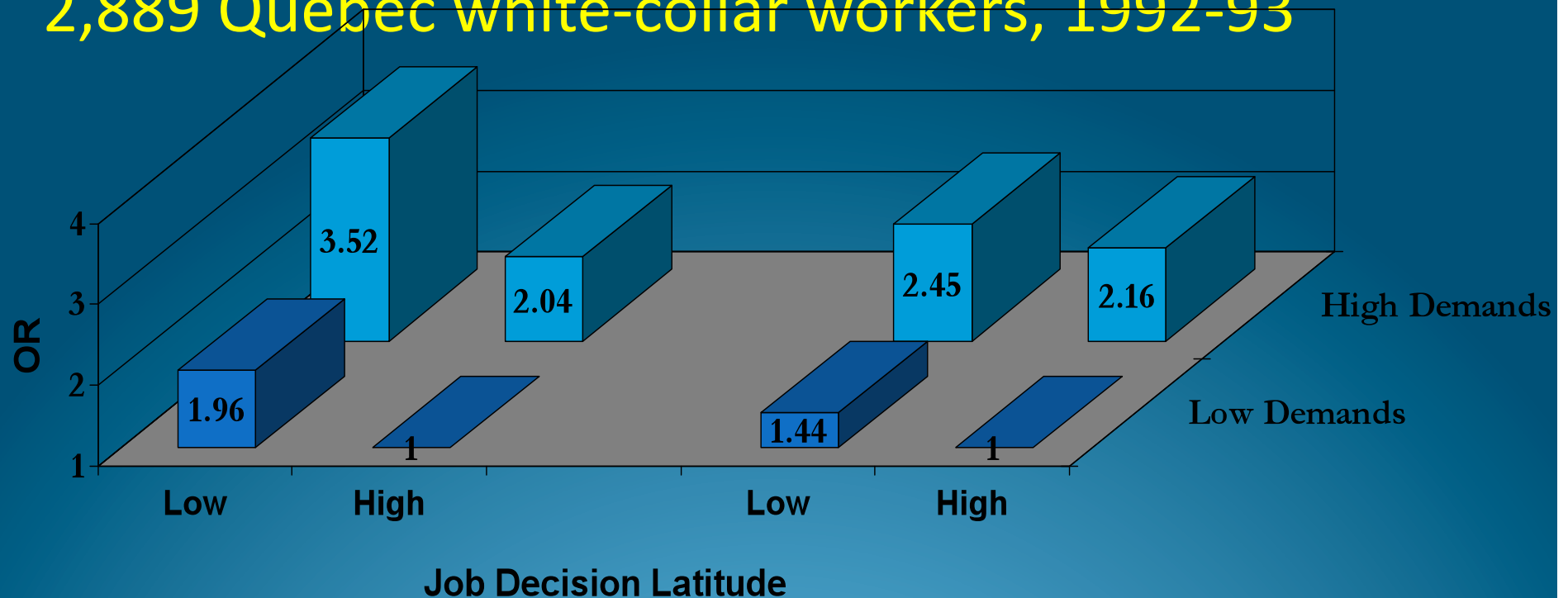
(Stansfeld SL, Candy B. Scand J Work Environ Health 2006;32(6,special issue):443-462.)



Job Strain and Anxiety

- Primary and secondary school teachers in the UK (controlling for age, gender and occupational grade) the prevalence of severe anxiety was higher in high job strain teachers (Cropley, Steptoe and Joeke 1999)
- Employed women (n=152) with high demands and low decision latitude had increased levels of anxiety, anger, depression, and hostility (Williams, Barefoot and Blumenthal et al, 1997)
- Employed professionals in Australia (n=1188) (controlling for gender, marital status, education, employment status, major life events and negative affectivity) high job strain associated with anxiety (OR = 3.42 (1.62 to 7.19)) (D'Souza et al. 2003).

High psychological distress (top 20% of PSI) among 2,889 Quebec white-collar workers, 1992-93



Crude Association

Bourbonnais R, Brisson C, Moisan J, Vezina M. *Scand J Work, Environ Health* 1996; 22:139-45.

Adjusted for Age, Gender, Employment Status, Occupation, Social Support, Cynicism, Hostility, Domestic Load, Past Year Stressful Life Events

Job strain and psychological well-being

• <u>Outcome</u>	<u>JDC Model</u>		<u>JDCS Model</u>		<u>Total N of</u>
	<u>Strain</u>	<u>Buffer</u>	<u>Strain</u>	<u>Buffer</u>	<u>Studies</u>
Psych well-being	28/41	15/31	9/19	2/5	43
Job satisfaction	18/30	10/23	8/14	2/6	31
Job “burnout”	3/4	0/4	1/1	0/2	4
Job-related Psych well-being	7/8	1/2	1/2	1/1	8

(ratio of supportive to total studies)

Van Der Doef M, Maes S. The job demand-control(-support) model and psychological well-being: a review of 20 years of empirical research. Work & Stress 1999;13(2):87-114.

Job Strain and Burnout

- 4 cross-sectional studies assessed the relationship between demands-control and support and burnout. Most showed support for the hypothesis, except 1 in a sample of construction workers.
- One showed a positive relationship between ISOSTRAIN (job strain and low support) and burnout.

Van Der Doef M, Maes S. The job demand-control(-support) model and psychological well-being: a review of 20 years of empirical research. *Work & Stress* 1999;13(2):87-114.

Ahola et al Contribution of Burnout to the Association Between Job Strain and Depression: the Health 2000 Study. JOEM (2006)

Design: Cross-sectional survey

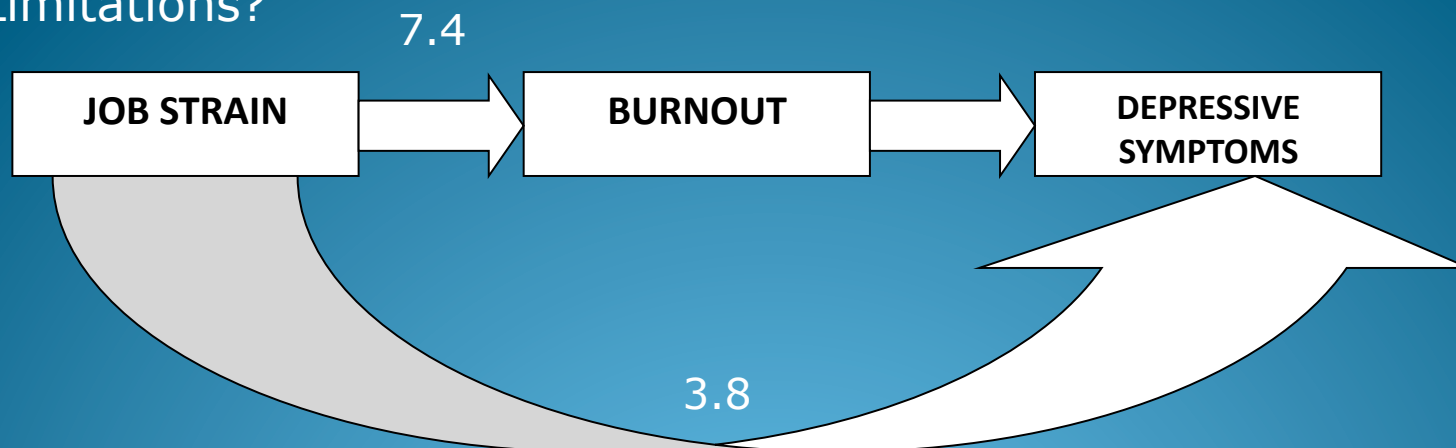
Sample: A representative sample of 3270 Finnish employees aged 30 to 64

Measures:

- Maslach Burnout Inventory–General Survey
- Beck Depression Inventory (depressive symptoms)
- Composite International Diagnostic Interview (*depressive disorder*)

Job strain, burnout & depression

- ❑ The risk for depressive symptoms and for depressive disorders of high strain was reduced by 69% or more after adjusting for burnout.
- ❑ Burnout is strongly related to job strain and may in part mediate the association between job strain and depression.
- ❑ Limitations?



Ahola K, Honkonen T, Kivimaki M. et al. Contribution of burnout to the association between job strain and depression: the Health 2000 study. JOEM Volume 48, Number 10, October 2006

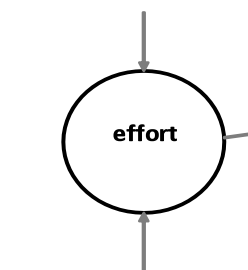
Effort-Reward Imbalance

The model of effort-reward imbalance

Modified from: Siegrist J (2002) Effort-reward imbalance at work and health. In: P. Perrewe, D. Ganster (eds.) Historical and Current Perspectives on Stress and Health (pp.261-291). New York: JAI Elsevier.

Extrinsic components

demands / obligations



motivation
(overcommitment)

labour income

- career mobility / job security
- esteem, respect



motivation
(overcommitment)

Intrinsic component

ERI and Depression

- A review of ERI and psychological outcomes included 16 studies and found that most studies assessing ERI and (psycho)somatic symptoms showed a positive association.
- Def: Psychosomatic symptoms ranged from MSD to depression.
- Employees exposed to ERI in these studies had an elevated risk of 1.44–18.55 for (psycho)somatic symptoms.

ERI and Burnout

- Van Vegchel et al (2005) also found 7 studies were concerned with job-related well-being (e.g. burnout)
- 6 studies that looked at the effort x reward hypothesis, found a positive association with emotional exhaustion, and more limited support for depersonalization.

[van Vegchel N](#), [de Jonge J](#), [Bosma H](#), [Schaufeli W](#). Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies. Social Science Medicine 2005 Mar; 60(5):1117-31

Emotional Labor

- Sociologist Arlie Hochschild developed the concept of emotional labor (1983) to describe the “management of human feeling” in human service-oriented work such as flight attendants.



Measuring Emotional Labor

- Emotional Demands (Job-focused emotional labor):
 - Frequency, duration, variety and intensity
 - “My work is emotionally demanding”
 - “I spend X number of minutes/hours during my work day dealing with emotional situations on the job”
- Employee-focused emotional labor:
 - Surface Acting: *“I put on an appearance in order to express the right emotions I need to display for my job.”*
 - Deep Acting: *“I make an effort to actually feel the emotions I need to display toward the public/victims.”*

Emotional Labor and Burnout

(Brotheridge & Grandey 2002)

- Job-focused emotional labor (e.g. emotional demands) not associated with emotional exhaustion or depersonalization, but were related to high personal accomplishment.
- Employee-focused emotional labor (e.g. the measurement of display rules to hide negative emotions or display positive emotions) was significantly related to emotional exhaustion and depersonalization.

IV. Contextual factors

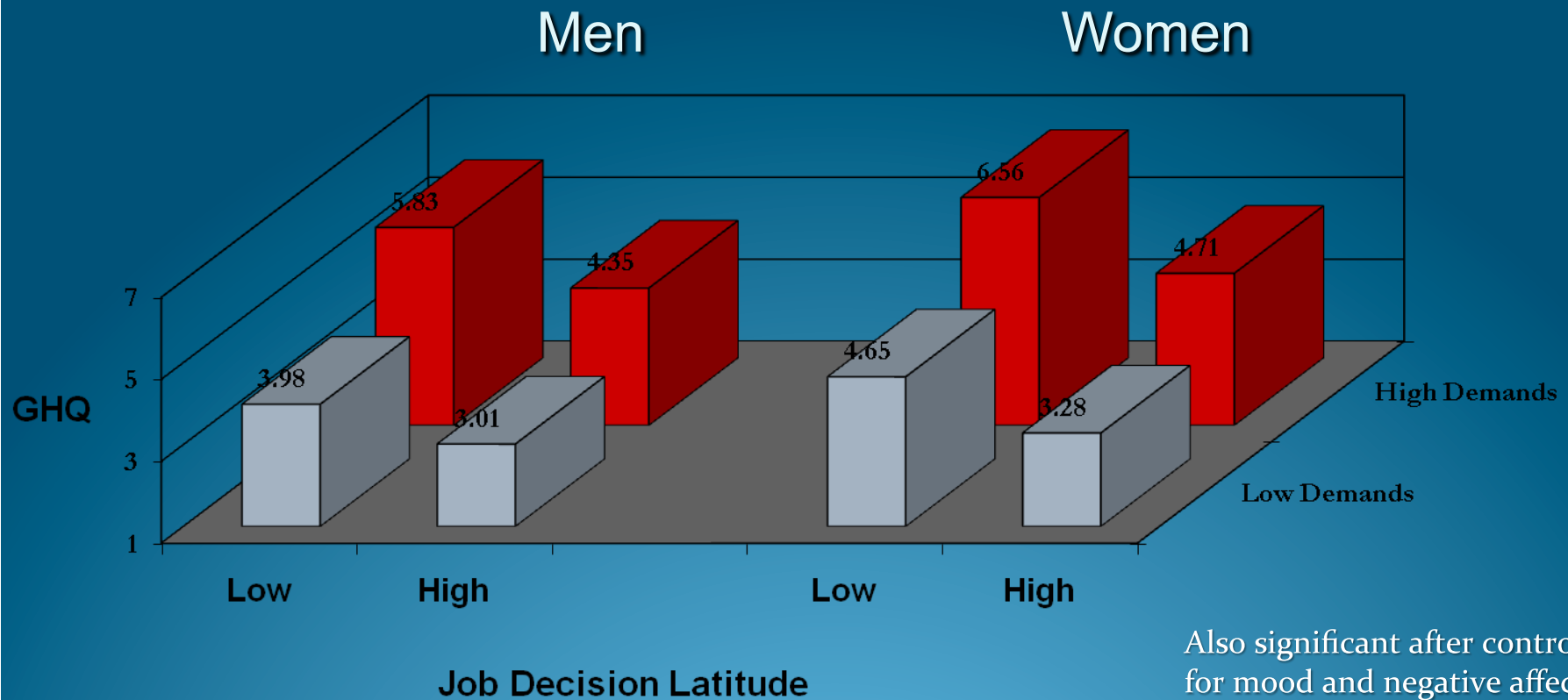
Gender

SES

Coping

Psychiatric disorder (30-item GHQ) among 10,314 British civil servants

(Adjusted for age, employment grade)



Also significant after controlling for mood and negative affectivity

Stansfield SA, North FM, White I, Marmot MG. *J Epidemiol Commun Health* 1995;49:48-53

Gender and the Workplace Stressors

Why do women with job strain appear to experience higher risk of psychiatric disorder in these Whitehall study results?

(1) Josephson et al., 1999; Karasek & Theorell, 1990; Matthews, Hertzman, Ostry, & Power, 1998; Nordander et al., 1999; Vermeulen & Mustard, 2000.

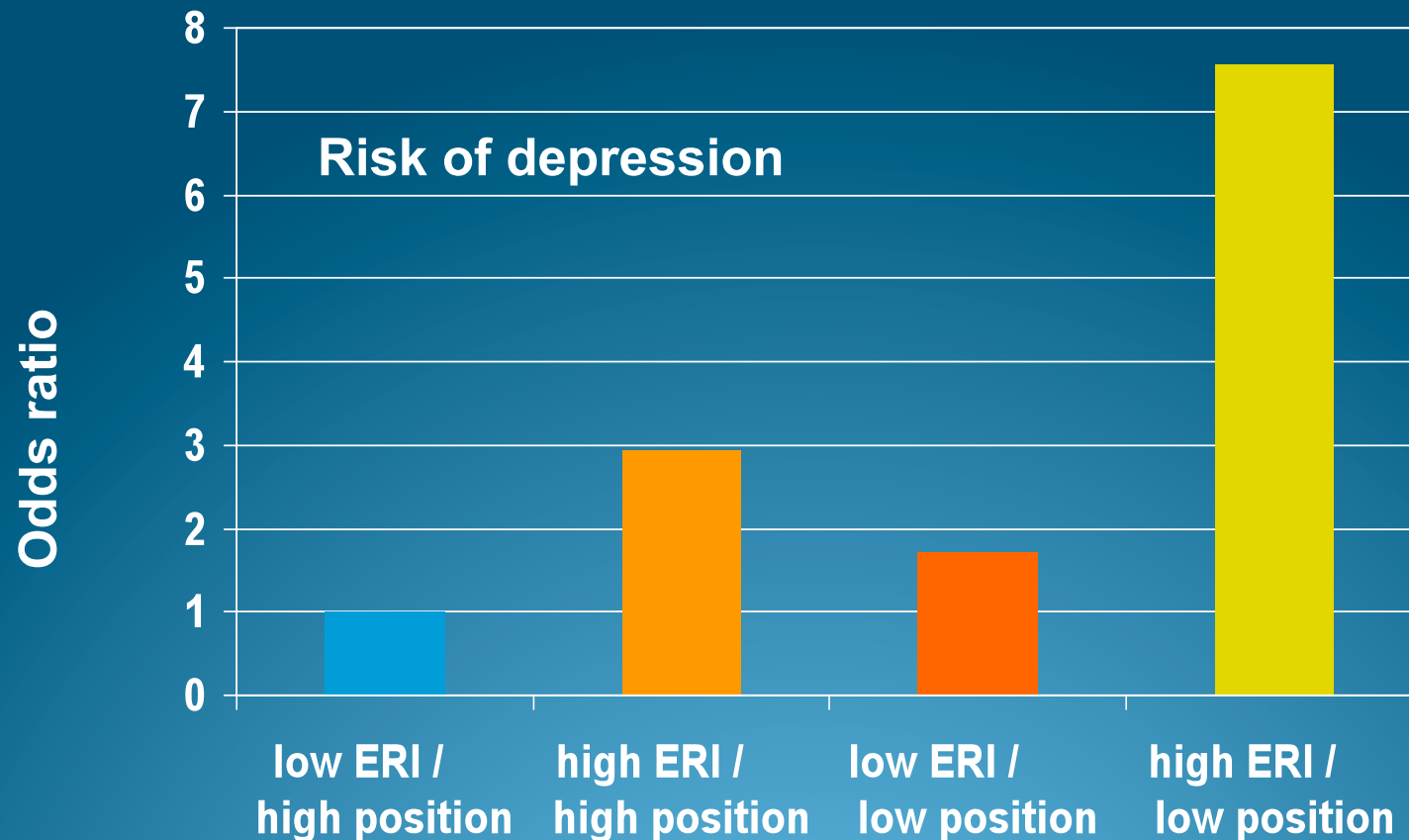
(2) Klonoff, Landrine & Campbell, 2000; Landrine, Klonoff, Gibbs, Manning, & Lund, 1995; Swim et al., 2001, Barling et al, 1996; Lenhart, 1996; Parker & Griffin, 2002

Gender and Work Stressors

- Occupational sex segregation
 - “men’s jobs” and “women’s jobs” - jobs in which women predominate generally have lower decision latitude, on average, than men’s jobs (1) – but this is possibly controlled for by “civil servant” study – mainly white collar workers, AND employment grade?
- Discrimination and harassment
 - negative sex stereotyping, isolation, and sexual objectification – and sexual harassment is associated with depression, anxiety, somatization and low self esteem
- Work-Family Spillover
 - women still do a majority of child care, elder care and domestic work in the home – “the second shift”...

Effort-reward imbalance (ERI), occupational position and depression

(HNR Study; baseline; N=1811 men and women aged 45-65)



N. Wege, N. Dragano, J. Siegrist (2007), JECH (in press).

“Maladaptive” coping strategies

- While many coping strategies may help to buffer the effect of stress, some coping strategies may result in greater risk of chronic illness, such as:
 - Smoking
 - Alcohol consumption
 - Drug abuse
 - Over-eating
- Evidence is building that suggests a strong relationship between exposure to work stress and adverse health behaviors.

Job Strain and Adverse Health Behaviors (Kouvonen et al 2007)

- Objective: To explore the association between job strain and the co-occurrence of adverse health behaviors; smoking, heavy drinking, obesity, and physical inactivity.
- Methods: The authors studied cross-sectional data of 34,058 female and 8154 male public sector employees in Finland.
- Results: High job strain and passive jobs were associated with 1.3 to 1.4 times higher odds of having ≥ 3 (vs 0) adverse health behaviors.

Kouvonen et al. Job Strain and Adverse Health Behaviors: The Finnish Public Sector Study. JOEM 49(1):68-74, January 2007.

V. Research Limitations

- Cross-sectional studies of work and mental health/illness– can't rule out prior risk of mental illness. Longitudinal studies needed to assess effects of work organization on mental health
- Netterstrom et al (SJWEH, 2010)
 - Danish civil servants (n=685)
 - Two year follow-up
 - “Natural experiment” – major county/municipality restructuring
 - Measured incident depression using Major Depression Inventory (excluded those with MDI >19 at baseline)
 - Findings?
 - Found no sig differences in Incidence of Major Depression between THREE GROUPS – Merger, New Job, No Change groups

Netterstrom et al (2010)

Limitations

- Selection bias – only half of the population responded to both baseline and follow-up questionnaires (those who were depressed or left workforce might have been left out at either time point)
- At baseline, level of depressive symptoms was already elevated (higher than national average 10% vs. 8%) – ceiling effect?
- Lack of power – women's OR was 1.5 and 2.0, but not sig.
- Other?
 - No measurement of psychosocial stressors – mergers and/or a new job may not have resulted in higher strain or ERI
 - All workers had job security (other studies show uncertainty and job insecurity overtime are related to increased risk of depression Rugulies et al JECH, 2010, Ferrie et al, 2002 (Whitehall),).



END

Table 1

Number of studies included in the review sorted by hypothesis (i.e., ERI, OVC, and interaction) and outcome category

Outcome category	Total (<i>n</i> = 45)	ERI hypothesis (effort × reward)			OVC hypothesis	Interaction hypothesis (effort × reward × OVC)
		All ^a	Extrinsic effort ^b	Remaining ^c		
<i>Physical health outcomes</i>	25*					
CVD incidence	8	8	5	3	5	1
CVD symptoms and risk factors	17	15	13	2	11	3
Other outcomes	1	1	1	0	1	1
<i>Behavioral outcomes</i>	3					
Behavioral outcomes	3	3	3	0	1	0
<i>Psychological well-being</i>	19*					
(Psycho)somatic health symptoms	16	15	13	3	7	3
Job-related well-being	7	6	6	0	2	4

*Note that some studies include several types of outcomes and therefore are counted twice, i.e., the sum of studies in the sub-categories exceeds the number of studies in the main outcome categories (and in a similar way this means that counting the total amount of studies exceeds 45).

^aAll studies that tested the ERI hypothesis (i.e., effort × reward).

^bOnly studies that explicitly tested the ERI hypothesis with *extrinsic* effort and rewards (i.e., extrinsic effort × reward).

^cRemaining studies that tested ERI hypothesis at least with *intrinsic* (and possibly extrinsic) efforts and rewards (i.e., intrinsic/extrinsic effort × reward).