

Arbejde og stress. Nye udviklingstendenser i en globaliseret økonomi

Den 2. stressforskningskonference

7-11-2005

SIF

Tage Søndergård Kristensen

The new challenges

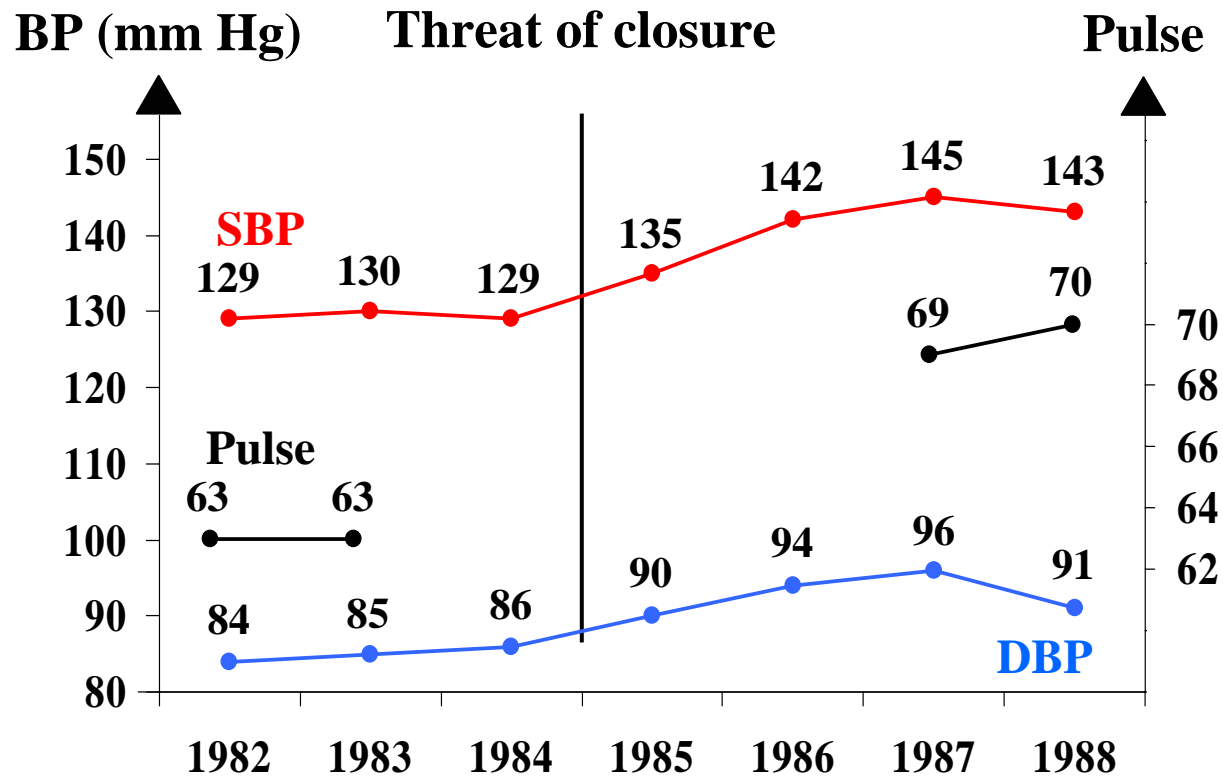
**Outsourcing, downsizing, privatization,
precarious work, job insecurity**

ami

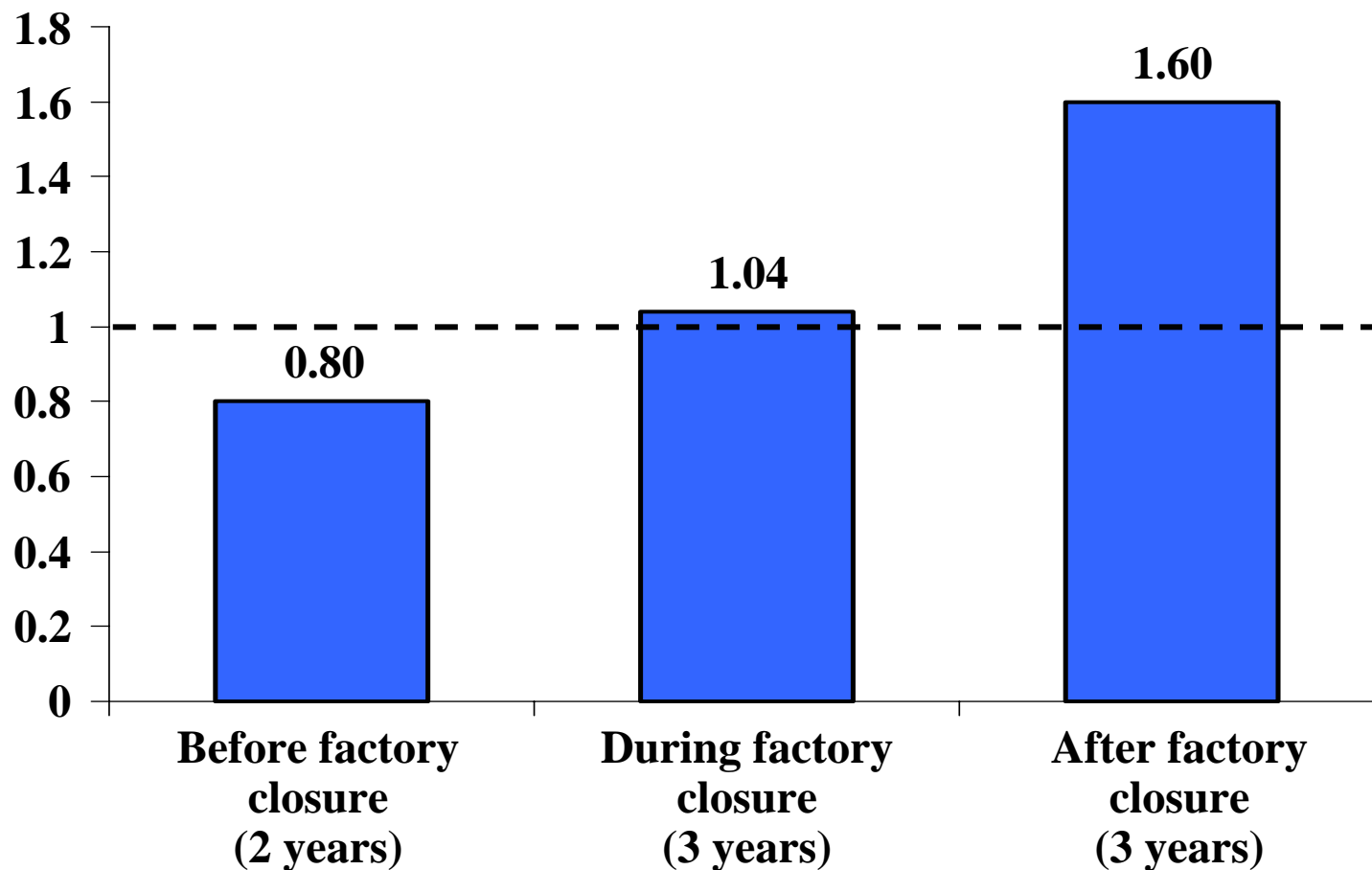
 *arbejdsmiljøinstituttet*

Blood pressure and pulse among Norwegian metal workers

(N = approx. 180)



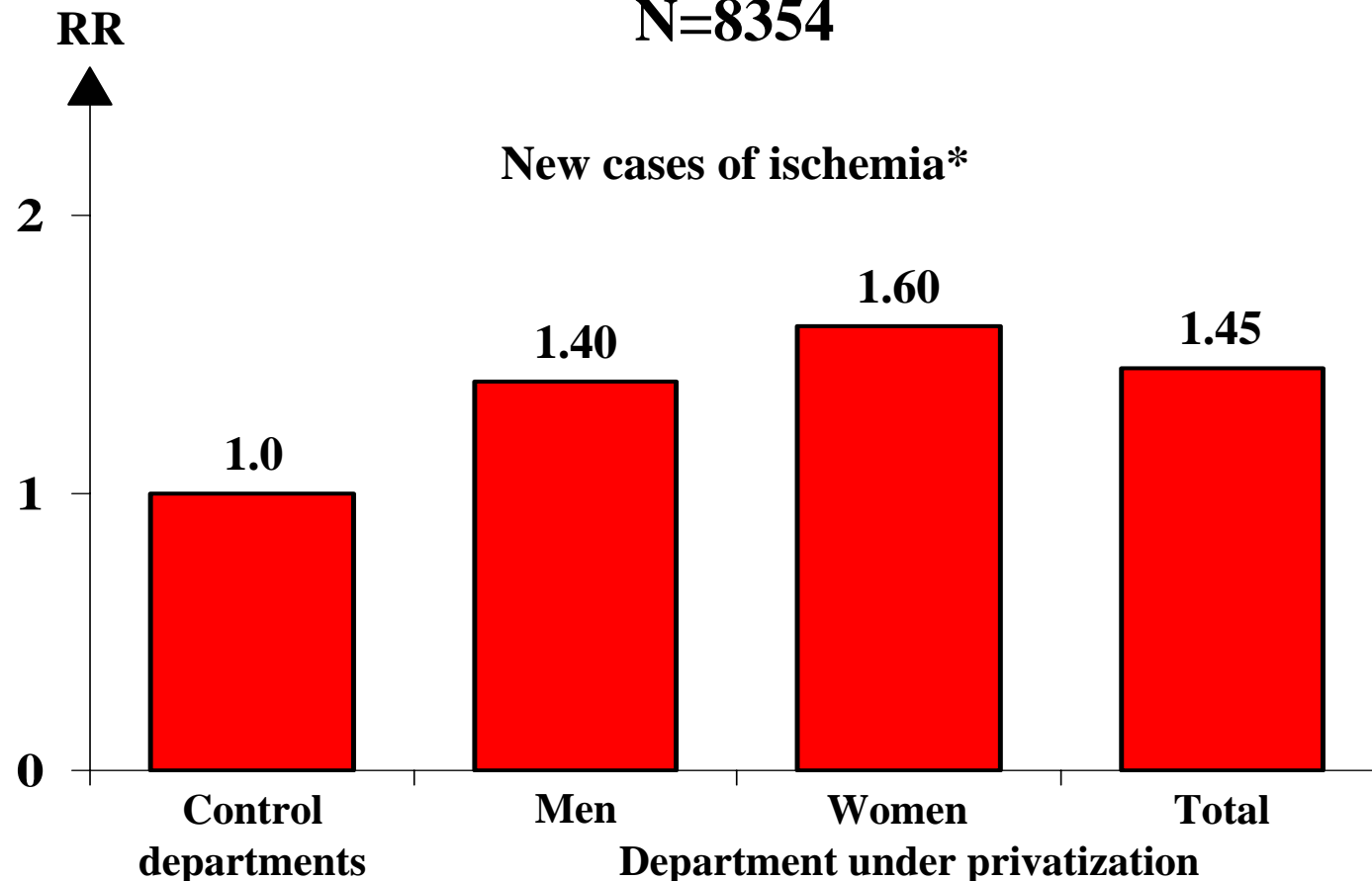
Hospital admissions for CVD in a group of unemployed men compared with a control group



Threats to employment security among white-collar workers in Whitehall

A five-year follow-up study

N=8354

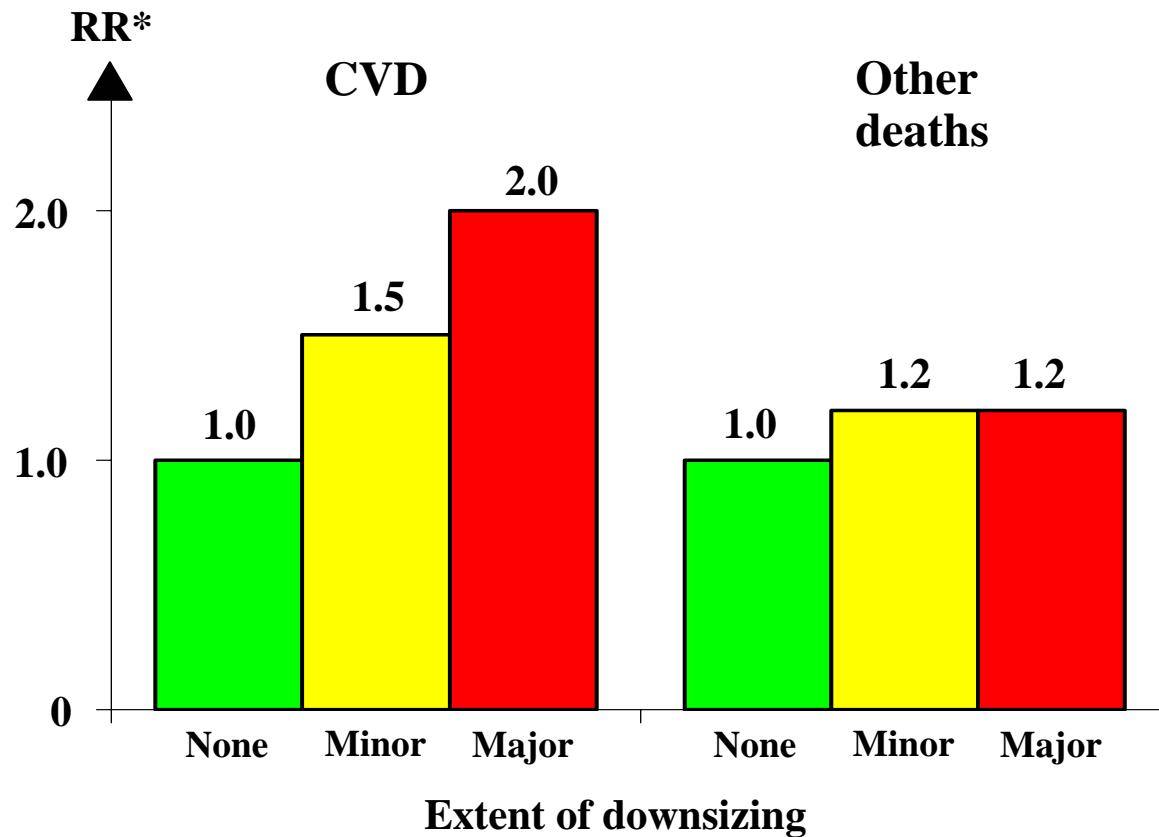


*ECG or angina

Ferrie et al. *AJPH* 1998;88:1030-1036.

Organisational downsizing and mortality

A 7.5 years' follow-up study of 22.430 public employees
who kept their jobs.

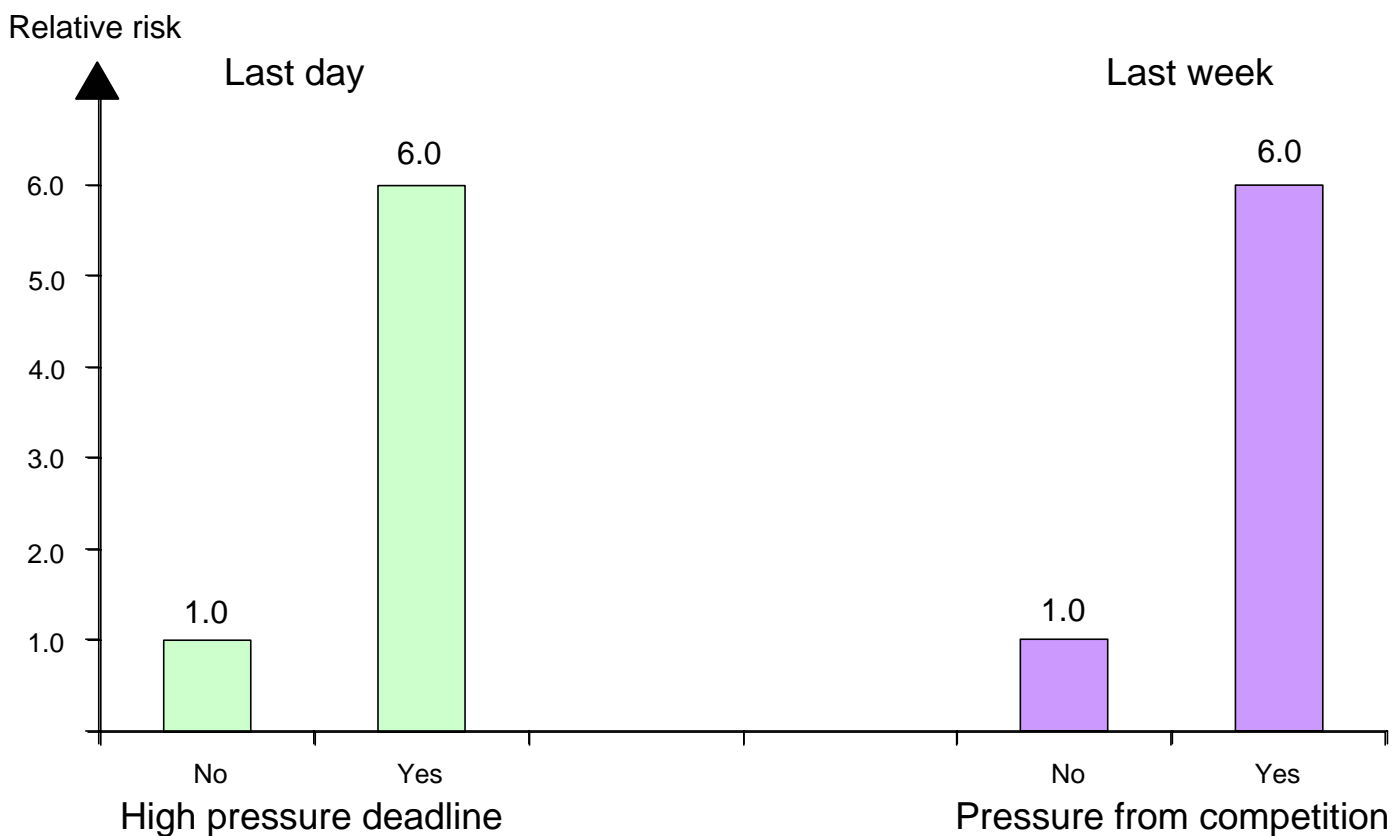


*Controlled for age, gender, SES, occupation

Vahtera et al. BMJ 2004;328:555-558.


Impact of work-related events immediately before myocardial infarction

A case-crossover study of 660 cases




A simple model

**Job insecurity, downsizing,
outsourcing, privatization**



**Loss of control, loss of social support,
loss of meaning, loss of predictability,
loss of rewards**



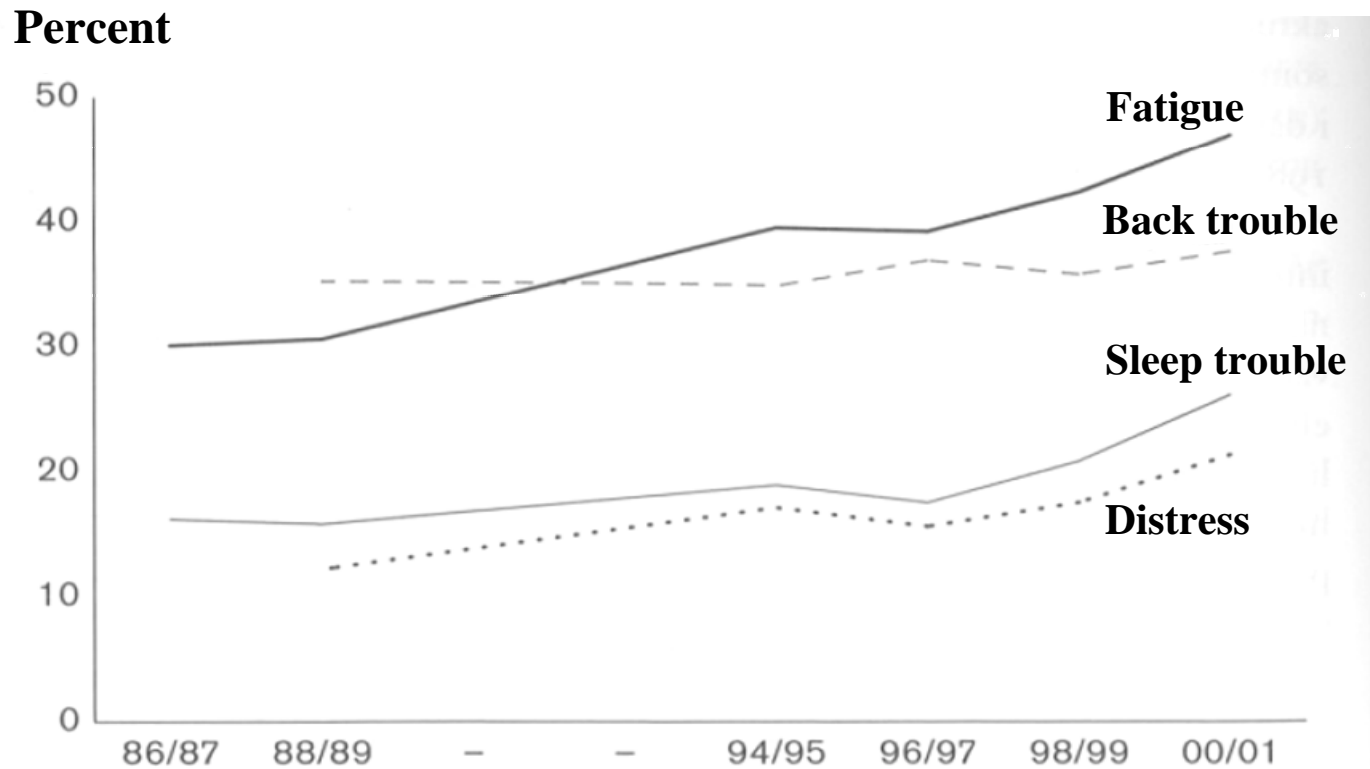
**Stress, uncertainty, hopelessness,
low self esteem**

The new fatigue

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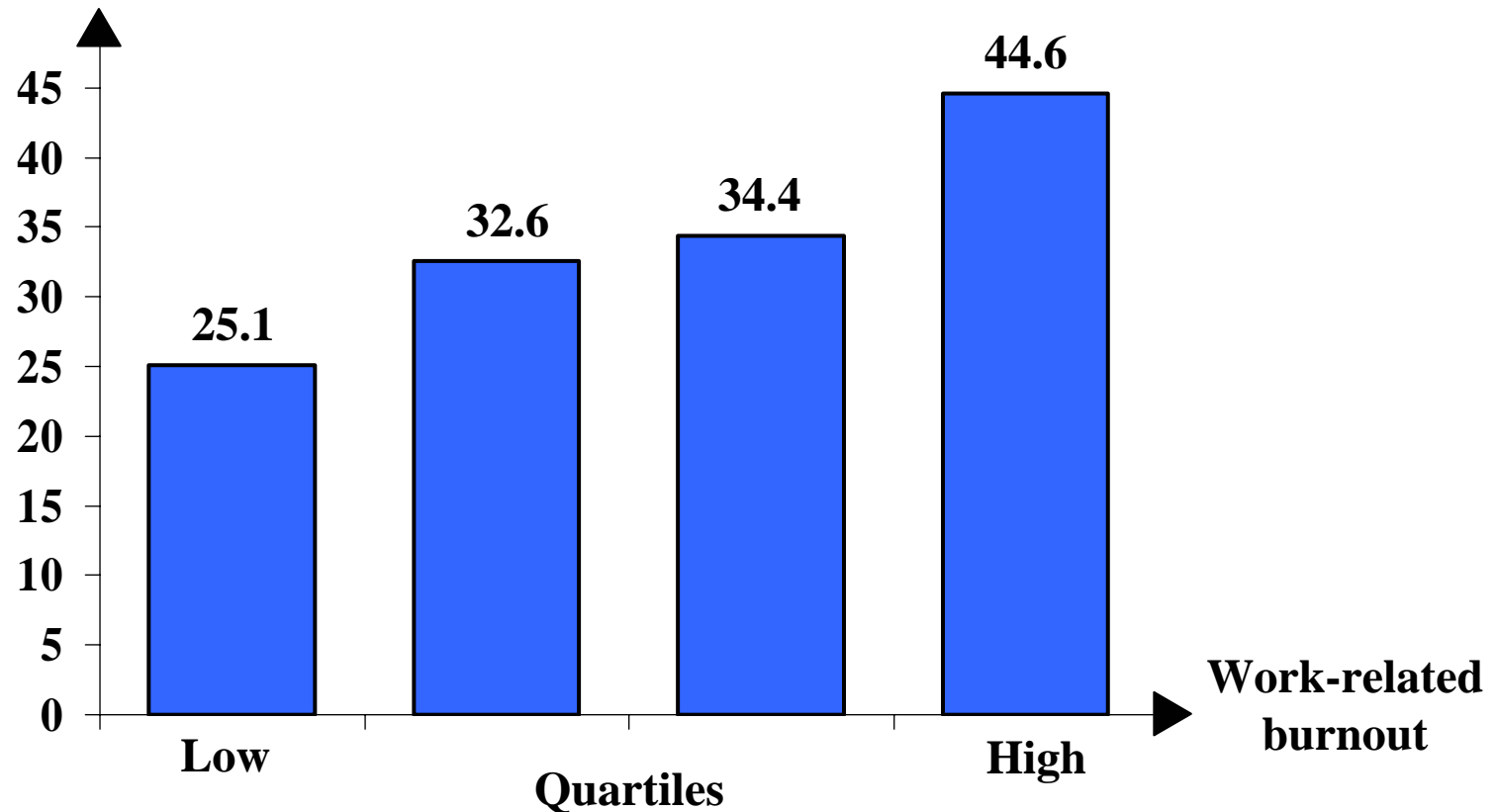
The development of four different symptoms in the adult Swedish population 1986 - 2001



Work-related burnout and sleeping problems two years later

Results from the PUMA baseline and 2 years' follow-up

Karolinska sleep questionnaire (scale)

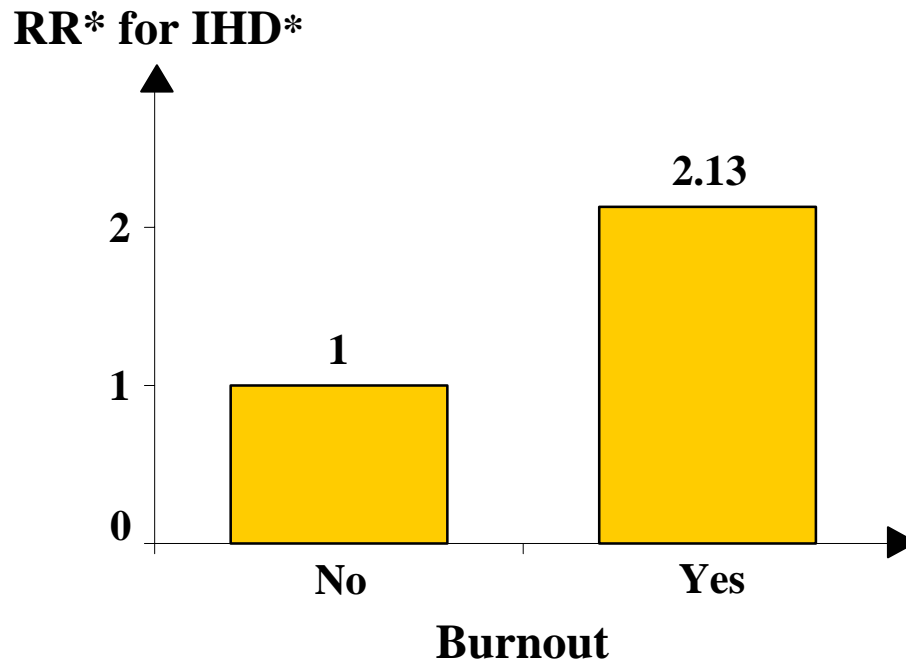


N = 1014; Data from NIOH, Denmark

Burnout as predictor of ischaemic heart diseases

A 4.2 years' follow-up study of 3,877 Dutch male employees from Rotterdam

”Have you ever been burned out?”	No	74%
	Yes	26%

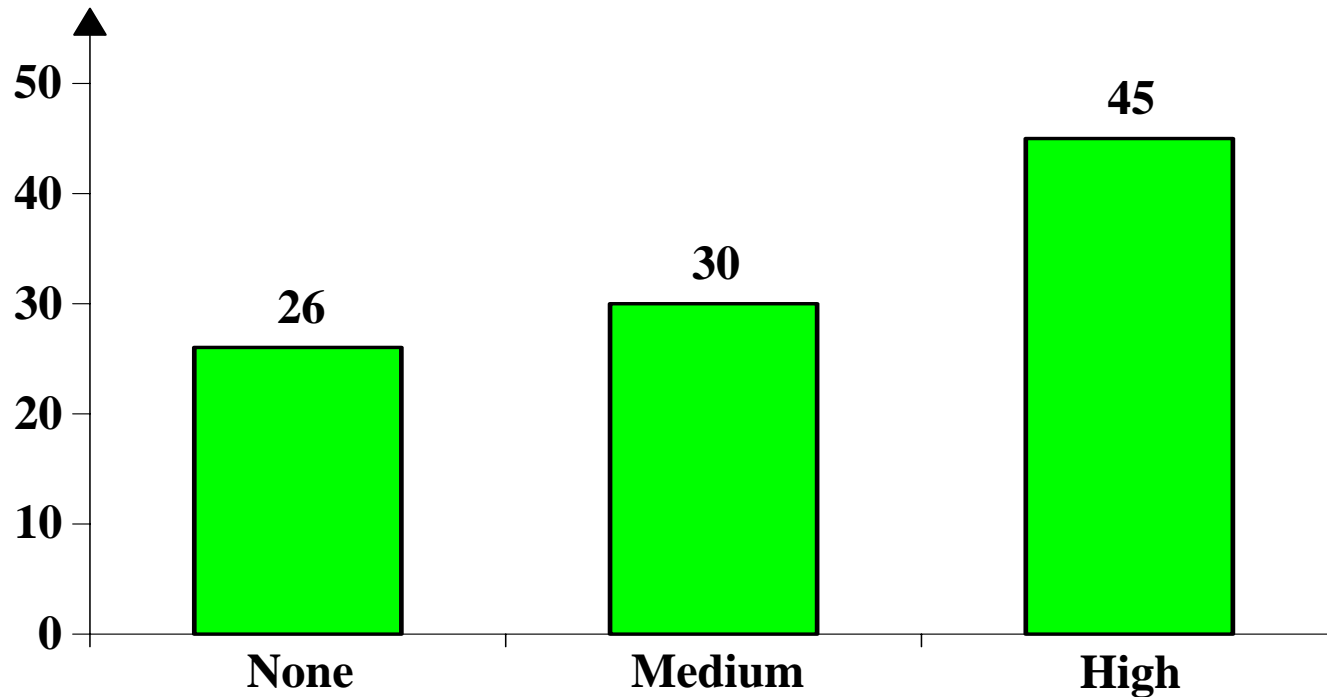


* Controlled for age, BP, smoking, cholesterol. 59 cases.

Exhaustion and CHD

A 9.5 years' follow-up study of 3,365 Dutch men.

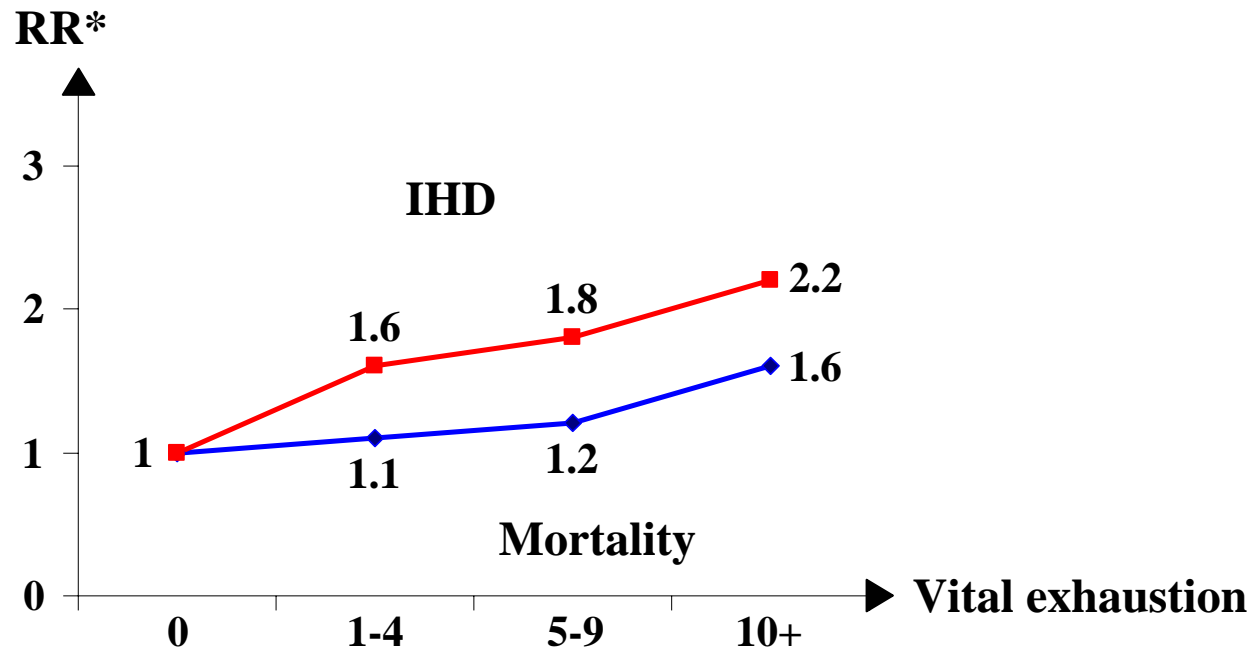
Cases per 1000



Degree of exhaustion by the end of the working day.

Vital exhaustion, IHD and death

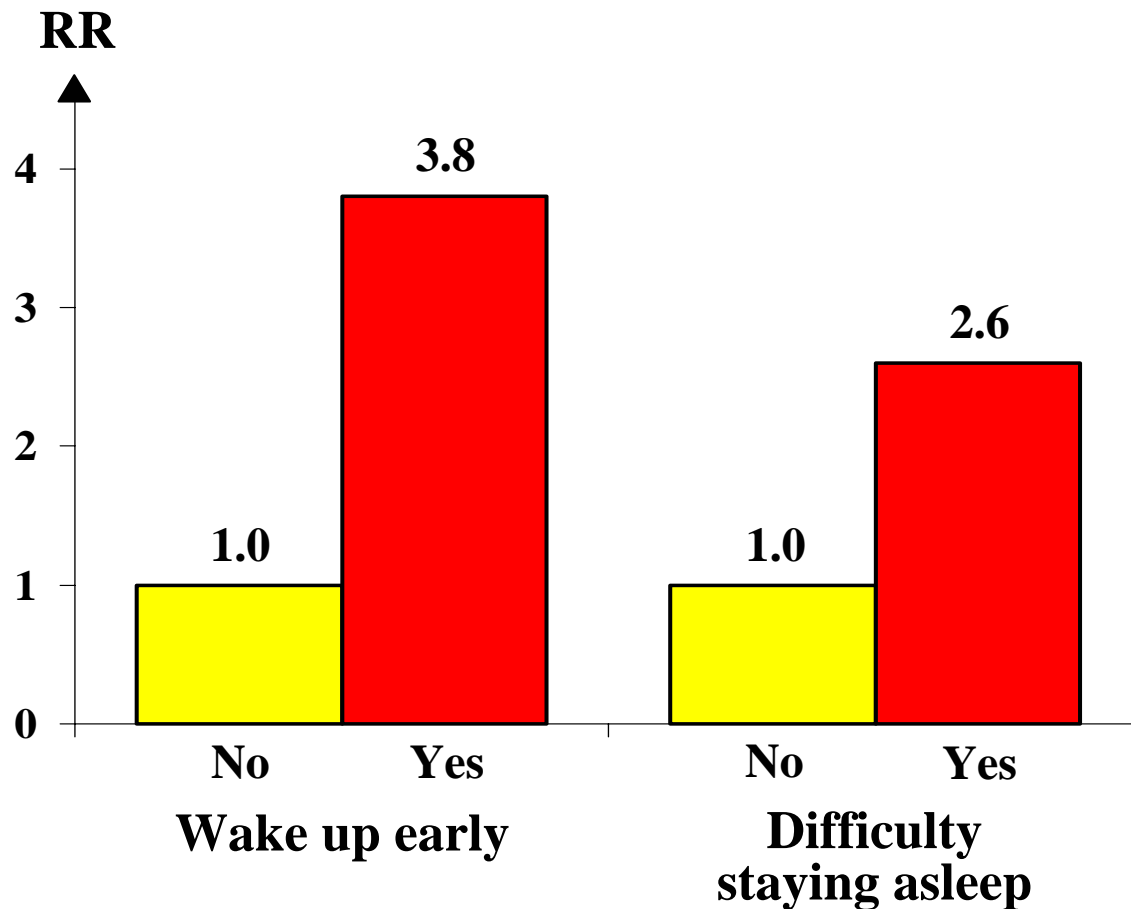
6 years of follow-up of 9,563 adults from Copenhagen



* Adjusted for 13 biological, behavioural and social factors

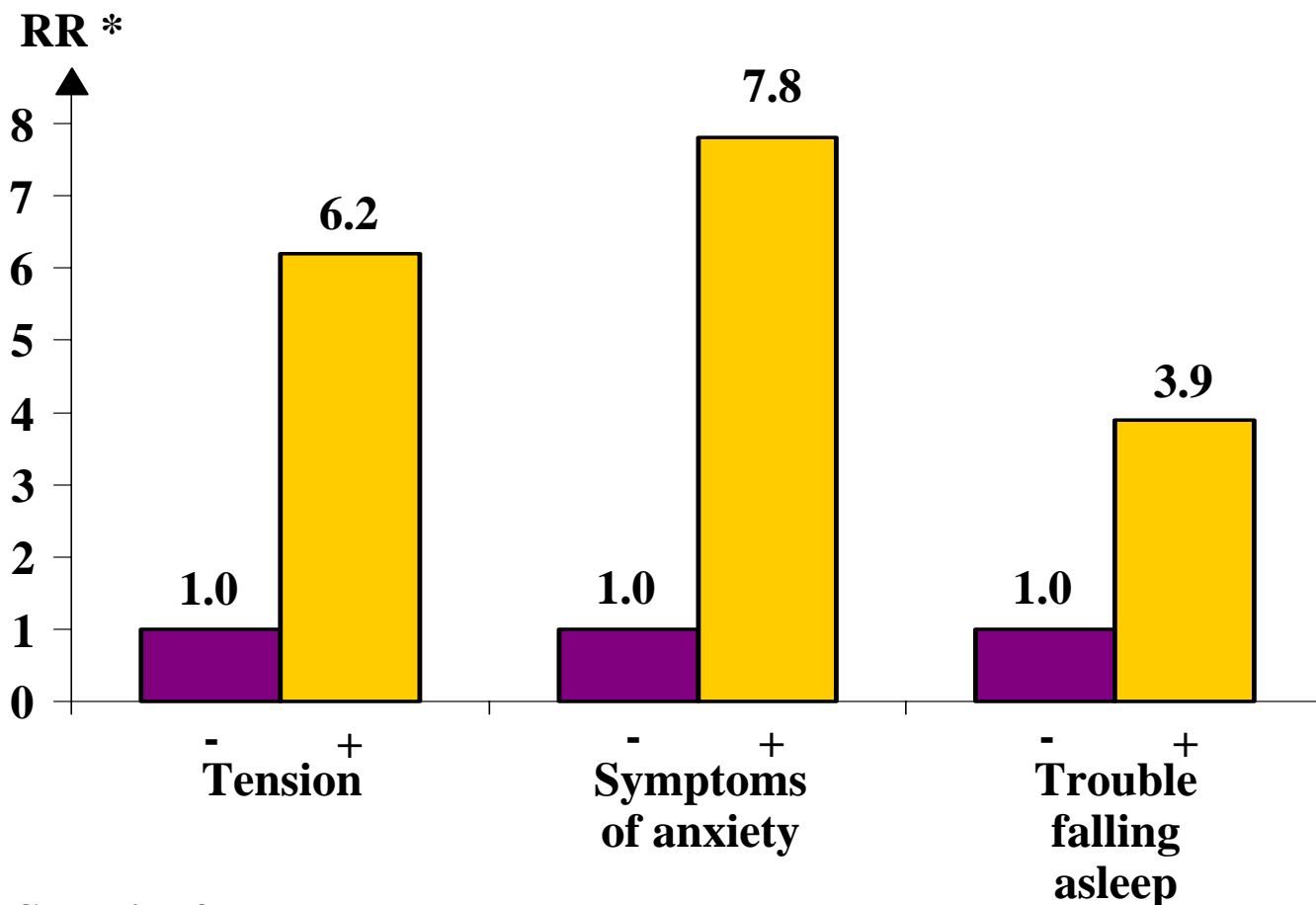
Sleep quality and myocardial infarction

3 years of follow-up of 416 middle-aged German blue-collar workers



Psychological risk factors for CHD among homemakers from Framingham

A 20-year follow-up study of 362 women

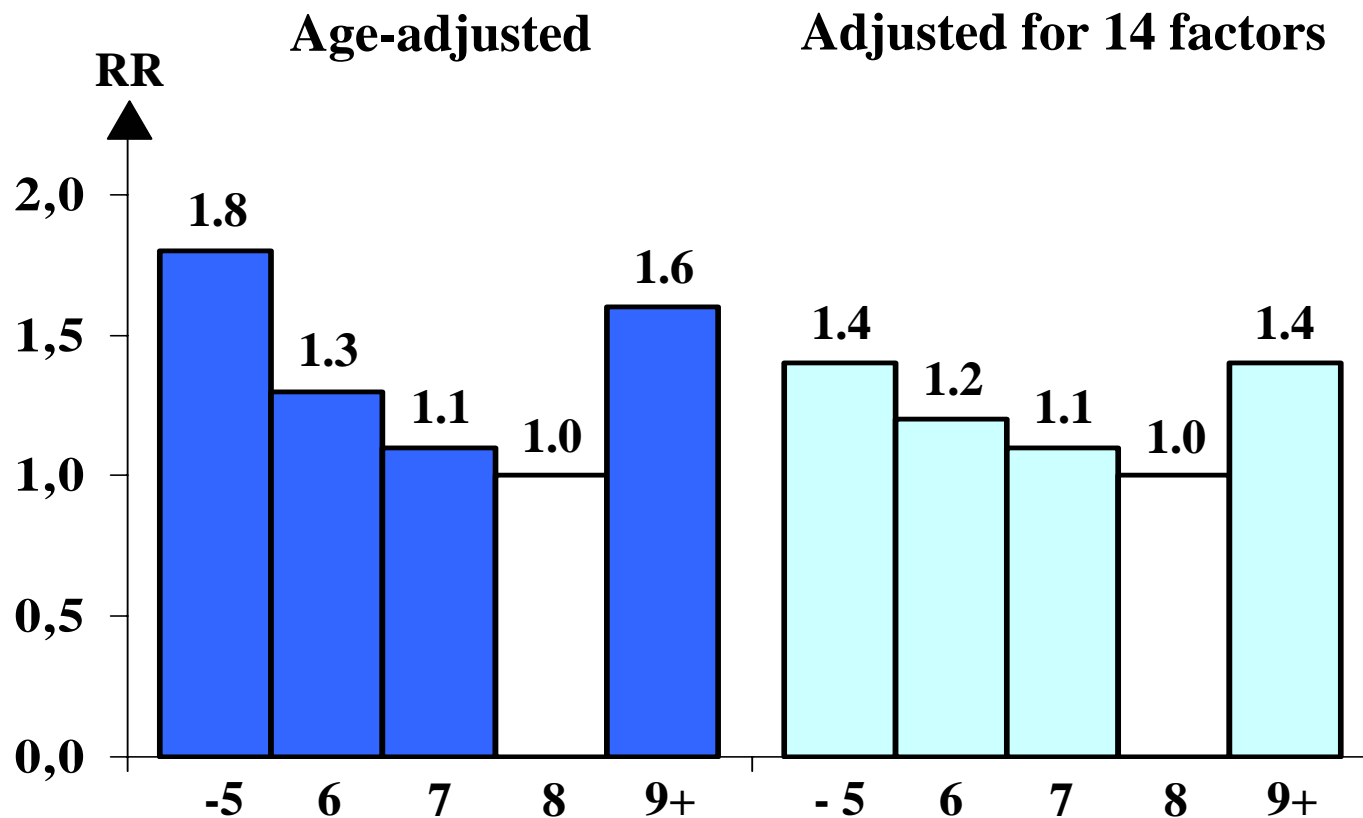


*Adjusted for CVD risk factors.

Eaker et al. Am J Epidemiol 1992;135:854-864.

Sleep and risk of IHD

A study of 71,617 American nurses followed for 10 years

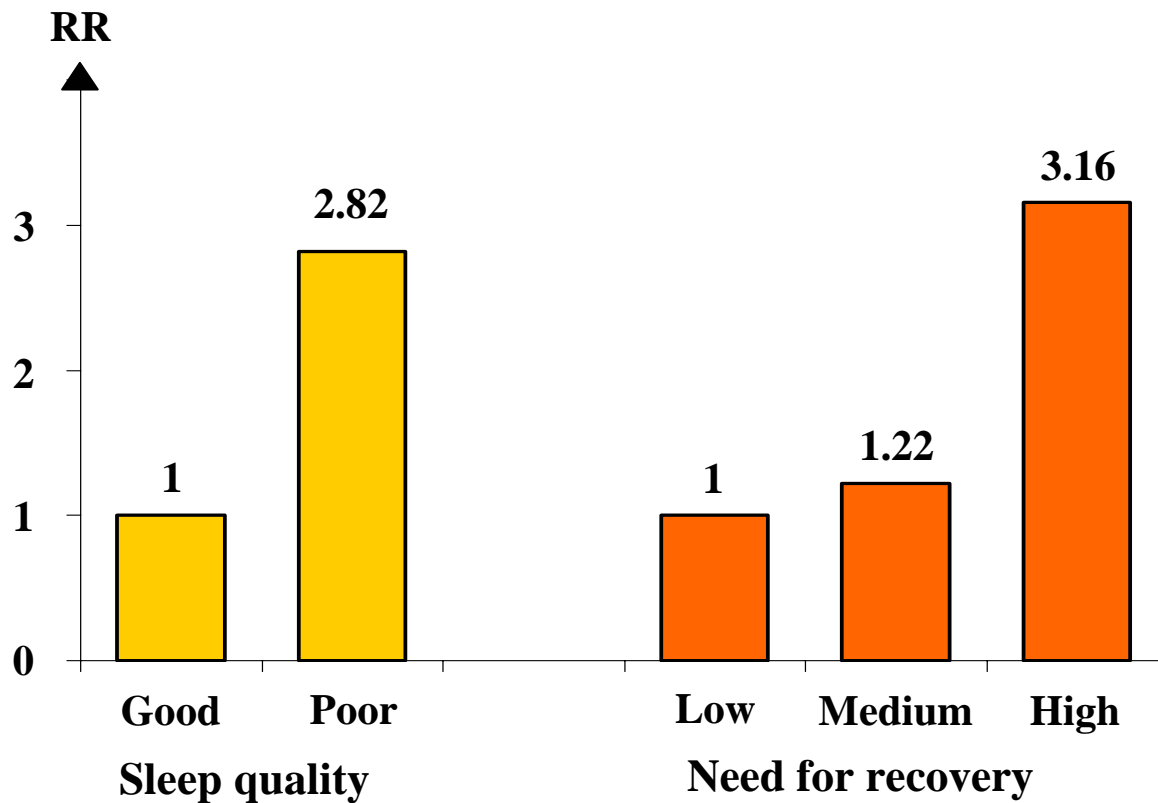


The Nurses' Health Study

Ayas et al. Arch Intern Med 2003;163:205-9

CVD, sleep quality and "need for recovery" after work

Results from 32 months of follow-up of the Maastricht Cohort Study on fatigue

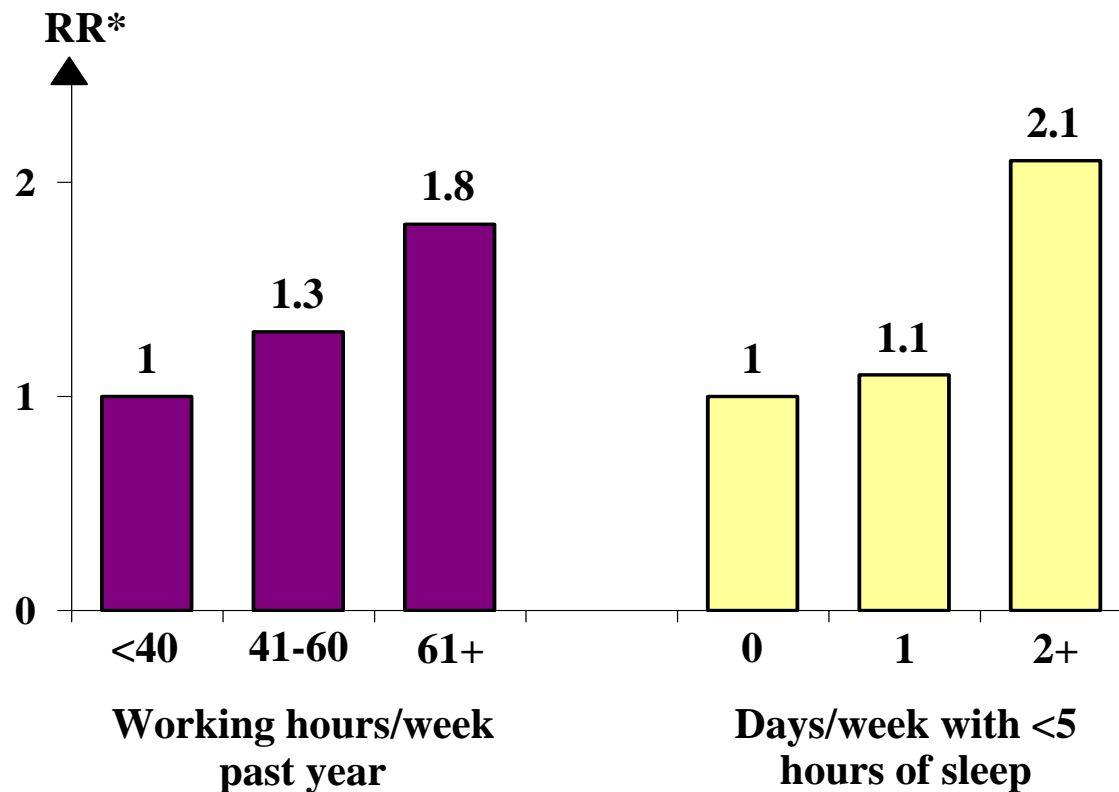


N=7,944 workers. 18-65 years. 42 cases.

Van Amelsvoort et al. *Occup Environ Med* 2003;60:83-87.

Long working hours and short sleep as risk factors for AMI

A case control study of working Japanese men 40-79 years of age
260 cases and 445 matched healthy controls



*Adjusted for smoking, alcohol, BMI, BP, DM, cholesterol, heart disease in family, job type and sedentary job

Depression and CHD

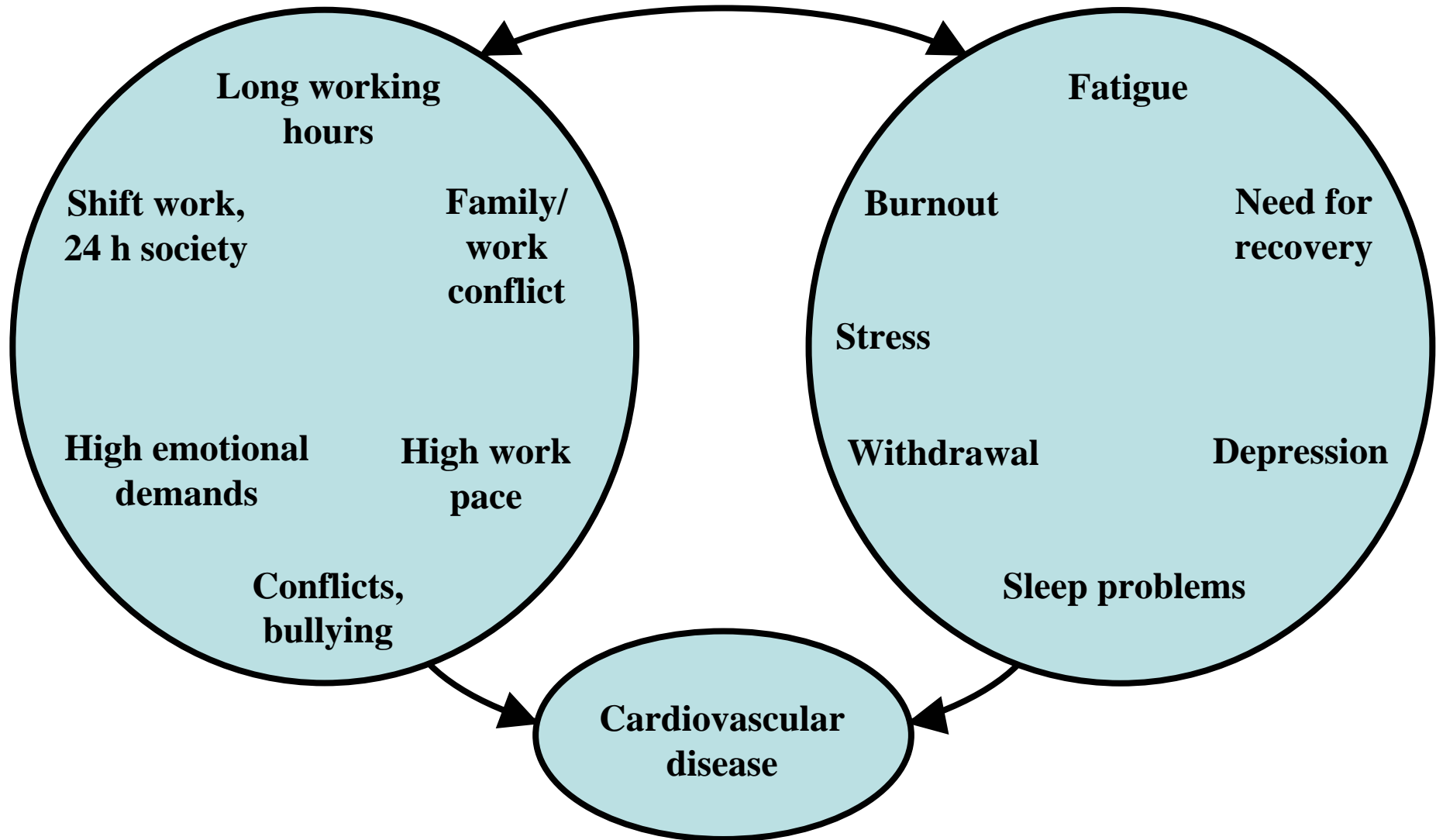
A meta-analysis

Relative risk among initially healthy subjects.

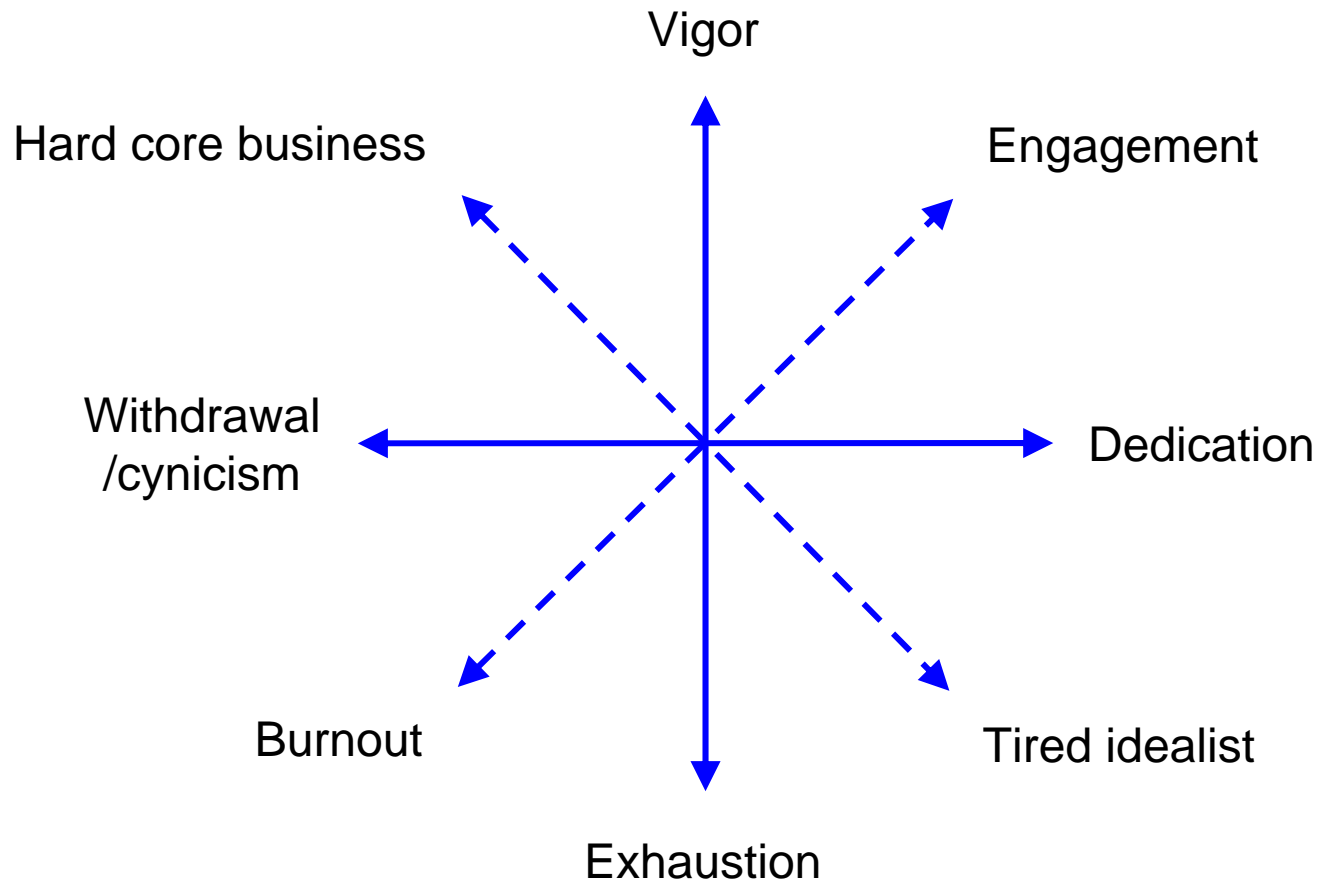
Analysis of 11 studies

	RR
Clinical depression	2.69 (1.63-4.43)
Depressive mood	1.49 (1.16-1.92)
Overall estimate	1.64 (1.29-2.08)

The new fatigue



Burnout and engagement – two sides of the same coin?



Family and private life

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Work-family (im)balance

Do you experience a conflict between work and family, so that you feel you should be "both places at the same time"?

Yes, often 7%

Yes, regularly 29%

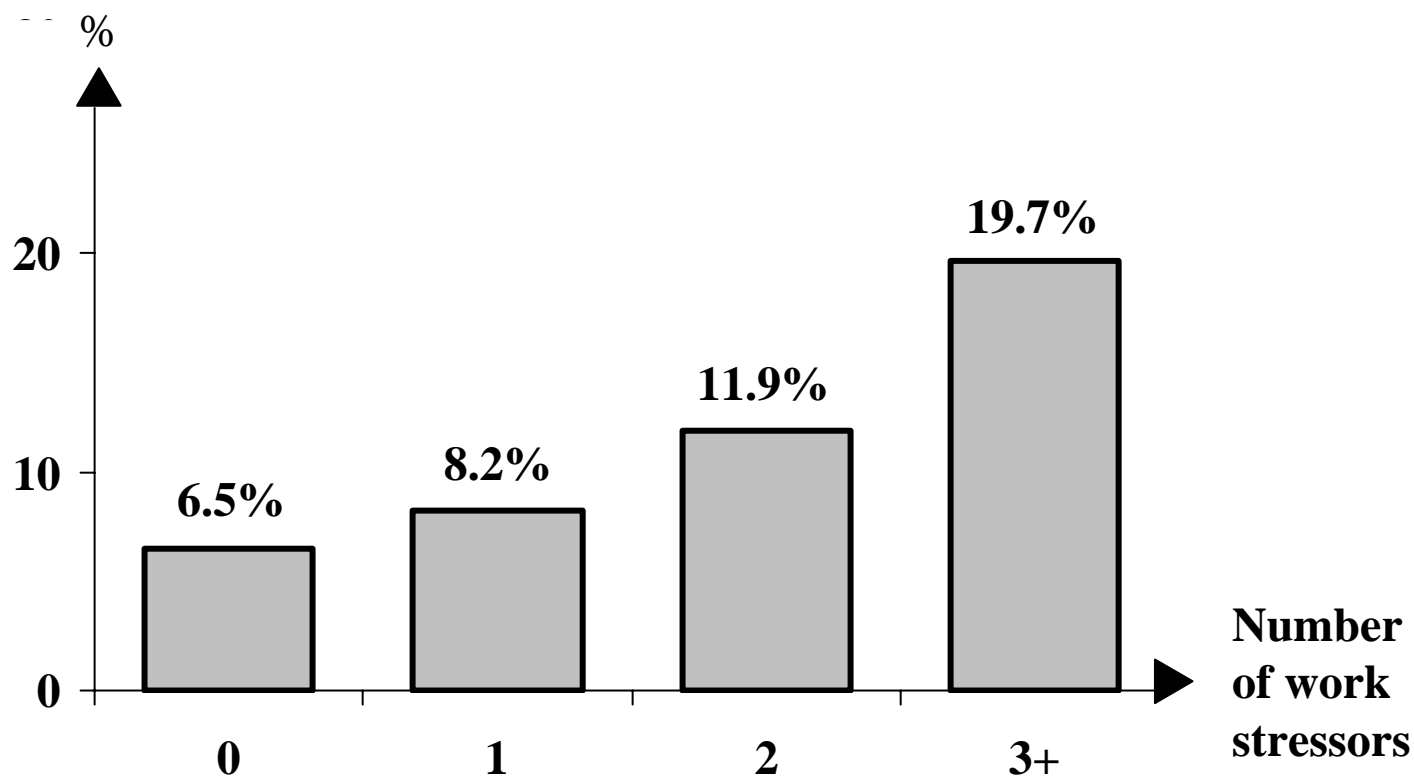
Does your work take too much of your energy so that your private life suffers?

Yes, certainly 10%

Yes, to some degree 34%

Stress at work and in the family of American men

The proportion who got a divorce during 9 years



N = 10,904 married men in the MRFIT study

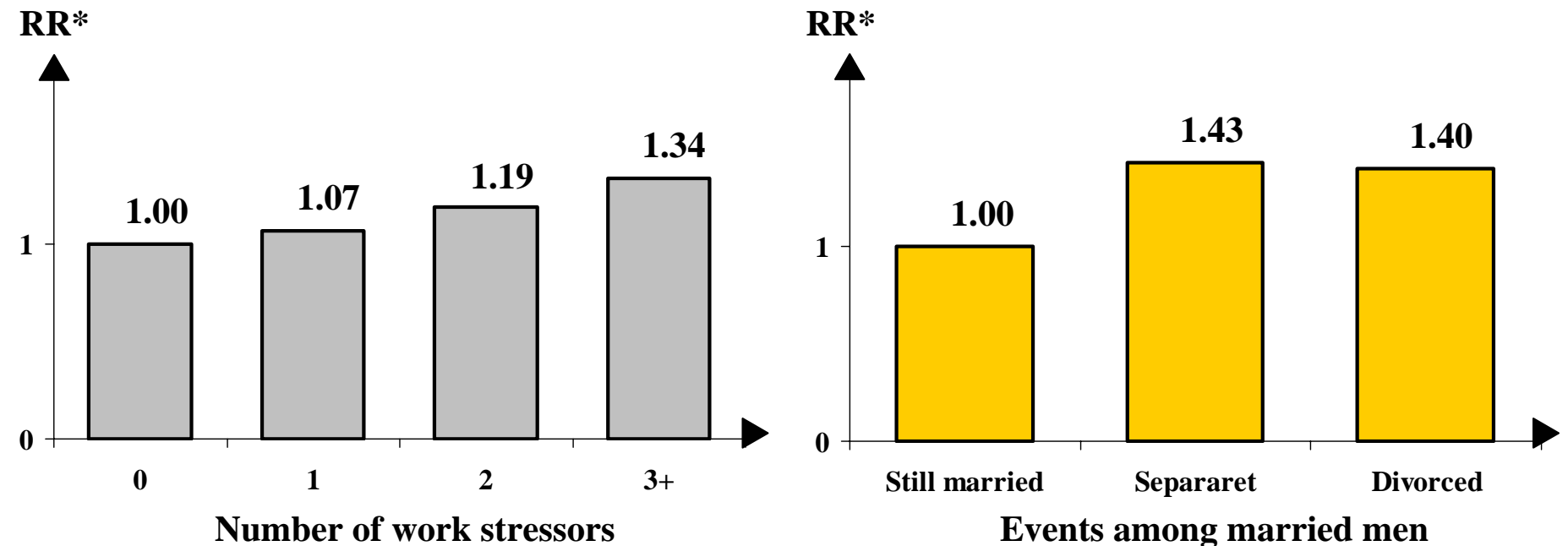
Matthews & Gump. Arch Intern Med 2002;162:309-15.

Stress and CVD mortality among American middle-aged men

9 years' follow-up of 12,336 men in the MRFIT

Work stress

Family stress

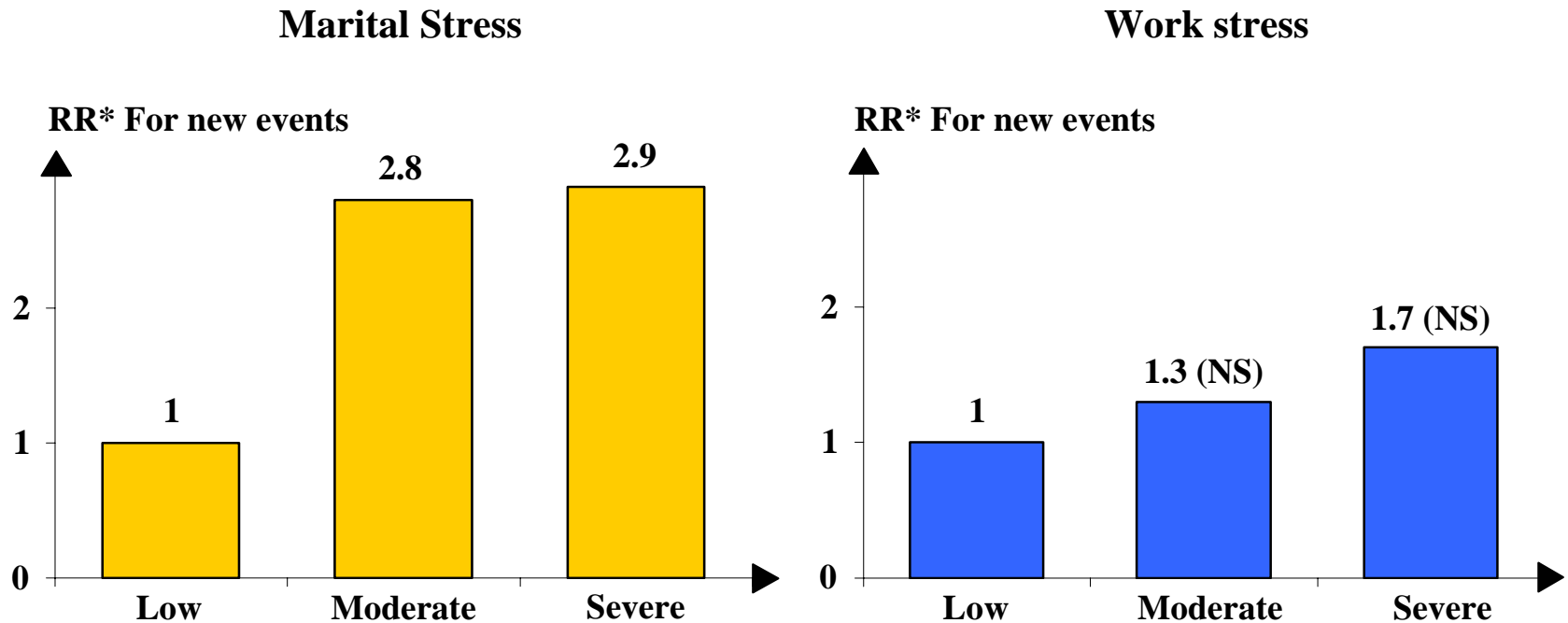


*Controlled for eight important confounders.

Matthews & Gump. Arch Intern Med 2002;162:309-15.

Is marriage worse than work? (For women)

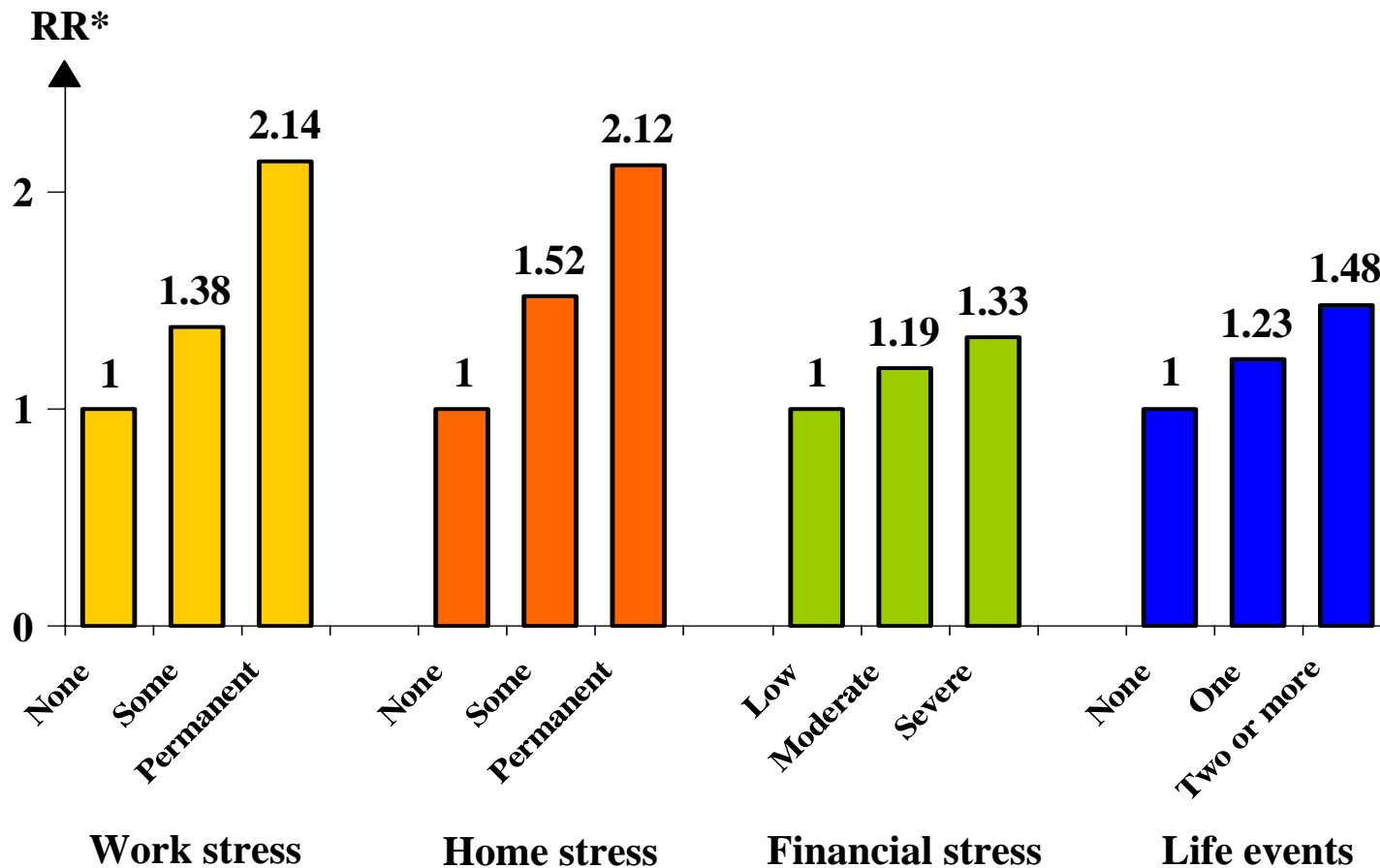
A follow-up study of 292 female heart patients in Stockholm



* Adjusted for age, diagnosis, SBP, DM, smoking, lipids and estrogen status.

Psychosocial factors and acute myocardial infarction: The INTERHEART STUDY

11,119 cases and 13,648 controls from 52 countries

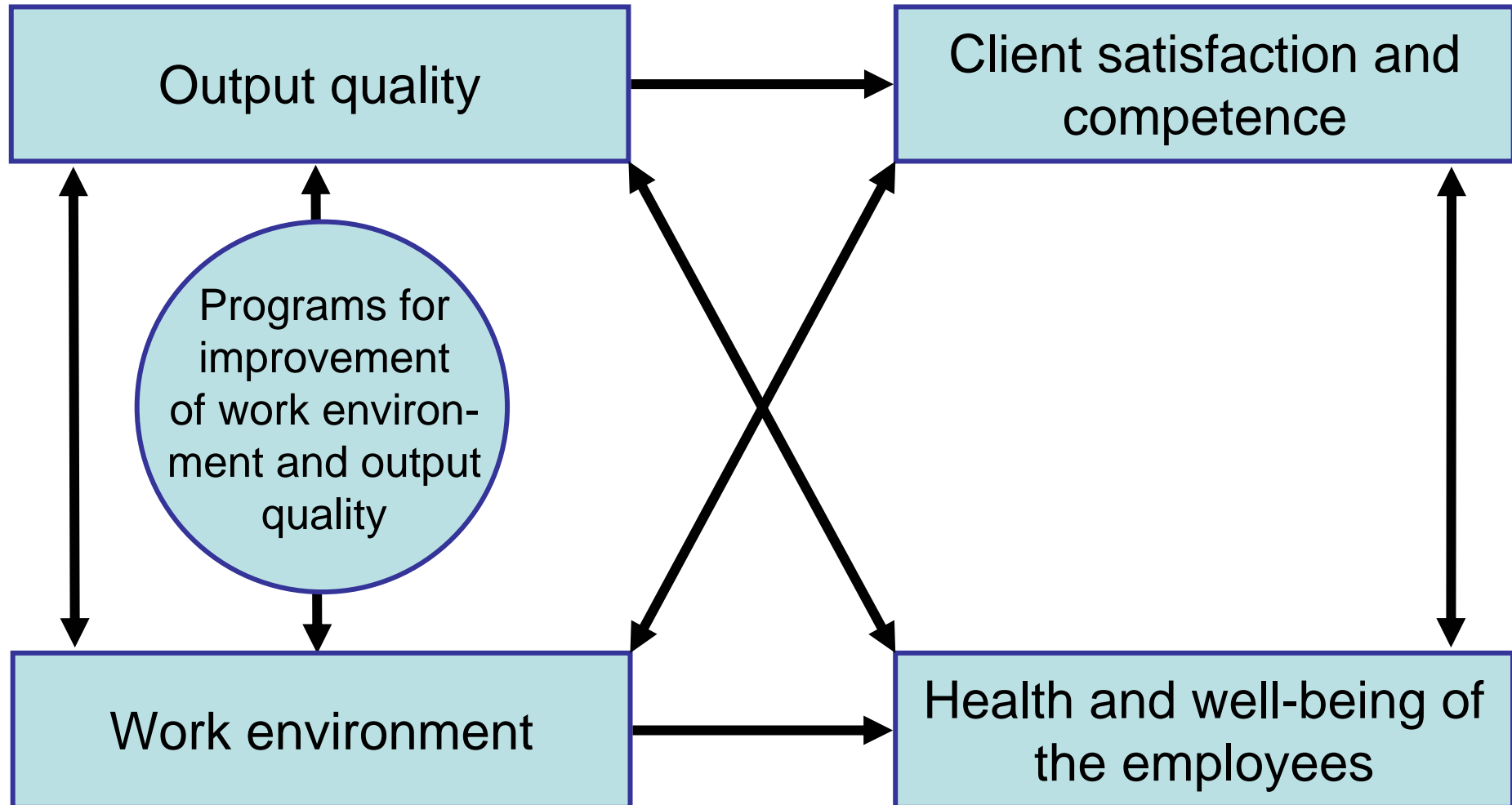


**Work and product quality –
is there an association?**

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The Sirdal model for work environment and output quality





YOU DON'T LOOK SO GOOD... SHOULD I CALL THE NURSE?

I AM THE NURSE!

PATIENTS' HEALTH LINKED TO NURSES' WORKLOAD
NURSE SHORTAGE

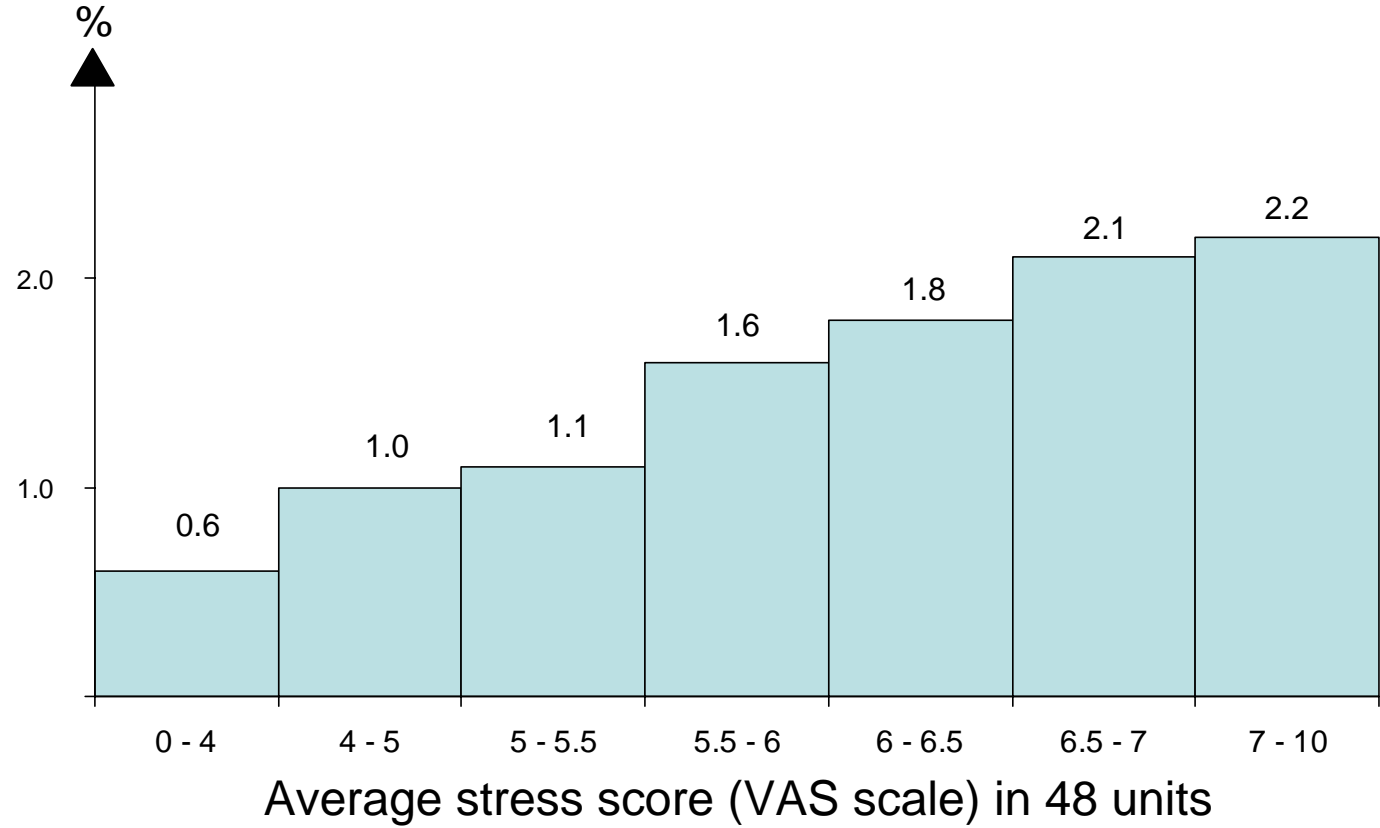
BEEP-BEEP BEEP

Joe Heller

Stress level among the nurses and patient incidents

A study of 293 nurses over 3 months

Patient incidents
(falls, medication errors, other errors)



Association between burnout level and critical incidents

A study of 678 Japanese nurses at Tokyo University Hospital

Level of burnout

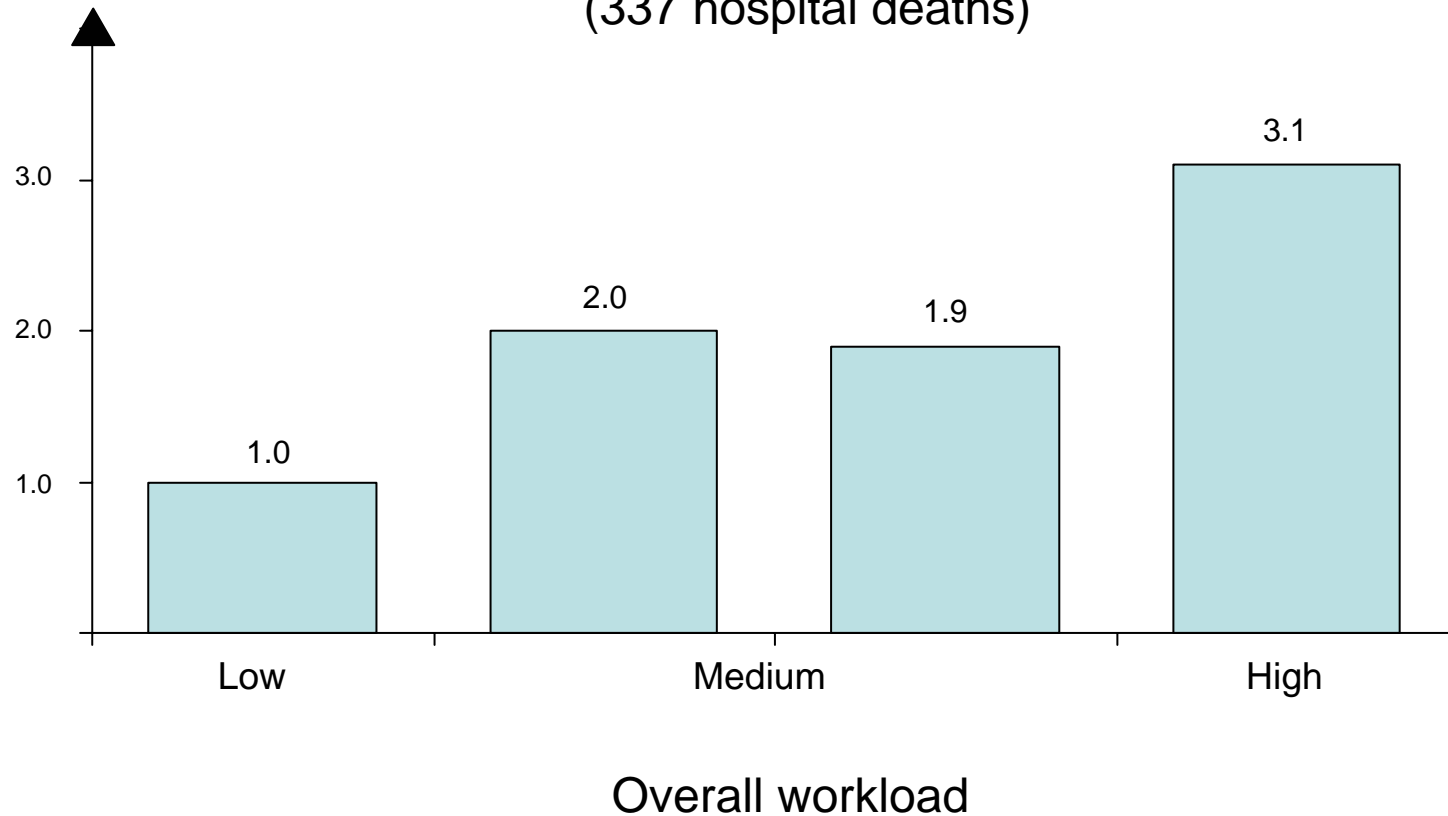
	Low 1	2	3	High 4	Total
Falling patient	29%	38%	45%	51%	41%
Mistakes related to transfusions	2%	4%	7%	9%	6%
Mistakes related to medication	41%	53%	52%	62%	53%
Mistakes related to operations/anaesthesia	9%	2%	3%	3%	4%

$P \leq 0.05$

Staff workload and hospital mortality

Relative risk for death

A 4-year study in an adult intensive care unit
(337 hospital deaths)



Patient-to-nurse ratio: Possible consequences for nurses and patients

An American study including 10,184 nurses, 232,342 patients, and 168 hospitals



* RR associated with an increase of 1 patient per nurse. Adjusted.

Errors in patient treatment before and after a stress management programme

Errors per hospital per year
Year before Year after

Control hospitals	1,64	1,59
Intervention hospitals	1,41	0,41*

22 hospitals in each group.

Matched on three criteria.

* $p < 0,01$

The effect of a stress management programme for the incidence of medical treatment errors

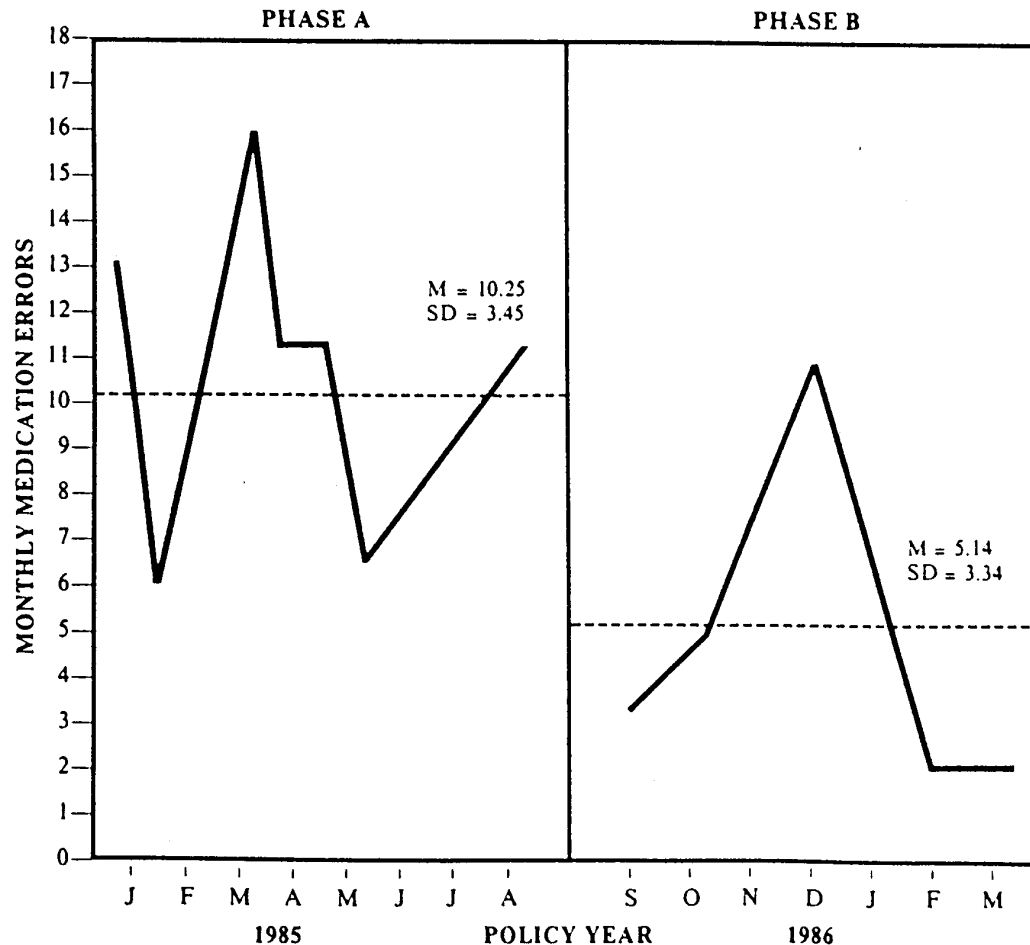
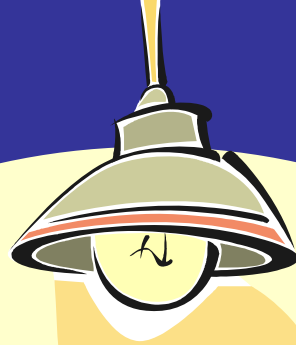


Figure 1. Impact of stress management program on monthly medication errors.

Many challenges – one solution?

- The globalized economy
 - Competitiveness of private business
 - Quality of the public services
 - The new fatigue
 - Family-work conflict
- and the "golden nuggets" of psychosocial work environment and private life: **influence, meaning, support, predictability, rewards, demands**



The End

**This presentation (and many others)
may be found at**

www.ami.dk/presentations