

SUPPLEMENTARY DATA

eText 1. Studies and participants

Details of the design and recruitment of the participants in the studies included in our meta-analyses are presented below. Participants were eligible for our meta-analyses if they were in employment and had available data on job strain.

Copenhagen Psychosocial Questionnaire version I (COPSOQ-I)

The COPSOQ-I is a prospective cohort study of a random sample of Danish residents selected from the Danish population register. The participants were aged 20-60 years of age and were in paid employment at the study baseline in 1997. A baseline questionnaire and an invitation to take part was posted to 4 000 people and 2 454 individuals agreed to participate (1). Of the 1 858 gainfully employed participants, 1 776 men and women had data on job strain and were eligible for our meta-analyses. In Denmark, questionnaire- and register-based studies do not require approval from the Danish National Committee on Biomedical Research Ethics (Den Centrale Videnskabetiske komité). COPSOQ-I was approved by and registered with the Danish Data protection agency (registration number: 2008 - 54 - 0553).

Copenhagen Psychosocial Questionnaire version II (COPSOQ-II)

COPSOQ-II was carried out in 2004-2005. It included a follow up of respondents from COPSOQ I and also a representative sample of Danish residents aged 20-60 at study baseline. The questionnaire was sent to 8 000 individuals from the random sample and 4 732 individuals responded. The questionnaire could be completed using the posted questionnaire or via internet (2). Of the 3 818 gainfully employed participants, 3 428 individuals had data on job strain and were eligible for our meta-analyses. In Denmark, questionnaire- and register-based studies do not require ethics committee approval. COPSOQ-II was approved by and registered with the Danish Data protection agency (registration number: 2004-54-1493).

Danish Work Environment Cohort Study (DWECS)

DWECS is a split panel survey of working age Danish people. The cohort was established in 1990, when a simple random sample of men and women, aged 18-59, was drawn from the Danish population register. The participants have been followed up at five year intervals and data from the year 2000 was used for the IPD-Work. That year 11 437 individuals were invited to participate and 8 583 agreed to do so (3,4). Of the 5 606 individuals who were employed, 5 574 had data on job strain and were eligible for our meta-analyses. In Denmark, questionnaire- and register-based studies do not require ethics committee approval. DWECS was approved by and registered with the Danish Data protection agency (registration number: 2007-54-0059).

Finnish Public Sector study (FPS)

The Finnish Public Sector study is a prospective cohort study comprising the entire public sector personnel of 10 towns (municipalities) and 21 hospitals in the same geographical areas. Participants, who were recruited from employers' records in 2000-2002, were individuals who had been employed in the study organisations for at least six months prior to data collection (5). 48 592 individuals (9 337 men and 39 255 women aged 17 to 65) responded to the questionnaire. Of these, 48 034 had data on job strain and were eligible for our meta-analyses. Ethical approval was obtained from the ethics committee of the Finnish Institute of Occupational Health.

Gazel

Gazel is a prospective cohort study of 20 625 employees (15 011 men and 5 614 women) of France's national gas and electricity company, Electricité de France-Gaz de France (EDF-GDF) (6,7). Since the study baseline in 1989, when the participants were aged 35-50 years, they have been posted an annual follow-up questionnaire to collect data on health, lifestyle, individual, familial, social, and occupational factors. Job strain was measured in Gazel in 1997, which we treated as a baseline year for our analyses. 11 448 individuals participated that year and 11 362 of them had data on job strain and were eligible for our meta-analysis. The GAZEL study received approval from the national commission overseeing ethical data collection in France (Commission Nationale Informatique et Liberté).

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Health and Social Support (HeSSup)

The Health and Social Support (HeSSup) study is a prospective cohort study of a stratified random sample of the Finnish population in the following four age groups: 20–24, 30–34, 40–44, and 50–54. The participants were identified from the Finnish population register and posted an invitation to participate, along with a baseline questionnaire, in 1998 (8). Job strain was measured in 1998 and of the 25 898 individuals who responded to the questionnaire, 16 447 were in employment and had data on job strain and were thus eligible for our meta-analyses. The Turku University Central Hospital Ethics Committee approved the study.

Intervention Project on Absence and Well-being (IPAW)

IPAW is a 5-year psychosocial work environment intervention study including 22 intervention and 30 control work places in three organisations (a large pharmaceutical company, municipal technical services and municipal nursing homes) in Copenhagen, Denmark (9,10). The baseline questionnaire was posted to all the employees at the selected work-sites between 1996 and 1997. Of the 2 721 employees who worked at the 52 IPAW sites, 2 068 men and women completed the baseline questionnaire. Interventions took place at 22 workplaces during 1996-98 at the organisational and interpersonal level. Job strain was measured in 1996-1997 and the 2 031 participants, who had data on job strain, were eligible for our meta-analysis. IPAW was approved by and registered with the Danish Data Protection Agency (registration number: 2000-54-0066).

Burnout, Motivation and Job Satisfaction study (Danish acronym: PUMA)

Burnout, Motivation and Job Satisfaction study (Danish acronym: PUMA) is an intervention study of burn-out among employees in the human service sector (11). Selection criteria for the participating organisations was that they had between 200 and 500 employees, that occupational groups within each organisation were willing to participate and that the organisations would commit to the entire five-year study period. Participants gave consent to having their national identity numbers collected and used in later record linkages to Danish hospitalisation and cause of death registries (Hospitalsindlæggelsesregisteret, Dødsårsagsregisteret. At study baseline in 1999-2000, 1 914 participants agreed to take part. Of these, 1 847 individuals had data on job strain and were eligible for our meta-analyses. PUMA was approved by the Scientific Ethical Committees (Videnskabetisk Komiteer) in the counties in which the study was conducted and approved by and registered with the Danish Data Protection Agency (registration number: 2000-54-0048).

Swedish Longitudinal Occupational Survey of Health (SLOSH)

Swedish Longitudinal Occupational Survey of Health (SLOSH) is an on-going prospective cohort study following up individuals who participated in the Swedish Work Environment Survey (SWES) in 2003 or 2005. SWES, conducted biennially by Statistics Sweden, is based on a sample of gainfully employed people aged 16-64 years drawn from the Labour Force Survey (LFS). These individuals were first sampled into LFS through stratification by county, sex, citizenship and inferred employment status.

Data from the 2006 and 2008 data collection waves of SLOSH were used in the IPD-Work analyses. In both years, data were collected using postal self-completion questionnaires. In 2006, 5 985 individuals responded to the questionnaire. Of these, 5 104 people worked at least 30% of full time working hours and had data on job strain and were thus eligible for our meta-analyses (12). In 2008, a further 6 751 individuals responded to the questionnaire (13). Of these, 5 866 men and women worked at least 30% of full time working hours and had data on job strain and were thus eligible for our meta-analyses. SLOSH has been approved by the Regional Research Ethics Board in Stockholm.

Still Working

Still Working is an ongoing prospective cohort study. In 1986, the employees (n = 12 173) at all Finnish centres of operation of Enso Gutzeit (a forestry products manufacturer) were invited to participate in a questionnaire survey on demographic, psychosocial and health-related factors. (14,15). At baseline, 9 282 individuals responded, and of these 9 165 had data on job strain and were eligible for our meta-analyses. The study was approved by the ethics committee of the Finnish Institute of Occupational Health.

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Whitehall II

The Whitehall II study is a prospective cohort study set up to investigate socioeconomic determinants of health. At study baseline in 1985-1988, 10 308 civil service employees (6 895 men and 3 413 women) aged 35-55 and working in 20 civil service departments in London were invited to participate in the study (16,17). Data on job strain, measured at study baseline were available for 10 285 men of the men and women who were eligible for our meta-analyses. The Whitehall II study protocol was approved by the University College London Medical School committee on the ethics of human research. Written informed consent was obtained at each data collection wave. Phase 3 (1991-93) data were used in the job strain – type 2 diabetes analyses.

WOLF (Work, Lipids, and Fibrinogen) Stockholm and WOLF Norrland studies

The WOLF (Work, Lipids, and Fibrinogen) Stockholm study is a prospective cohort study of 5 698 people (3 239 men and 2 459 women) aged 19–70 and working in companies in Stockholm county (18). WOLF Norrland is a prospective cohort of 4 718 participants aged 19-65 working in companies in Jämtland and Västernorrland counties (19). At study baseline the participants underwent a clinical examination and completed a set of health questionnaires. For WOLF Stockholm, the baseline assessment was undertaken at 20 occupational health units between November 1992 and June 1995 and for WOLF Norrland at 13 occupational health service units in 1996-98. The Regional Research Ethics Board in Stockholm, and the ethics committee at Karolinska Institutet, Stockholm, Sweden approved the study.

References

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Supplementary Table 1. Sources of data for the assessment of incident type 2 diabetes by study.

Study	OGTT	Hospital records	Mortality register	Medication reimbursement	Self-report
COPSOQ-I		√	√		
COPSOQ-II		√	√		
DWECS		√	√		
FPS		√	√	√	
Gazel			√		√
HeSSup		√	√	√	
IPAW		√	√		
PUMA		√	√		
SLOSH		√	√		
Still working		√	√	√	
Whitehall II	√				√
WOLF-N		√	√		
WOLF-S		√	√		

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Supplementary Table 2. Sources of data for the assessment of prevalent type 2 diabetes by study.

Study	OGTT	Hospital records	Medication reimbursement	Self-report
COPSOQ-I		√		
COPSOQ-II		√		√
DWECS		√		
FPS		√	√	√
Gazel				√
HeSSup		√	√	√
IPAW		√		√
PUMA		√		
SLOSH		√		√
Still working		√	√	
Whitehall II	√			√
WOLF-N		√		√
WOLF-S		√		√

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Supplementary Figure 1. Age-, sex and SES-adjusted survival curves for incident type 2 diabetes by job strain status.

