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Short report

Emotional demands at work and risk of disability pension: a nationwide cohort study in Denmark

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► Additional supplemental material is published online only. To view, please visit the journal online (<https://doi.org/10.1136/oemed-2023-109378>).

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Received 21 December 2023

Accepted 15 April 2024

Published Online First

6 May 2024

ABSTRACT

Introduction Working in emotionally demanding jobs is associated with an increased risk of temporarily leaving the labour market due to long-term sickness absence. We tested whether employees working in emotionally demanding jobs are also at higher risk of permanently leaving the labour market due to disability pension compared with employees working in jobs that are not emotionally demanding.

Methods We conducted a 10-year cohort study in the workforce in Denmark (n=1 670 825), aged 30–59 years at baseline, by linking job exposure matrices with nationwide registries on social transfer payments and covariates. Using Cox regression, we analysed the risk of disability pension in relation to emotional demands in the full population and sex stratified. Multivariable adjusted models included sex, age, cohabitation, migration background, household disposable income and other work environmental factors (physical workload, influence, possibilities for development and role conflicts).

Results We identified 67 923 new cases of disability pension during 15 649 743 person-years of follow-up (mean follow-up: 9.4 years). We found an increasing risk of disability pension with higher levels of emotional demands, with HRs of 1.20, 1.23 and 1.73 for medium-low, medium-high and high emotional demands, respectively, compared with low emotional demands in the most adjusted model. There was an exposure–response association in women and a tendency towards an exposure–response association in men.

Discussion In this nationwide cohort study, we found an increased risk of permanent exit from the labour market due to disability pension in women and men working in emotionally demanding jobs.

INTRODUCTION

Dealing with emotions of people whom employees must take care of (eg, clients, patients, pupils and customers) as a part of their job is emotionally demanding.¹ We recently reported that employees working in emotionally demanding jobs are at increased risk of long-term sickness absence (LTSA), in both Denmark and Sweden.^{2–4}

While emotional demands at work are linked to LTSA, that is, temporarily leaving the labour market, previous studies reported that emotional demands are not linked with an increased risk of permanently leaving the labour market.^{5,6} These studies were, however, conducted with small and selected study populations. Another limitation is

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Working in emotionally demanding jobs is associated with an increased risk of temporarily leaving the labour market due to long-term sickness absence.

WHAT THIS STUDY ADDS

⇒ In this nationwide cohort study, we found an increased risk of permanent exit from the labour market due to disability pension in women and men working in emotionally demanding jobs.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Emotional demands are prevalent in several occupations involving person-related work. There is a need to both reduce emotional demands at work and identify workplace factors that may buffer the adverse effects of emotional demands on disability pension and to test these in workplace interventions.

possible reporting bias due to self-reported exposure measurements.

We, therefore, aimed to test in a large study population, encompassing an entire national workforce in the age group 30–59 years and applying non-self-reported exposure measurement, if employees in emotionally demanding jobs are at higher risk of permanently leaving the labour market due to disability pension, compared with employees in jobs that are not emotionally demanding.

METHODS

Study design and population

We analysed data from the Job Exposure Matrix Analyses of Psychosocial Factors and Healthy Ageing in Denmark (JEMPAD) cohort, a Danish nationwide cohort with information on working conditions, health and labour market participation. JEMPAD includes all employed individuals residing in Denmark in the year 2000, aged 30–59 years with complete data on age, sex and migration background, a total of 1 680 214 individuals. Individuals who received disability pension before or during the baseline year were excluded, yielding a final study population of 1 670 825 individuals. Mean age was 43.8 years (SD: 8.4 years) and 48.4% were women.



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To cite: Framke E, Sørensen JK, Madsen IEH, et al. *Occup Environ Med* 2024;**81**:262–265.

We followed the cohort for incident disability pension for up to 10 years, from 1 January 2001 to 31 December 2010.

Emotional demands at work

We measured emotional demands at work with a job exposure matrix (JEM) based on information from the Danish Work Environment Cohort Study (DWECS). DWECS is a survey on working conditions and health, conducted in a randomly selected sample of the Danish workforce from 1990 to 2010. Details on DWECS items, scale and JEM construction are published elsewhere³ and provided in online supplemental material. Briefly, using the 2000 and 2005 DWECS waves, we constructed a scale by calculating the mean of the three items on emotional demands. Using multilevel modelling, we constructed the JEM as the predicted level of emotional demands given occupational group (coded according to DISCO-88, the Danish version of the International Standard Classification of Occupations-88 system), sex, age and year of data collection. Using the year 2000 specific JEM, we assigned the predicted level of emotional demands to all individuals in the study population according to occupational group, sex and age at baseline.

We categorised individuals into four exposure groups based on quartile split of the distribution of the JEM values, that is, low (reference group), medium-low, medium-high and high emotional demands.

Disability pension

We identified disability pension in the Danish Register for Evaluation of Marginalisation (DREAM)⁷ by the code '783'. DREAM includes weekly information on all social transfer payments in Denmark since 1991, including disability pension. In Denmark, disability pension is granted by municipalities based on a work-ability assessment. Part-time disability pension and returning to work from disability pension are rare in Denmark.⁸

Covariates

Covariates were measured in 2000 and included sex, age, migration background, household disposable income and four other working conditions (physical workload, influence, possibilities for development and role conflicts). Information on covariates

was retrieved from population-based registers,^{9–11} except the working conditions that were measured with DWECS-based JEMs.³

Statistical analysis

Using Cox regression, we estimated HRs and 95% CIs for the association between medium-low, medium-high and high emotional demands compared with low emotional demands at baseline and incident disability pension during follow-up. We censored due to early and statutory retirement, emigration, death or end of study, whichever came first.

We fitted three models with estimates incrementally adjusted for sex and age (model 1), cohabitation, migration background, and household disposable income (model 2), and the four other working conditions (model 3). We conducted a supplementary analysis with adjustment for LTSA in the 24 months before baseline, although LTSA might be a mediator rather than a confounder for the association between emotional demands and disability pension.

We added two post hoc analyses because estimates changed substantially from model 2 to model 3. First, we explored the relative contribution of each working condition to the change in the estimates by entering the four working conditions separately into model 3. Second, we explored the association of emotional demands within strata of high versus low levels of the other working conditions by dichotomising the working conditions by median split and repeating the analyses in the strata.

Visual inspection of survival curves did not indicate violations of the proportional hazards assumption (online supplemental material).

All analyses were conducted in SAS, V.9.4.

RESULTS

During 15 649 743 person-years of follow-up, we identified 67 923 disability pension cases, 43.4 per 10 000 person-years (48.7 and 38.4 cases in women and men, respectively). The mean follow-up was 9.4 years.

We found a lower risk of disability pension for medium-low, medium-high and high emotional demands compared with low emotional demands in model 1 and model 2 (table 1).

Table 1 Exposure to emotional demands in 2000 and risk of disability pension from 2001 to 2010

Emotional Demands	N	Person-years	Cases	Cases per 10 000 person-years	Model 1 HR, 95% CI	Model 2 HR, 95% CI	Model 3 HR, 95% CI
All	1 670 825	15 649 743	67 923	43.4			
High	417 663	3 930 006	18 989	48.3	0.76 (0.74 to 0.78)	0.86 (0.84 to 0.87)	1.73 (1.68 to 1.79)
Medium high	416 667	3 944 803	13 723	34.8	0.57 (0.56 to 0.58)	0.70 (0.68 to 0.71)	1.23 (1.20 to 1.27)
Medium low	419 311	3 894 792	16 942	43.5	0.80 (0.78 to 0.82)	0.86 (0.84 to 0.88)	1.20 (1.17 to 1.23)
Low	417 184	3 880 141	18 269	47.1	Reference	Reference	Reference
Women	809 416	7 616 373	37 099	48.7			
High	305 321	2 876 945	14 393	50.0	0.69 (0.67 to 0.71)	0.78 (0.75 to 0.81)	2.06 (1.95 to 2.18)
Medium high	240 324	2 298 373	9 743	42.4	0.57 (0.55 to 0.59)	0.68 (0.66 to 0.71)	1.54 (1.47 to 1.62)
Medium low	190 994	1 773 649	8 428	47.5	0.72 (0.69 to 0.75)	0.78 (0.76 to 0.81)	1.26 (1.21 to 1.31)
Low	72 777	667 406	4 535	67.9	Reference	Reference	Reference
Men	861 409	8 033 371	30 824	38.4			
High	112 342	1 053 061	4 596	43.6	0.85 (0.82 to 0.88)	0.97 (0.93 to 1.00)	1.52 (1.45 to 1.58)
Medium high	176 343	1 646 431	3 980	24.2	0.51 (0.50 to 0.53)	0.66 (0.64 to 0.69)	1.05 (1.01 to 1.09)
Medium low	228 317	2 121 144	8 514	40.1	0.85 (0.82 to 0.87)	0.89 (0.87 to 0.92)	1.22 (1.18 to 1.25)
Low	344 007	3 212 735	13 734	42.7	Reference	Reference	Reference

Model 1: Adjusted for sex and age. Model 2: Further adjusted for cohabitation, migration background and household disposable income after tax. Model 3: Further adjusted for physical workload, influence, possibilities for development and role conflicts.

After adjustment for physical workload, influence, possibilities for development and role conflicts (model 3), the estimates reversed and indicated an increasing risk of disability pension with increasing levels of emotional demands (HR of 1.20, 1.23 and 1.73 for medium-low, medium-high and high emotional demands, respectively, compared with low emotional demands).

In women, there was a clear exposure–response association with HRs of 1.26 (medium low), 1.54 (medium high) and 2.06 (high) in the most-adjusted model. In men, there was a tendency towards exposure–response associations (HRs of 1.22, 1.05 and 1.52).

Estimates for the complete main model and estimates adjusted for LTSA before baseline are provided in online supplemental material.

Post hoc analyses

Adjustment for possibilities for development was the most important factor for reversing the estimates from model 2 to model 3, followed by influence and physical workload (data are available on request).

When we repeated the analyses stratified by high and low levels of the four other working conditions, we found that high emotional demands were associated with an increased risk of disability pension in all strata (data are available on request).

DISCUSSION

In this nationwide cohort study including 1 670 825 employed individuals, we found an increased risk of permanent exit from the labour market due to disability pension in women and men working in emotionally demanding jobs. There was an exposure–response association in women and a tendency towards an exposure–response association in men. The increased risk of disability pension was observed after, but not before, adjusting for other working conditions, suggesting that the association between emotional demands and disability pension was masked by confounding by the other working conditions. Future studies should analyse if there is an interaction between emotional demands and other working conditions with regard to disability pension.

Our findings contrast with results from previous studies. Andersen *et al*⁶ reported that high emotional demands were associated with a decreased risk of disability pension, after adjustment for physical exertion at work. However, the population consisted of only one job group, female eldercare workers and it is possible that the variation in emotional demands in the study did not reflect differences in working conditions but other factors (eg, perceptions or mood). Sundstrup *et al*⁵ reported that emotional demands were associated with risk of disability pension in a population of older workers (mean age: 54.3 years) with an HR of 1.59 in a model that included adjustment for physical workload, however, not statistically significant (95% CI 0.92 to 2.77). If employees managed their jobs until mid-50s, it is conceivable that many would continue working until eligibility for early retirement, which may result in a low number of disability pension cases. Both earlier studies assessed emotional demands by self-report, making estimates vulnerable to reporting bias, whereas in our study the use of a JEM greatly reduced the possibility of reporting bias.

Limitations

Application of JEMs may lead to exposure misclassification as JEMs disregard differences in exposure between employees

with identical occupational codes¹²; therefore, one should be cautious when interpreting results on the individual level. We cannot rule out residual confounding, for example, that health status has caused selection into certain jobs.

We followed participants no longer than 10 years because we were concerned about exposure misclassification in a longer follow-up. It is possible that the results from the study period (2000–2010) are not applicable to the contemporary Danish labour market. However, recent numbers of awarded disability pensions in Denmark are comparable to the study period.

As welfare and administrative systems differ between countries, generalisation of Danish research results to other countries should be done with caution.

CONCLUSION

In this nationwide cohort study, we found an increased risk of permanent exit from the labour market due to disability pension in women and men working in emotionally demanding jobs.

Contributors Conception: EF, JKS, IEHM and RR. Writing of first draft: EF. Statistical analyses: JKS. Design and interpretation of the study and revision and approval of the manuscript: EF, JKS, IEHM, RR. EF and RR act as guarantors of the study.

Funding This study was funded by grants from the Danish Work Environment Research Fund (grant number 27-2017-03) and from the NordForsk Nordic Program on Health and Welfare (grant #75021).

Disclaimer EF, JKS, IEHM and RR have nothing to disclose. The funders of the study had no role in study design, data collection, data analysis, data interpretation, writing of the report or decision to submit for publication.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. The data underlying this article cannot be shared publicly due to data protection regulation. All data are stored in a protected server environment at Statistics Denmark and can be accessed only by researchers who are authorised by Statistics Denmark and approved by the National Research Centre for the Working Environment. Please, contact RR for details (rer@nfa.dk).

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Supplementary Material to Article:**Emotional demands at work and risk of disability pension: A nationwide cohort study in Denmark**

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1) Items of the work environment measures

E-Table 1. Scales, items, and response options for the job exposure matrices

Scales	Items	Response options
Emotional demands (ICC=0.22) (Cronbach's alpha=0.87) (Non-response=2.8%)	Does your work put you in emotionally disturbing situations?	Always; Often; Sometimes; Seldom; Never/hardly ever
	Is your work emotionally demanding?	To a very large extent; To a large extent; Somewhat; To a small extent; To a very small extent
	Do you get emotionally involved in your work?	To a very large extent; To a large extent; Somewhat; To a small extent; To a very small extent
Influence (ICC=0.20) (Cronbach's alpha=0.76) (Non-response=2.9%)	Do you have a large degree of influence concerning your work?	Always; Often; Sometimes; Seldom; Never/hardly ever
	Do you have a say in choosing who you work with?	Always; Often; Sometimes; Seldom; Never/hardly ever
	Can you influence the amount of work assigned to you?	Always; Often; Sometimes; Seldom; Never/hardly ever
	Do you have any influence on what you do at work?	Always; Often; Sometimes; Seldom; Never/hardly ever
Possibilities for development (ICC=0.25) (Cronbach's alpha=0.72) (Non-response=2.9%)	Does your work require you to take the initiative?	To a very large extent; To a large extent; Somewhat; To a small extent; To a very small extent
	Do you have the possibility of learning new things through your work?	To a very large extent; To a large extent; Somewhat; To a small extent; To a very small extent
	Can you use your skills or expertise in your work?	To a very large extent; To a large extent; Somewhat; To a small extent; To a very small extent
Role conflicts (AUC=0.68) (Cronbach's alpha=NA) (Non-response=3.9%)	Are contradictory demands placed on you at work?	No, not at all; From time to time; Yes, certainly
Physical demands (ICC=0.37) (Cronbach's alpha=0.80) (Non-response=5.0%)	Do you sit?	Almost all of the time; About ¾ of the time; About ½ of the time; About ¼ of the time; Rarely; Never

	Do you stand in the same spot?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you work with your back twisted or bent forwards without supporting with your hands and arms?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you twist or bent many times per hour?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Are your arms lifted to or above the shoulders?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you work with your neck twisted or bent forwards?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you work with your hand twisted or bent in the wrist?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you make the same finger-movements many times a minute (e.g. keying of text)?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you make the same arm-movements many times a minute (e.g. packing, mounting, machinework, carving)?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never
	Do you squat or kneel when working?	Almost all of the time; About $\frac{3}{4}$ of the time; About $\frac{1}{2}$ of the time; About $\frac{1}{4}$ of the time; Rarely; Never

ICC: Intraclass correlation. AUC: Area under the curve.

2) Construction of the job exposure matrices

The description of the construction of the job exposure matrices is a modified version of a description previously published (1). To ascertain emotional demands, influence, possibilities for development, role conflicts, and physical demands at work we constructed job exposure matrices (JEM) based on information from the Danish Work Environment Cohort Study (DWECS) and assigned these JEMs to individuals in the JEMPAD cohort. DWECS is a survey on working conditions and health conducted in a random sample of employed individuals in Denmark aged 18 to 64 years, first drawn in 1990 and followed-up every fifth year until 2010, with inclusion of additional individuals in each wave. We included DWECS data in the JEM construction by combining data from the 2000 and 2005 waves (2,3).

From DWECS, we included three items on emotional demands, four items on influence, three items on possibilities for development, one item on role conflicts and 10 items on physical demands at work (see e-Table 1). The psychometric properties of the scales for emotional demands, influence and possibilities for development were derived from the Copenhagen Psychosocial Questionnaire, version II (COPSOQ-II) and are comprehensively documented (4–8) whereas such a documentation is, to our knowledge, not available for the DWECS measures of role conflicts and physical demands.

We included DWECS respondents in the JEM construction, if they responded to at least half of the items within each scale. We calculated the scales as the mean score of the items on emotional demands, influence, and possibilities for development, respectively. Role conflicts was a single item measure that was dichotomized (Yes, certainly versus other response options). We constructed a sum score (ranging from 10 to 60) for physical work demands by scoring each item from 1 to 6 (higher scores indicate higher demands, sitting reversely coded) and adding up the scores. Higher scores indicated higher levels of emotional demands, influence, possibilities for development, role conflicts, and physical demands, respectively. The item non-response for each of the five work environment factors was ranging from 2.8% to 5.0% (see e-Table 1). There was a social gradient in item non-response. Item non-response was less than 1% in occupational groups with the highest socioeconomic status (legislators, senior officials, managers) and about 6% in occupational groups with the lowest socioeconomic status (elementary occupations, unskilled workers).

Each DWECS respondent was assigned an occupational group according to the DISCO-88 occupational classification system. DISCO-88 is the Danish version of the International Standard Classification of Occupations (ISCO) developed by the International Labour Organization (ILO) and was used from 1991 to 2009, when it was replaced with DISCO-08 (9,10). We used the four-digit level classification and required a minimum of five DWECS respondents within each occupational group. Occupational groups with less than five respondents were collapsed with other similar small occupational groups. The rationale for collapsing the groups was avoiding construction of JEMs based on too few individuals. Further, due to data protection regulations, it was not possible to conduct analyses based on less than five individuals. The DISCO-88 classification system includes 377 four-digit occupational groups. Each of the JEMs are based on 246 occupational groups with five or more DWECS respondents in each occupational group. Of the 377 occupational groups, we created JEM values on the four-digit level for 210 occupational groups. The remaining 167 four-digit level occupational groups (377 minus 210) were collapsed with other similar

occupational groups in the DISCO-88 classification system with less than five respondents. This procedure resulted in 36 collapsed occupational groups, of which 22 were collapsed on the third digit level, 12 on the second digit level and finally, two on the first digit level. The 36 collapsed occupational groups were equally distributed across the main occupational groups, except that the main groups 5 and 6 were not represented among the collapsed third digit level groups. Standard errors of the JEM values were somewhat higher for the 36 collapsed occupational groups as compared to the 210 four-digit level occupational groups indicating that four-digit level occupational groups are more homogenous, whereas the collapsed occupational groups were more varied.

Using the Glimmix procedure in SAS 9.4, we estimated the predicted level of emotional demands, influence, possibilities for development, and physical demands and using the Logistic procedure in SAS 9.4, we estimated the predicted probability of role conflicts given occupational group, sex, age, and year of data collection (2000, 2005). Thus, we constructed sex-, age-, and period specific JEMs.

To evaluate the extent to which the scores for the five working conditions were explained by job group, we calculated intra-class correlation coefficients (ICC) for the continuous variables of predicted levels of emotional demands, influence, possibilities for development, and physical demands. For the predicted probability of role conflicts (dichotomously defined) we estimated the area under the curve (AUC) (see e-Table 1). The ICCs ranged from 0.20 to 0.37 and the AUC was 0.68, indicating acceptable values for job exposure matrices concerning psychosocial working conditions, as compared to other matrices on the topic (11). E-table 2 shows correlation coefficients between the five job exposure matrices.

We linked the predicted level of emotional demands, influence, possibilities for development, and physical demands and the predicted probability of role conflicts, respectively, to the individuals in the JEMPAD cohort at baseline in 2000 using the year 2000 specific JEM.

Based on the predicted level of emotional demands, we categorized the individuals into four exposure groups (low; medium-low; medium-high; high) based on a quartile split of the distribution in the study population at baseline in 2000. Predicted levels of influence, possibilities for development, and physical demands and the predicted probability of role conflicts were analyzed as continuous variables.

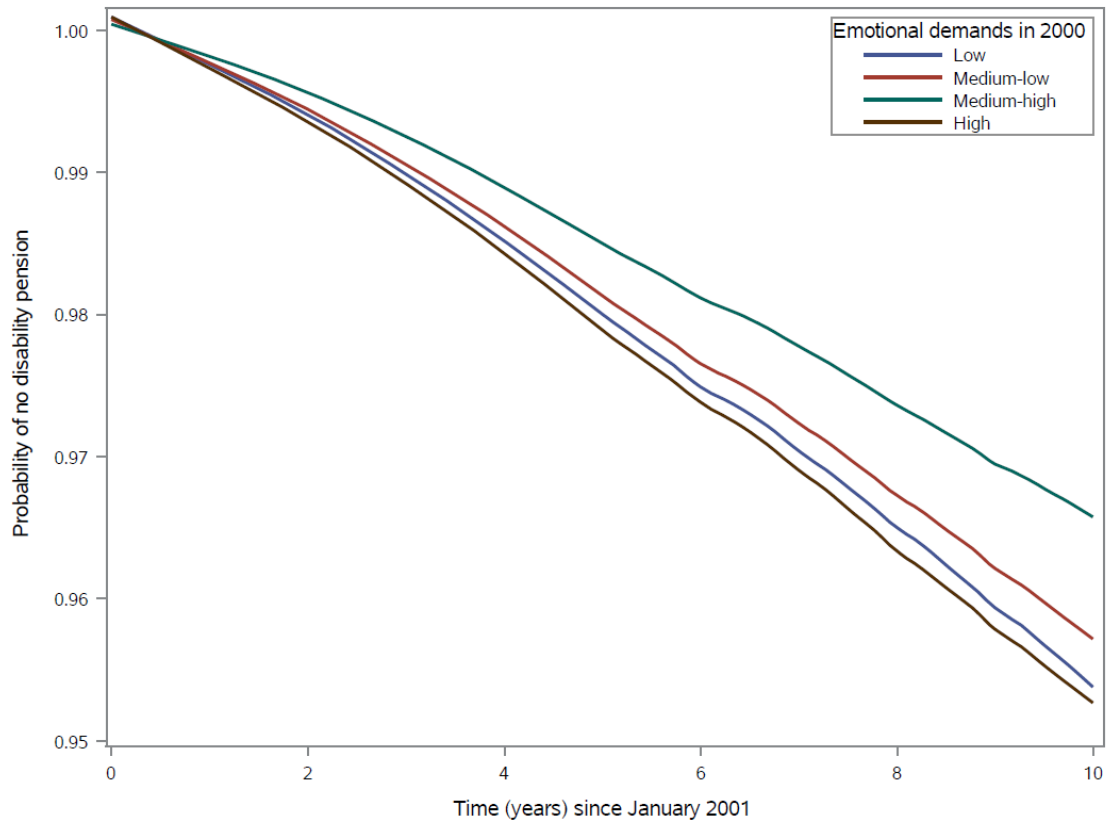
E-Table 2. Correlation coefficients between the five job exposure matrices

	Emotional demands	Influence	Possibilities for development	Role conflicts	Physical demands
Emotional demands	1.000				
Influence	0.356 p <0.001	1.000			
Possibilities for development	0.606 p <0.001	0.758 p <0.001	1.000		
Role conflicts	0.276 p <0.001	0.150 p <0.001	0.190 p <0.001	1.000	
Physical demands	-0.357 p <0.001	-0.560 p <0.0001	-0.588 p <0.001	0.016 p <0.001	1.000

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3) Kaplan-Meier survival plot showing probability of no disability pension according to levels of emotional demands



E-Figure 1. Kaplan-Meier survival plot showing probability of no disability according to levels of emotional demands

4) Hazard ratios for all variables of the complete main model

E-Table 3. Exposure to emotional demands and covariates in 2000 and risk of disability pension from 2001 to 2010

Emotional Demands	N	Person-years	Cases	Cases per 10,000 person-years	Model 3 HR, 95% CI
All	1,670,825	15,649,743	67,923	43.4	
High emotional demands	417,663	3,930,006	18,989	48.3	1.73 (1.68-1.79)
Medium-high emotional demands	416,667	3,944,803	13,723	34.8	1.23 (1.20-1.27)
Medium-low emotional demands	419,311	3,894,792	16,942	43.5	1.20 (1.17-1.23)
Low emotional demands	417,184	3,880,141	18,269	47.1	Reference
Female sex	809,416	7,616,372	37,099	48.7	1.15 (1.13-1.18)
Male sex	861,409	8,033,371	30,824	38.4	Reference
Age (per one year increase)	1,670,825	15,649,743	67,923	43.4	1.06 (1.06-1.06)
Single, living alone	426,180	3,923,833	24,672	62.9	1.38 (1.35-1.40)
Cohabiting	1,241,021	11,695,380	43,176	36.9	Reference
Descendants of emigrants	2,457	22,906	93	40.6	1.77 (1.72-1.82)
Emigrants	73,054	646,358	5,749	88.9	1.10 (0.90-1.35)
Danish origin	1,595,314	14,980,478	62,081	41.4	Reference
Income 1 st decile	157,011	1,463,841	11,837	80.9	3.56 (3.42-3.72)
Income 2 nd decile	157,019	1,489,397	8,541	57.3	2.68 (2.57-2.80)
Income 3 rd decile	157,020	1,494,012	7,012	46.9	2.29 (2.19-2.39)
Income 4 th decile	157,008	1,492,574	6,155	41.2	2.00 (1.92-2.09)
Income 5 th decile	157,016	1,486,358	5,848	39.3	1.87 (1.79-1.95)
Income 6 th decile	157,015	1,476,497	5,620	38.1	1.73 (1.66-1.81)
Income 7 th decile	157,015	1,467,882	5,422	36.9	1.63 (1.56-1.70)
Income 8 th decile	157,017	1,458,724	5,047	34.6	1.50 (1.43-1.57)
Income 9 th decile	157,013	1,449,498	4,207	29.0	1.27 (1.21-1.34)
Income 10 th decile	157,015	1,430,158	3,177	22.2	Reference
Influence at work (per 1 unit increase)	1,670,825	15,649,743	67,923	43.4	0.99 (0.95-1.02)
Possibilities for development (per 1 unit increase)	1,670,825	15,649,743	67,923	43.4	0.55 (0.53-0.57)
Role conflicts (per 1 unit increase)	1,670,825	15,649,743	67,923	43.4	1.12 (0.92-1.35)
Physical demands (per 1 unit increase)	1,670,825	15,649,743	67,923	43.4	1.05 (1.04-1.05)

All variables are adjusted for each other.

5) Supplementary analysis: Adding a model with adjustment for previous long-term sickness absence

E-Table 4. Exposure to emotional demands in 2000 and risk of disability pension from 2001 to 2010 with further adjustment for long-term sickness absence in the 24 months before baseline

Emotional Demands	N	Person-years	Cases	Cases per 10,000 person-years	Model 3 HR, 95% CI	Model 4 HR, 95% CI
All	1,670,825	15,649,743	67,923	43.4		
High	417,663	3,930,006	18,989	48.3	1.73 (1.68-1.79)	1.74 (1.69-1.79)
Medium-high	416,667	3,944,803	13,723	34.8	1.23 (1.20-1.27)	1.23 (1.20-1.26)
Medium-low	419,311	3,894,792	16,942	43.5	1.20 (1.17-1.23)	1.20 (1.17-1.23)
Low	417,184	3,880,141	18,269	47.1	Reference	Reference

Model 3: Adjusted for sex, age, cohabitation, migration background, household disposable income after tax, physical workload, influence, possibilities for development, and role conflicts (same model 3 as in table 1 in the article). Model 4: Further adjusted for long-term sickness absence in the 24 months before baseline.

Note: Long-term sickness absence was defined as sickness absence with a duration of more than 30 days. Information was retrieved from the Danish Register for Evaluation of Marginalisation (DREAM).