Incidence of ill-health related job loss and related social and occupational factors. The "unfit for the job" study: a one-year follow-up study of 51,132 workers

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Objective The analysis of ill-health related job loss may be a relevant indicator for the prioritisation of actions in the workplace or in the field of public health, as well as a target for health promotion. The aim of this study was to analyse the medical causes, the incidence, and the characteristics of employees medically unfit to do their job.

Methods This one-year prospective study included all workers followed by occupational physicians in an occupational health service in the south of France. The incidence of unfitness for work have been grouped according to the main medical causes and analysed. We performed a multivariate analysis in order to adjust the observed risk of job loss based on the age groups, sex, occupation and the activity sectors.

Results Seventeen occupational physicians followed up 51,132 workers. The all-cause incidence of being unfit to return to one's job was 7.78‰ (n=398). The two main causes of being unfit for one's job were musculoskeletal disorders (47.2%, n=188) and mental ill-health (38.4%, n=153). Being over 50 years old [Odds ratio (OR) 2.63, 95% confidence interval (95% CI) 2.13-3.25] and being a woman [OR 1.52, 95% CI 1.21-1.91] were associated with the all-cause unfitness, independent of occupation and activity sector.

Conclusions Identification of occupational and demographic determinants independently associated with ill-health related job loss may provide significant and cost-effective arguments for health promotion and job loss prevention.

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Conclusions Identification of occupational and demographic determinants independently associated with ill-health related job loss may provide significant and cost-effective arguments for health promotion and job loss prevention.

The assessment of occupational diseases and their impact is a difficult issue. However, it is important for setting priority actions concerning health and safety at work. Most data concerning these occupational diseases indirectly assesses their incidence or impact. The findings of The Health and Occupation Reporting network (THOR) highlighted the gap between the epidemiological assessment by a network of specialists removed from the workplace (i.e., psychiatrist) and a direct assessment by an occupational physician linked to the workplace (Carder et al., 2009).

The difficulties with assessing the prevalence or the incidence of occupational diseases are (i) the comprehensive identification of the cases, (ii) the reliable notification of work causality concerning multifactorial diseases, and (iii) the knowledge about the population in whom these cases are identified. Over recent years, several occupational disease networks have been developed and data have been collected concerning occupational diseases. Several nationwide networks of clinical specialists have been developed in Europe (Stocks et al., 2015), such as THOR in the UK (McDonald et al., 2006), or the National Occupational Disease Surveillance and Prevention Network (RNV3P) in France (Bonneterre et al., 2010; Faisandier et al., 2011). Another way to assess occupational diseases is to match different data sources. Mustard et al. (2015) matched different and independent data sources: (i) emergency department encounter records, (ii) lost-time workers compensation claims and (iii) representative samples of workers in a national health interview survey (Mustard et al., 2015).

Numerous countries may also have a compensation system for occupational diseases. Data concerning the recognition of occupational diseases are fairly easy to collect by the organisations which pay the compensation. These systems, however, may provide compensation to workers for benign illnesses, such as occupational contact eczema, but compensation may never be claimed

for some frequent and fairly serious diseases, such as work-related depression or burnout syndrome. Consequently, this kind of indicator is a poor representation of the main occupational health problems in a country or a region. Likewise, the analyses of the causes of disability pensions or disability retirements are probably not very suitable for assessing the incidence of occupational diseases. As a result, two of the main difficulties are the collection and use of relevant and reliable indicators.

Unfitness ("inaptitude" in French), is the recognition by the occupational physician that a worker's health status is no longer fit for their current job and that they will require a job change. This does not mean that the worker cannot work anymore, but that they can no longer work in their current position. In France, the assessment of the fitness or the unfitness to perform the job is exclusively carried out by the occupational physician (OP) during a medical examination. All paid workers are systematically followed by the OP, either yearly or every two years. Additional specific medical examinations are carried out when a medical problem occurs. Moreover, when a paid worker is on sick leave for one month or more, fitness is systematically assessed by the OP when the worker returns to work (during a medical examination called "the reinstatement visit"). An "unfit for the job" outcome may be pronounced for several reasons, including but not limited to: (i) a change in an employee's health status (e.g., returning to work after recovery from a serious illness or injury), (ii) a medical condition that may limit, reduce or prevent the person from effectively performing a new or current job (e.g., musculoskeletal conditions that limit mobility), (iii) a medical condition that is likely to make it unsafe both for the employee, their co-workers or the public (e.g., driving is essential to the job but the employee is subject to unpredictable and sudden unconsciousness). Each OP follows roughly 3,000 workers (Dutheil et al., 2017). There are currently 5,600 OPs in France who report one of three conditions back to the employer: fit, fit subject to work modification, or unfit for the job. Unfit for the job may lead to being assigned to a new suitable job in the same company, or to the termination of the employment contract due to medical issues. According to a recent study performed in one French region by the General Labour Department of the Ministry of Work, termination of the employment contract is the main

conclusion of an unfitness notification (more than 97% of cases) (Fernand, 2012).

A previous study explored the analysis of the "unfit for the job" determination among 55,026 workers by collecting data directly from the medical records of a French occupational health service (Dutheil et al., 2016). The main limitation of this study was that only a univariate analysis was performed. Indeed, the data concerning the followed up workers were non-individual statistics and demographic information in aggregated form (e.g., sex ratio, occupations, average age), not a data frame extracted from the information system. Consequently, the socio-demographics could not be merged with the data frame of unfitness. However, to our knowledge, this is the only study analysing ill-health related job loss.

The current study aimed to estimate the incidence of unfitness for the job in an occupational health service over a period of one year, and to describe their aetiology and the characteristics of the unfit employees.

Methods

Study design and setting

This follow-up study took place between January 1st 2014 and December 31st 2014 in the occupational health service in Montpellier (France). Seventeen OPs followed up the employees of this employment area (except for the farming area and the employees in public services).

Procedure and participants

All of the workers seen in this occupational health service in 2014 were eligible for participation

in the study. General data concerning the workers were extracted from the information system: age, sex, length of service, occupation and industry, fitness or unfitness. Occupation was coded to four digits using the French Occupational Classification (PCS-2003 socio-professional categories) and the industries were coded using the European NACE-2008 nomenclature and aggregated A10 international classification. When an OP reported an "unfit for the job", they collected the age, sex, socio-professional group, activity sector, and the diagnostic cause of the unfitness, which was supported by an expert medical opinion (e.g., by a psychiatrist, orthopedic specialist, or a rheumatologist depending on the disease) and the OP's own judgment on the work causality. The duration of the sick leave, the accident at work or the occupational disease recognition procedure, and what became of the employee (occupational reclassification, discharge due to unfitness) were also collected.

The subject's fitness for modified work or unfitness with occupational reclassification were not collected as an outcome. Each OP checked the cases of "unfit for the job" using an informatics query at the end of the year and completed the data collection if necessary. All data were anonymously collected. Participants were recruited during annual work medical examinations. No consent was given because anonymous data was used from normal daily clinical practices taken from medical records. The IRB approved the study (2018_IRB-MTP_02-02)

Statistical analysis

The incidence of unfitness to work was calculated (numerator = number of unfit workers; denominator = number of followed up employees). The statistical analyses were conducted for all causes of unfitness and for the two main groups of pathologies. The relationship between unfitness and the other characteristics was calculated using the crude Odds Ratio (ORc) and its 95% Confidence Interval (95% CI). Multivariate analyses were computerised, adjusting for age, sex, occupation and industry, using logistic regression models to provide the adjusted Odds Ratio

(ORa). Statistical analyses were conducted using the R and epicalc packages.

Results

Overall, 51,132 employees were followed up by 17 OPs in 2014 and were included in this study. Among them, 398 cases of "unfit for the job" were reported. The overall incidence of "unfit for the job" was 7.8‰.

Demographics and company characteristics of employees both fit and unfit for the job are presented in Table 1. The mean age of followed up workers was 38.7 years (SD=11.8). The unfit for the job workers were older (mean = 44.4 years; SD=11.8, $p<0.001$).

When all causes were considered, women [ORa 1.52, 95% CI 1.21-1.91] and workers over 50 years old [ORa 2.63, 95% CI 2.13-3.25] were more frequently unfit for the job (Table 2).

Two groups of pathologies caused 85.7% of the cases of unfitness: musculoskeletal disorders (MSD) (47.2%) and mental ill-health (38.4%) (Table 2).

Most of the cases of unfitness were caused by a MSD. The average age of these workers was 46.0 years (SD=11.3). Among the 188 cases of unfitness caused by a MSD, 32.4% were recognized as an occupational injury/disease, whereas 64.0% of these pathologies were estimated to be work related by the OP. The average length of sick leave was significant (13.1 months, SD 12.3). After adjustment, unfitness caused by a MSD was associated with gender [women ORa 1.89, 95% CI 1.35-2.66] and the odds ratio increased with the age groups, notably that of over 50 year olds (Table 2). With regard to the association with the industry, the activity sector for which the number of cases of unfitness was below 10 (manufacturing, construction, and information & communication) were excluded from the analysis. Moreover, the financial and insurance sectors were aggregated with real estate activities. This aggregated sector was considered as the reference group. All of the other sectors were significantly associated with unfitness, but after adjustment,

189 only one sector (trade, repair, transportation, accommodation and food services) remained
190 statistically significant [ORa 3.65, 95% CI 1.32-10.1] (Table 2). The group containing the higher
191 grade white collar workers was less concerned [ORa 0.12, 95% CI 0.02-0.88] by unfitness than
192 the reference group (intermediate occupations and lower supervisors). By contrast, the blue collar
193 workers were highly concerned by unfitness resulting from a MSD [ORa 8.13, 95% CI 4.52-14.62]
194 compared with the same reference group (Table 2).
195
196 One hundred and fifty three declarations of unfitness caused by mental ill-health were delivered.
197 Eight cases (5.2%) were recognized as an occupational injury or an occupational disease by the
198 health insurance. Conversely, the OP estimated that 64.7% of these diseases were work related.
199 Compared to MSD, the average length of sick leave (10.3 months SD 10.5) was lower ($p<0.05$)
200 and workers were younger (40.9 years versus 46.0, $p<0.001$). Unlike for MSD, age and gender
201 were less associated with mental ill-health related unfitness. Moreover, all occupation groups and
202 activity sectors were concerned (Table 2).
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205 ***Discussion***
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207 Data for this study were directly collected by the OP who determined whether the patient was
208 “unfit for the job” or not. Consequently, the job losses and the medical causes are as reliable as
209 possible. Moreover, they are based on a medical examination, supported by an expert medical
210 opinion, and directly extracted from the medical records. Therefore, the data may be considered
211 as reliable and of high quality.
212 The study design allowed information concerning the denominator to be completed. One
213 strength of our design is that the population followed by the OP involved in this study is known
214 and the requested information was extracted directly from the information system. Most of the
215 experts in the network have accurate data concerning the cases (i.e., an occupational disease) but

cannot collect reliable data on the population observed and, consequently, the indicators (e.g., incidence or associated risk).

Determining whether the patient's health is insufficient for the related job, known as "unfit for the job" in France, is exclusively performed by the worker's OP. Consequently, the number of cases of ill-health related job loss is probably under-evaluated. For example, an employee with anxiety or depression caused by a conflict at work may choose to resign, but will lose unemployment insurance. By contrast, a termination for a medical reason will maintain the unemployment insurance and termination indemnity. Consequently, it is in the interest of a worker with a medical problem to be determined unfit for their job rather than to resign from the company. Particularly severe or life-threatening diseases (e.g., most cancers) are probably under-evaluated in this study design, which is probably not appropriately adapted to reliably assess the impact of such pathologies on jobs.

Ill-health related job losses and socio-demographic data are easy to extract from the information systems using a simple SQL query. Most of the data are comprehensively coded in the databases of the occupational health services. Moreover, such an epidemiological system is very cost effective and is based on the French occupational health system.

One of the major advantages of integrating a denominator (the demographics of all the workers followed up by each OP) is the ability to carry out multivariate analyses. These analyses can provide risk assessments which would allow these risks to be monitored and geographical comparisons to be made in France, or other European countries. This would help to accurately identify ill-health related job losses.

The reader should be aware that this study design does not identify work related diseases, neither can it provide a job loads attributable risk, but rather assesses the impact of diseases, work-related or not, on the capacity to maintain the current job.

In our opinion, this must not be considered as a weakness of this study. The mechanisms of the observed pathologies may be partly, completely or not at all work-related. However, it is a delicate

issue to determine if a disease is work-related or not (the work causality) for each individual. Diseases are often multifactorial with personal, professional and extra professional components (e.g., a sub acromial impingement and musculoskeletal disorder). In fact, all data concerning the issue of work causality should be cautiously interpreted. In our study, the outcome is job loss, which is an objective data, rather than the work causality of cases, which requires a judgement. The analysis of the "unfitness for the job", even if it does not allow the work related causality to be determined, allows at-risk groups to be identified and preventative actions to be promoted in order to support the continuation of employment.

Findings

The global one-year incidence of unfitness in our study was 7.8‰. A similar study of ill-health related job losses was previously conducted in 2012 in another occupational health service in the east of France (Dutheil et al., 2016). Dutheil et al. found very similar results. They found that the overall one year incidence of job losses was 7.7 ‰. Dutheil's study confirmed the major impact of MSD and mental ill-health on employment. However, the design of this previous study did not allow multivariate analysis (c.f. above). Our study design allowed multivariate analysis because there was a single data frame for fit and unfit workers, and consequently the possibility to adjust the Odds Ratios based on the age groups, sex, occupation and activity sector, which are strongly associated with job losses. Our findings highlight that 85.7% of ill-health related job losses are related to MSD (47.2%) and mental ill-health (38.4%) (Table 2). The high prevalence of job losses related to MSD (Lederer, Weltle & Weber, 2001; Cherry et al., 2001; Chen, McDonald & Cherry, 2006)and mental ill-health (Lederer, Weltle & Weber, 2001; Cherry, Chen & McDonald, 2006; Reinhardt, Wahrendorf & Siegrist, 2013) have been estimated in other countries. Recent data from

the THOR-GP network (UK – 2015-2016) estimated that 85% of self-reported work related ill-health is caused by these two groups of pathologies (Carder et al., 2013), which is similar to our findings. This supports the relevance of "unfit for the job" as an indicator, even if it does not assess the work related incidence of different pathologies. Moreover, the process of rating a pathology as work related is partly subjective and complex, and may lead to a misclassification.

The Labour Force Survey (LFS) is the Health and Safety Executive's data source, complemented by other sources such as death certificates and reports from doctors (THOR). It estimated the incidences of work related ill health by stress-anxiety-depression and MSD as 690/100,000 workers and 550/100,000 respectively (Health and Safety Executive)

. The incidences were higher than the job loss incidence because all of these cases of work-related ill health did not lead to a classification of "unfit for the job". Stress, anxiety, and depression accounted for 37% of all work related ill health cases in 2015/2016, and MSD accounted for 41% of all work related illnesses. These data suggest that mental ill-health and MSD are not only the two main causes of work related diseases, but are also the two main causes of job loss.

The underlying employment area could not be representative of France as a whole. That is why we didn't extrapolated our findings, even if a previous study (Dutheil), conducted in another region of French, found a very similar incidence of job loss. Moreover, farming and public service employees (and to a certain extent the construction industry) are followed up by specific health services. Further study is needed to assess the ill health related job losses in these specific activity sectors. However, it would be interesting to extrapolate the data based on socio-professional categories to assess the burden of ill health related job loss in France.

291 Musculoskeletal disorders

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293 Our findings highlight the significant increase in the risk of job loss caused by musculoskeletal
294 disorders in workers over 50 years of age. This is a major risk among blue collar workers. It is a
295 particularly worrying situation for people over the age of 50 because the capacity to find a new job
296 in activity sectors where mechanical loads are frequent, and one which is adapted to the potential
297 disability caused by the MSD, may lead to employment problems for the concerned workers and
298 significant social problems. Unfortunately, in our opinion, primary prevention for workplace tasks
299 is probably rarely or insufficiently adapted to the age of the worker. However, maintaining
300 working ability in early old age is essential for sustaining economic growth in Europe (Reinhardt,
301 Wahrendorf & Siegrist, 2013).

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304 Mental ill-health

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306 Our findings highlight the huge impact of mental ill-health on job loss. These diseases are invisible
307 in the national data on occupational diseases (e.g., the recognized occupational diseases), notably
308 because it is probably very difficult to determine work causality. For example, according Wong et
309 al., attribution of mental illness to work is thought to involve the consideration of 18 factors (11
310 workplace factors and 7 personal vulnerability factors) (Wong, Poole & Agius, 2015). In this
311 study, work causality is determined by the OP's own judgement and their knowledge of the
312 workplace. According to French medical insurance data, only a few hundred cases of anxiety or
313 depression are recognized as an occupational disease by the medical insurance.

314 Another important finding is that all workers are concerned. There may be an increased risk for
315 women or older workers, but all socio-professional statuses and activity sectors are impacted by
316 this issue.

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319 Sex

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321 The results highlight the gender inequalities in the face of job loss due to ill-health (Table 2).

322 Dutheil et al. observed similar univariate risks for job loss due to MSD, mental ill-health and
323 all-causes together for female workers (RR= 1.51, 1.70 and 1.51 respectively) (9).

324 This gender inequality issue probably needs particular attention. One reason for such inequality
325 may be that a high proportion of women work in activity sectors with high physical or
326 psychological loads. For example, according the National Statistics Institute, women constitute
327 87% of nurses and 62% of unskilled workers. There are too few cases of job losses in this study
328 (398 cases) to analyse the risks associated with specific occupations matched with sex ratio.
329 However, an extended study (only 17 OPs participated in this study versus over 5,000 OPs in
330 France) could provide more accurate information. A more specific analysis of activity sectors and
331 jobs for the observed population could provide more accurate "indications" concerning these
332 observed data.

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335 Age

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337 Our findings concerning the average age of unfit workers (44.4 years), and the risks of unfitness
338 among workers aged 50 years and older according to the disease groups (Table 2), are similar to
339 the findings of the previous study carried out in 2012 (Dutheil et al., 2016)(9). In this study, the
340 average age of unfit workers was 45.9 years, and the risks of job loss for workers up to the age of
341 50 resulting from a MSD, a mental ill-health and all causes together, were 2.92, 1.38, and 2.51
342 respectively. Not surprisingly, our findings highlight the progressive increase of the odds ratios of
343 job loss with the age of the workers, particularly for MSD.

344 The findings by Alavinia et al., which highlighted the higher relative risk of long term absence due

345 to sickness among those ≥ 50 years old (RR= 2.08 [1.33;3.24]; ref = workers < 40 years old), are
346 consistent with our data (Alavinia et al., 2009). Older workers are a more fragile population, with
347 a higher prevalence of chronic and disabling pathologies leading to long term absence due to
348 sickness and a higher incidence of job loss. Moreover, the combination of a disabling pathology
349 and the loss of a job is a problematic cocktail for professional reintegration. In our opinion, this
350 population is a major priority for primary and secondary preventive actions.
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352 The use of the international ICD-10 classification for the encoding of pathologies that lead to a
353 determination of unfitness would increase the quality and the processing speed of analyses.
354 Unfortunately, the different information systems in the occupational health services do not provide
355 such a possibility at this time. However, a common system would considerably enhance the
356 epidemiological capacity to analyse ill-health related job losses, and increase the processing speed.
357 It would be appropriate to match our findings with other data sources, such as expert-based
358 networks or observations, as we believe that our data are complementary.
359 The population included in our study was limited (50,000 workers). A more significant
360 population would increase the power of the analysis and would allow a more accurate
361 identification of the sub groups of workers, or specific socio-professional categories, at risk of
362 losing their jobs for medical reasons. It would also provide better information concerning
363 prevention targets or further specific studies.
364
365 ***Conclusions***
366 French occupational health systems have an important and cost effective epidemiological
367 capacity. The supervisory authority of the occupational health services, the General Labour
368 Department of the Ministry of Work, should consider promoting such an epidemiological approach
369 based on occupational health service data, which could provide useful, accurate, and reliable
370 information in the field of occupational health. Moreover, occupational health information systems
371 contain accurate and high quality data on workplace analysis, medical records, or

sociodemographic data. Several European countries, such as Belgium, could also collect and analyse similar data (Godderis et al., 2015). For these very reasons, an Occupational Health System Data Analysis network should be promoted.

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457 **What is new in the paper?**
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459 - In addition to a previous study in France (9), we conducted a multivariate analysis of the
460 causes of job loss in order to adjust the Odds Ratios for the age groups, sex, occupation, and
461 activity sectors strongly associated with job loss.
462 - We support the recognition of the French occupational health system as an important and
463 cost effective epidemiological tool.
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Table 1(on next page)

Demographics, company characteristics, and incidence of unfitness for the job

		Employees unfit for the job	Employees fit for the job	One-year Incidence of unfitness ‰
Age (years)	≤30 y	50 (12.6%)	15,298 (30.2%)	3.26
	31-40 y	91 (22.9%)	13,510 (26.7%)	6.70
	41-50 y	98 (24.6%)	12,180 (24.0%)	7.98
	51-60 y	124 (31.2%)	8,165 (16.1%)	14.96
	>60 y	35 (8.8%)	1,512 (3.0%)	22.62
Sex	Men	124 (31.2%)	21,279 (42.0%)	5.79
	Women	274 (68.8%)	29,455 (58.0%)	9.22
Occupation	Higher grade administrative and managerial occupations, higher grade professionals	24 (6.1%)	7,650 (17.0%)	3.13
	Intermediate occupations. Lower supervisors	65 (16.5%)	12,220 (27.2%)	5.29
	White collar workers. lower services, sales and clerical occupations	212 (53.8%)	19,671 (43.7%)	10.66
	Blue collar workers	93 (23.6%)	5,442 (12.1%)	16.80
Workforce	<10	105 (26.4%)	13,000 (25.6%)	8.01
	10-49	138 (34.7%)	16,102 (31.7%)	8.50
	50 - 249	93 (23.4%)	14,503 (28.6%)	6.37
	≥250	57 (14.3%)	7,129 (14.0%)	7.93
Activity sectors (aggregated A10 code)	Manufacturing (BE)	4 (1.0%)	154 (0.3%)	25.31
	Construction (FZ)	0	515 (1.0%)	0
	Wholesale and retail trade, repair of motor vehicles, transportation and storage, accommodation and food service activity (GI)	123 (30.9%)	14,051 (27.7%)	8.68
	Information & communication (JZ)	2 (5.0%)	2,306 (4.6%)	0.87
	Financial & insurance activities (KZ)	9 (2.3%)	2,954 (5.8%)	3.04
	Real estate activities (LZ)	13 (3.3%)	1,350 (2.7%)	9.54
	Professional, scientific and technical activities; administrative and support service activities (MN)	69 (17.3%)	9,696 (19.1%)	7.07
	Public administration, compulsory social security; education; human health and social work activities (OQ)	152 (38.2%)	14,909 (29.4%)	10.09
	Arts, entertainment, repair of household goods & other services (RU)	26 (6.5%)	4,799 (9.5%)	5.39
Overall Sample (number of workers)		398 (100%)	50,734 (100%)	7.78

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Table 2(on next page)

Factors associated with unfitness for the job, for the different causes of unfitness: univariate and multivariate analyses

ORc= crude Odds Ratio; ORa= odds ratio adjusted on age, sex, occupation and industry; OR in bold = OR statistically different of 1.

		Causes of unfitness for the job								
		Musculoskeletal disorders (n=188)			**Psychopathologies (n=153)**			**All causes together (n=398)**		
		ORc[CI95%]	**ORa[CI95%]**	***p***	**ORc[CI95%]**	**ORa[CI95%]**	***p***	**ORc[CI95%]**	**ORa[CI95%]**	***p***
Age (years)	*≤30 y*	1	1		1	1		1	1	
	31-40 y	1.76 [0.97 ; 3.25]	**2.37** [1.35 ; 4.18]		**2.22** [1.34 ; 3.75]	**2.23** [1.36 ; 3.65]		**2.05** [1.46 ; 2.90]	**2.43** [1.70 ; 3.45]	
	41-50 y	**3.14** [1.83 ; 5.57]	**3.81** [2.25 ; 6.45]	<0.001	**1.96** [1.16 ; 3.38]	**1.90** [1.14 ; 3.18]	<0.01	**2.46** [1.74 ; 3.44]	**2.64** [1.86 ; 3.76]	<0.001
	51-60 y	**6.56** [3.94 ; 11.39]	**7.35** [4.40 ; 12.28]		**2.4** [1.38 ; 4.22]	**2.26** [1.32 ; 3.86]		**4.59** [3.31 ; 6.37]	**4.75** [3.37 ; 6.69]	
	>60 y	8.60 [4.22 ; 17.32]	**9.93** [5.06 ; 19.49]		**3.24** [1.26 ; 7.42]	**3.22** [1.43 ; 7.23]		**6.94** [4.52 ; 10.66]	**7.62** [4.85 ; 11.96]	
	≤50 years	1	1	<0.001	1	1	0.07	1	1	<0.001
	>50 years	**3.65** [2.70 ; 4.91]	**3.41** [2.53 ; 4.61]		**1.50** [1.02 ; 2.17]	1.41 [0.98 ; 2.04]		**2.82** [2.29 ; 3.46]	**2.63** [2.13 ; 3.25]	
Sex	**Men**	1	1	<0.001	1	1	0.14	1	1	<0.001
	Women	**1.64** [1.19 ; 2.25]	**1.89** [1.35 ; 2.66]		**1.41** [1.00 ; 1.98]	1.31 [0.92 ; 1.88]		**1.48** [1.19 ; 1.83]	**1.52** [1.21 ; 1.91]	
Occupations	Intermediate occupations. Lower supervisors	1	1	<0.001	1	1	0.52	1	1	<0.001
	Higher grade administrative and managerial occupations, higher grade professionals	***0.11*** *[0.00 ; 0.69]*	*0.12 [0.02 ; 0.88]*		*0.65 [0.34 ; 1.16]*	*0.76 [0.43 ; 1.35]*		***0.59*** *[0.35 ; 0.96]*	*0.66 [0.41 ; 1.06]*	
	White collar workers. lower services, sales and clerical occupations	***4.47*** *[2.59 ; 8.27]*	***3.88*** *[2.25 ; 6.70]*		*1.09 [0.74 ; 1.64]*	*1.10 [0.74 ; 1.64]*		***2.03*** *[1.53 ; 2.72]*	***1.95*** *[1.47 ; 2.60]*	
	Blue collar workers	***9.43*** *[5.3 ; 17.85]*	***8.13*** *[4.52 ; 14.62]*		*1.02 [0.56 ; 1.79]*	*1.17 [0.66 ; 2.07]*		***3.21*** *[2.31 ; 4.49]*	***3.23*** *[2.30 ; 4.54]*	
Activity sectors (aggregated A10 code)	Financial & insurance activities (KZ) Real estate activities (LZ) *n=4326*	1	1	<0.01	1	1	0.25	1	1	0.20
	Wholesale and retail trade, repair of motor vehicles, transportation and storage, accommodation and food service activity (GI)) *n=14174*	**5.26** [2.00;20.23]	***3.65*** *[1.32; 10.1]*		1.01 [0.53;2.06]	*1.05 [0.55; 2.01]*		**1.71** [1.08;2.84]	*1.45 [0.91; 2.32]*	
	Professional, scientific and technical activities; administrative and support service activities (MN) *n=9765*	**4.22** [1.52 ;16.28]	*2.36 [0.83; 6.71]*		0.75 [0.36;1.62]	*0.69 [0.34; 1.39]*		1.39 [0.85;2.37]	*1.01 [0.61;1.65]*	
	Public administration, compulsory social security; education; human health and social work activities (OQ) *n=15061*	**4.33** [1.60;16.42]	*2.33 [0.84;6.44]*		1.38 [0.75;2.73]	*1.16 [0.63;2.12]*		**1.99** [1.27;3.28]]	*1.35 [0.86; 2.13]*	
	Arts, entertainment, repair of household goods & other services (RU) n=4825	2.91 [0.90;12.28]	*1.99 [0.64;6.13]*		0.76 [0.31;1.84]	*0.76 [0.34; 1.70]*		1.06 [0.58;1.97]	*0.85 [0.48; 1.51]*	

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