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Musculoskeletal pain in Europe: role of personal, occupational, and social risk factors [1]

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Appendix 1. Derivation of dimension of the Job Demand Control model.

Since the number of response categories was not the same among items, the following formula was used to give equivalnet weight to each item:

$$\text{new value} = 1 + \frac{(\text{value} - 1)}{(\text{n} - 1)}$$

where n is the number of response categories for a given item. This formula transforms the values of the response categories into new values between 1 and 2.

Cronbach's alphas were 0.51 for skill discretion, 0.70 for job decision-making authority, and 0.59 for job demand.

Job demand (7 item)

A) Does your job involve working at very high speed?						
All of the time [1.00]	Almost all of the time [1.17]	Around ¾ of the time [1.33]	Around half of the time [1.50]	Around ¼ of the time [1.67]	Almost never [1.83]	Never [2.00]
B) Does your job involve working to tight deadlines?						
All of the time [1.00]	Almost all of the time [1.17]	Around ¾ of the time [1.33]	Around half of the time [1.50]	Around ¼ of the time [1.67]	Almost never [1.83]	Never [2.00]

C) You have enough time to get the job done				
Always [1.00]	Most of the time [1.25]	Some-times [1.50]	Rarely [1.75]	Never [2.00]

D) You know what is expected of you at work				
Always [1.00]	Most of the time [1.25]	Some-times [1.50]	Rarely [1.75]	Never [2.00]
E) Over the last 12 months how often has it happened to you that you have worked in your free time in order to meet work demands?				
Nearly every day [1.00]	Once or twice a week [1.25]	Once or twice a month [1.50]	Less often [1.75]	Never [2.00]
F) On the whole, is your pace of work dependent, or not, on the work done by colleagues?				
Yes [1.00]	No [2.00]			
G) How often do you have to interrupt a task you are doing in order to take on an unforeseen task?				
Very often [1.00]	Fairly often [1.33]	Occasionally [1.67]	Never [2.00]	

Job demand = (3-A) + (3-B) + C + D + (3-E) + (3-F) + (3-G)Job skill discretion (6 item)

H) Generally, does your main paid job involve learning new things?	
Yes [1.00]	No [2.00]
I) Generally, does your main paid job involve complex tasks?	
Yes [1.00]	No [2.00]
J) Generally, does your main paid job involve solving unforeseen problems on your own?	
Yes [1.00]	No [2.00]
K) Generally, does your main paid job involve monotonous tasks?	
Yes [1.00]	No [2.00]
L) Over the past 12 months, have you undergone any of types of training to improve your skills or not - Training paid for or provided by your employer or by yourself self-employed?	
Yes [1.00]	No [2.00]
M) Does your job involve rotating tasks between yourself and colleagues?	
Yes [1.00]	No [2.00]

Job skill discretion = H + I + J + (3-K) + L + M

Job decision-making authority (3 item)

N) Are you able to choose or change your order of tasks?				
Yes [1.00]			No [2.00]	
O) Are you able to choose or change your methods of work?				
Yes [1.00]			No [2.00]	
P) You can influence decisions that are important for your work				
Always [1.00]	Most of the time [1.25]	Some-times [1.50]	Rarely [1.75]	Never [2.00]

Job decision-making authority = (3-N) + (3-O) + (3-P)

Appendix 2. National socioeconomic risk factors

Data on national socioeconomic risk factors were abstracted from statistics published by eurostat (http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/, accessed on 7 September 2012). Whenever possible, data from 2010 – the year of the fifth European Working Conditions Survey – were obtained. However, where data were unavailable for 2010, the most recent year with complete data was used. Five countries with missing data (Albania, Croatia, former Yugoslav Republic of Macedonia, Montenegro, and Turkey) were excluded from the analysis of country-level risk factors.

Description of the National socioeconomic risk factors

People at risk of poverty or social exclusion

The Europe 2020 strategy promotes social inclusion, in particular through the reduction of poverty, by aiming to lift at least 20 million people out of the risk of poverty and social exclusion. This indicator corresponds to the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity. Persons are only counted once even if they are present in several sub-indicators. At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Material deprivation covers indicators relating to economic strain and durables. Severely materially deprived persons have living conditions severely constrained by a lack of resources. They experience at least 4 out of 9 following deprivations items: cannot afford to: i) to pay rent or utility bills, ii) keep home adequately warm, iii) meet unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone.

People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) worked less than 20% of their total work potential during the past year. Frequencies are expressed as percentage of total population. Year of EWCS (2010).

In-work at-risk-of-poverty rate

The proportion of persons who are at work and have an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Year of EWCS (2010).

GDP per capita in PPS

The volume index of gross domestic product per capita in Purchasing Power Standards (PPS) is expressed in relation to the European Union (EU-27) average, set to equal 100. Year of EWCS (2010).

Material Deprivation rate

This indicator is defined as the percentage of population with an enforced lack of at least three out of nine material deprivation items in the 'economic strain and durables' dimension. It is expressed as percentage of total population. Year of EWCS (2010).

Distribution of income (Gini coefficient)

The Gini coefficient is defined as the relationship of cumulative shares of the population arranged according to the level of equivalised disposable income, to the cumulative share of the equivalised total disposable income received by them. The Gini coefficient varies between 0 (if everyone gets an equal share of total income) and 100 (if all income goes to one individual only). Year of EWCS (2010).

Hospitals beds

The indicator, “hospital beds” provides information on health care capacity, i.e. on the maximum number of patients who can be treated by hospitals. Total hospital beds are all hospital beds which are regularly maintained and staffed and immediately available for the care of admitted patients; both occupied and unoccupied beds are included. Hospitals are defined according to the classification of health care providers of the System of Health Accounts (SHA); all public and private hospitals should be covered. Data are expressed as number of beds per 100.000 inhabitants. Year 2007, last with complete data.

School expectancy

School expectancy corresponds to the expected years of education over a lifetime and is calculated from the single-year enrolment rates for each age. This type of estimate will be accurate if current patterns of enrolment continue in the future. Estimates are based on headcount data. As an example, school expectancy for the age of 10 would be one year if all 10-year-old students (in the year of the data collection) were enrolled. If only 50 % of 10-year-olds were enrolled, school expectancy for the age of 10 would be half a year. Year of EWCS (2010).

Public expenditure on labour market policies

Expenditure on labour market policies (LMP) is limited to public interventions which are explicitly targeted at groups of persons with difficulties in the labour market: the unemployed, the employed at risk of involuntary job loss and inactive persons who would like to enter the labour market. Data are expressed as percentage of gross domestic product. Year 2007, last with complete data (subcategories).

Public expenditure on labour market policies, cat 1

LMP services (category 1) covers the costs of the public employment service, together with any other publicly funded services for job-seekers. Year 2007, last with complete data (subcategories).

Public expenditure on labour market policies, categories 2-7

LMP measures (categories 2-7) covers activation measures for the unemployed and other target groups, including training, job rotation and job sharing, employment incentives, supported employment and rehabilitation, direct job creation, and start-up incentives. Year 2007, last with complete data (subcategories).

Public expenditure on labour market policies, categories 8-9

LMP supports (categories 8-9) covers out-of-work income maintenance and support (mostly unemployment benefits) and early retirement benefits. Year 2007, last with complete data (subcategories).

Expenditure on social protection

Expenditure on social protection includes: social benefits, which consist of transfers, in cash or in kind, to households and individuals to relieve them of the burden of a defined set of risks or needs; administration costs, which represent the costs charged to the scheme for its management and administration; and other miscellaneous expenditure by social protection schemes (payment of property income and other). It is calculated in current prices. Data are expressed as percentages of GDP. Year 2008, last with complete data.

Public expenditure on education

This indicator is defined as total public expenditure on education, expressed as a percentage of GDP. Generally, the public sector funds education either by bearing directly the current and capital expenses of educational institutions or by supporting students and their families with scholarships and public loans as well as by transferring public subsidies for educational activities to private firms or non-profit organisations. Both types of transaction together are reported as total public expenditure on education. Year 2005, last with complete data.

Fatal accidents at work – index

The number of fatal accidents at work per 100 thousand persons in employment (1998 = 100). A fatal accident at work is a discrete occurrence in the course of work with physical or mental harm, leading to death within one year of the accident. It excludes accidents on the way to or from work, occurrences having only a medical origin, and occupational diseases. Year 2006, last available.

Fatal accidents at work – rate

This is the rate of fatal accidents at work directly standardized for the distribution of employment across sectors with different risk, with weighting defined by the overall distribution in the European Union. Year 2005, last with complete data.

Healthy life expectancy at birth. The indicator, Healthy Life Years (HLY) at birth, measures the number of years that a person at birth is expected to live in good perceived health. HLY is a health expectancy indicator which combines information on mortality and morbidity. The data required are the age-specific prevalence (proportions) of the population in healthy and unhealthy conditions and age-specific mortality. A healthy

condition is defined by the absence of limitations in functioning/disability. The indicator is calculated separately for males and females. The indicator is also called disability-free life expectancy (DFLE). Life expectancy at birth is defined as the mean number of years still to be lived by a person at birth, if subject throughout the rest of his or her life to current mortality conditions. Data are expressed as the mean of healthy life expectancy at birth for males and females. Year of EWCS (2010).

Self reported unmet need for medical examination or treatment

This indicator is defined as the proportion of the population perceiving an unmet need for medical examination or treatment. Reasons include problems of access (could not afford to, waiting list, too far to travel) or other (could not take time, fear, wanted to wait and see, didn't know any good doctor or specialist, other). The indicator should not be used for a quality assessment of the different national health care systems, but only in its restricted sense: it is a subjective perceived experience or opinion of the respondent and as in all general population health surveys perceptions include a cultural factor. Year of EWCS (2010).

Unemployment rate

Unemployment rates represent unemployed persons as a percentage of the labour force. The labour force is the total number of people employed and unemployed. Year of EWCS (2010).

Appendix 2, table 1. Distribution of National socioeconomic risk factors among 28 European Countries.

	Statistic						
Country attribute	Mean	SD	Min	25th centile	Median	75th centile	Max
People at risk of poverty or social exclusion	23.6	7.8	14.4	17.7	21.2	27.7	41.6
In-work at-risk-of-poverty rate	7.8	3.3	3.7	5.3	6.7	9.7	17.3
GDP per capita (PPS)	101	46	44	69	97	121	271
Material Deprivation rate	20.2	14.0	3.9	10.9	15.4	25.8	55.6
Distribution of income (Gini coefficient)	29.3	4.0	23.6	25.7	29.2	33.1	36.9
Hospitals beds per 100.000 inhabitants	563.9	165.2	286.4	382.3	602.5	697.1	823.9
School expectancy (years)	17.5	1.4	15	16.5	17.7	18.3	20.5
Public expenditure on labour market policies, cat 1 (% of GDP)	0.13	0.09	0.02	0.06	0.11	0.18	0.34
Public expenditure on labour market policies, categories 2-7 (% of GDP)	0.38	0.29	0.03	0.11	0.37	0.57	1.02

Public expenditure on labour market policies, categories 8-9 (% of GDP)	0.70	0.54	0.10	0.29	0.49	1.24	2.01
Expenditure on social protection (% of GDP)	22.4	5.5	12.7	18.2	22.3	27.9	31.0
Public expenditure on education (% of GDP)	5.3	1.2	3.5	4.3	5.3	5.8	8.3
Fatal accidents at work – index	81	24	37	64	80	93	149
Fatal accidents at work – rate	3.4	1.6	1.4	2.1	3.0	4.2	7.2
Healthy life expectancy at birth: females (years)	62.5	5.0	52.1	58.3	62.5	66.4	71.6
Healthy life expectancy at birth: males (years)	61.5	5.3	52.3	57.8	62.0	65.1	71.7
Healthy life expectancy at birth: mean (years)	61.9	5.0	52.2	58.1	62.1	65.2	71.3
Self reported unmet need for medical examination or treatment	2.1	3.2	0	0.3	0.8	2.5	13.5
Unemployment rate	9.9	4.6	3.6	7.2	8.4	12.3	20.1

Abbreviations: GDP, gross domestic product; Max, maximum; Min, minimum; PPS, purchasing power standards; SD, standard deviation.

Appendix 2, table 2. Pairwise correlations between national socioeconomic risk factors. Pearson's correlation coefficients.

	People at risk of poverty or social exclusion	In-work at-risk-of-poverty rate	GDP per capita (PPS)	Material Deprivation rate	Distribution of income (Gini coefficient)	Hospitals beds per 100.000 inhabitants	School expectancy (years)	Public expenditure on labour market policies, cat 1	Public expenditure on labour market policies, categories 2-7	Public expenditure on labour market policies, categories 8-9	Expenditure on social protection (% of GDP)	Public expenditure on education (% of GDP)	Fatal accidents at work – index	Fatal accidents at work – rate	Healthy life expectancy at birth: mean (years)	Self reported unmet need for medical examination or treatment	Unemployment rate
People at risk of poverty or social exclusion	1																
In-work at-risk-of-poverty rate	0.61	1															
GDP per capita (PPS)	-0.61	-0.17	1														
Material Deprivation rate	0.92	0.43	-0.73	1													
Distribution of income (Gini coefficient)	0.75	0.70	-0.40	0.55	1												
Hospitals beds per 100.000 inhabitants	0.18	-0.12	-0.13	0.32	-0.02	1											

School expectancy (years)	-0.26	-0.12	0.17	-0.32	-0.17	-0.03	1										
Public expenditure on labour market policies, cat 1	-0.45	-0.45	0.26	-0.51	-0.28	-0.04	0.32	1									
Public expenditure on labour market policies, categories 2-7	-0.40	-0.25	0.42	-0.54	-0.31	-0.19	0.60	0.52	1								
Public expenditure on labour market policies, categories 8-9	-0.39	-0.25	0.34	-0.53	-0.22	-0.05	0.48	0.51	0.86	1							
Expenditure on social protection (% of GDP)	-0.57	-0.33	0.44	-0.69	-0.38	-0.29	0.43	0.63	0.71	0.70	1						
Public expenditure on education (% of GDP)	-0.45	-0.46	0.19	-0.43	-0.44	-0.27	0.38	0.27	0.43	0.30	0.39	1					
Fatal accidents at work – index	0.23	0.10	-0.36	0.27	0.03	-0.14	-0.03	0.03	-0.11	-0.20	-0.07	0.13	1				
Fatal accidents at work – rate	0.52	0.38	-0.44	0.56	0.45	0.24	-0.28	-0.44	-0.42	-0.29	-0.59	-0.10	0.13	1			
Healthy life expectancy at birth: mean (years)	-0.20	0.00	0.41	-0.36	-0.05	-0.38	0.09	0.13	0.22	0.02	0.31	0.29	-0.13	-0.25	1		

Self reported unmet need for medical examination or treatment	0.77	0.51	-0.45	0.76	0.54	0.22	-0.24	-0.42	-0.36	-0.35	-0.51	-0.29	0.13	0.38	-0.18	1	
Unemployment rate	0.51	0.37	-0.51	0.45	0.64	0.04	0.10	-0.31	-0.21	-0.17	-0.43	-0.34	0.02	0.32	-0.32	0.29	1

Appendix 3, table 1. Associations between musculoskeletal pain in past year and personal characteristics. Fifth European Working Conditions Survey, 34 European countries, 2010.

	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
Characteristic	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
Age (years)												
15 - 24	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
25 - 34	1.13	1.02−1.26		1.09	0.98−1.22		1.08	0.98−1.20		1.17	1.04−1.31	
35 - 44	1.24	1.12−1.37		1.19	1.07−1.32		1.18	1.06−1.30		1.30	1.17−1.46	
45 - 54	1.43	1.29−1.58		1.31	1.18−1.46		1.34	1.21−1.48		1.49	1.33−1.67	
55 - 64	1.54	1.39−1.		1.38	1.23−1.5		1.4	1.26−1.5		1.54	1.37−1.7	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
		72			5		1	7			4	
Highest educational level												
primary	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
secondary	0.97	0.92−1.03		0.95	0.89−1.01		0.98	0.92−1.04		0.96	0.90−1.02	
tertiary	0.87	0.80−0.95		0.91	0.84−0.98		0.89	0.82−0.97		0.93	0.86−1.00	
Socioeconomic class (ESEC)												
salariat	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
intermediate	1.00	0.89−1.		1.04	0.93−1.1		0.9	0.88−1.1		1.07	0.96−1.1	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
		11			6		8	0			9	
working class	0.98	0.87−1.11		1.07	0.94−1.22		1.01	0.89−1.15		1.07	0.94−1.22	
Housework or cooking												
never, occasionally	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
every day or every second day for 1 hour or less	1.06	1.00−1.12		1.09	1.00−1.18		1.08	1.02−1.14		1.08	0.99−1.17	
more than one hour per day	1.05	0.97−1.14		1.15	1.06−1.25		1.10	1.02−1.19		1.13	1.04−1.23	
Gardening and repairs												
never, occasionally	1.00	Ref.		1.00	Ref.		1.0	Ref.		1.00	Ref.	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers (n =18,377)			Female workers (n = 17,099)			Male workers (n =)			Female workers (n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
							0					
twice per week	1.04	0.98−1.09		1.01	0.95−1.07		1.04	0.99−1.11		1.05	1.00−1.12	
everyday or every second day	1.00	0.93−1.07		1.02	0.95−1.09		1.02	0.96−1.10		1.03	0.96−1.10	
Number of somatic symptoms in past year												
0	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
1	1.78	1.68−1.89		1.91	1.79−2.04		1.90	1.79−2.02		1.91	1.79−2.04	
≥2	2.35	2.22−2.48		2.53	2.37−2.69		2.58	2.43−2.73		2.60	2.44−2.77	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
Job demand-control												
low strain job	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
active job	1.08	1.01−1.15		1.07	1.00−1.15		1.10	1.03−1.18		1.07	1.00−1.14	
passive job	0.97	0.90−1.04		0.96	0.90−1.03		0.99	0.92−1.07		0.94	0.88−1.01	
high strain job	1.05	0.98−1.13		1.07	1.00−1.15		1.08	1.01−1.16		1.04	0.97−1.12	
Carrying or moving heavy loads												
never	1.00	Ref.		1.00	Ref.		1.0	Ref.		1.00	Ref.	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
							0					
sometimes	1.15	1.08−1.23		1.12	1.05−1.18		1.19	1.11−1.27		1.14	1.07−1.20	
often	1.28	1.18−1.38		1.20	1.10−1.31		1.30	1.19−1.41		1.20	1.10−1.31	
always	1.38	1.27−1.50		1.19	1.09−1.31		1.36	1.25−1.48		1.21	1.10−1.33	
Lifting or moving people												
never	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
sometimes	0.95	0.88−1.03		0.95	0.88−1.02		0.95	0.88−1.03		0.95	0.88−1.03	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers (n =18,377)			Female workers (n = 17,099)			Male workers (n =)			Female workers (n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
often	0.89	0.73−1.08		1.16	1.03−1.31		0.95	0.78−1.15		1.13	1.01−1.28	
always	0.98	0.84−1.15		1.10	1-00−1.22		1.04	0.89−1.22		1.07	0.97−1.19	
Standing												
never	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
sometimes	1.03	0.95−1.13		1.02	0.95−1.10		1.03	0.95−1.13		0.98	0.91−1.06	
often	1.05	0.96−1.16		1.00	0.92−1.09		1.04	0.94−1.15		0.97	0.89−1.06	
always	1.08	0.99−1.		1.06	0.98−1.1		1.0	0.98−1.1		1.02	0.94−1.1	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
		19			5		8	9			1	
Vibrations												
never	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
sometimes	1.04	0.98−1.11		1.03	0.96−1.09		1.04	0.97−1.11		1.05	0.98−1.12	
often	1.11	1.03−1.20		1.08	0.96−1.21		1.13	1.04−1.22		1.07	0.96−1.21	
always	1.08	1.00−1.16		1.06	0.96−1.18		1.08	1.00−1.17		1.07	0.97−1.18	
Repetitive hand or arm movements												

	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
Characteristic	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
never	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
sometimes	1.03	0.95−1.11		1.04	0.97−1.12		1.14	1.05−1.24		1.08	1.00−1.17	
often	1.10	1.02−1.19		1.12	1.04−1.21		1.25	1.14−1.35		1.18	1.10−1.27	
always	1.17	1.09−1.26		1.23	1.15−1.32		1.37	1.26−1.47		1.32	1.24−1.42	
Working with computers												
never	1.00	Ref.		1.00	Ref.		1.00	Ref.		1.00	Ref.	
sometimes	1.01	0.95−1.		0.98	0.92−1.0		0.9	0.90−1.0		0.97	0.91−1.0	

Characteristic	Back pain						Neck/upper limb pain					
	Male workers			Female workers			Male workers			Female workers		
	(n =18,377)			(n = 17,099)			(n =)			(n = 17,094)		
	PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
		08			5		6	3			5	
often	0.90	0.82−0.98		0.94	0.86−1.03		0.87	0.79−0.96		0.96	0.88−1.06	
always	0.96	0.89−1.04		0.96	0.89−1.03		0.92	0.85−1.00		0.97	0.89−1.04	

Abbreviations: 95%CI, 95% confidence interval; ESEC, European socioeconomic classification; PR, prevalence ratio; Ref., reference category.

[a]Estimates from multivariate Poisson regression models additionally adjusted by occupational group (2-digit ISCO-88) and with random intercept on country

Appendix 3, table 2. Associations between musculoskeletal pain in past year and occupational groups.Fifth European Working Conditions Survey, 34 European countries, 2010

Occupations (2-digit ISCO-88)		Back pain					Neck/upper limb pain				
		Male workers		Female workers			Male workers		Female workers		
		(n =18,377)		(n = 17,099)			(n = 18,370)		(n = 17,094)		
		PR	95%CI	PR	95%CI		PR	95%CI	PR	95%CI	
1	Armed forces	1.11	0.80−1.54	0.89	0.37−2.16		1.13	0.8−1.58	0.81	0.33−1.95	
11	Legislators and senior officials	0.91	0.58−1.44	1.41	0.91−2.16		0.82	0.5−1.33	1.41	0.94−2.12	
12	Corporate managers	1.09	0.89−1.32	1.09	0.90−1.33		1.15	0.94−1.4	1.19	0.99−1.42	
13	General managers	1.03	0.85−1.25	1.05	0.89−1.24		1.07	0.87−1.31	1.02	0.86−1.20	
21	Physical, mathematical, engineering science professionals	1.17	0.96−1.43	1.11	0.86−1.43		1.08	0.87−1.33	1.04	0.81−1.34	

Occupations (2-digit ISCO-88)		Back pain					Neck/upper limb pain				
		Male workers			Female workers		Male workers			Female workers	
		(n =18,377)			(n = 17,099)		(n = 18,370)			(n = 17,094)	
		PR	95%CI		PR	95%CI	PR	95%CI		PR	95%CI
22	Life science and health professional	1.21	0.94−1.55		1.19	1.01−1.39	1.09	0.83−1.41		1.09	0.94−1.28
23	Teaching professionals	1.00	Ref.		1.00	Ref.	1.00	Ref.		1.00	Ref.
24	Other professionals	1.23	1.01−1.51		1.15	1.00−1.33	1.12	0.9−1.38		1.18	1.03−1.36
31	Physical and engineering science associate professionals	1.13	0.94−1.37		1.18	0.94−1.48	1.15	0.95−1.4		1.12	0.90−1.40
32	Life science and health associate professionals	1.31	0.99−1.73		1.12	0.97−1.29	1.24	0.92−1.66		1.13	0.98−1.29
33	Teaching associate professionals	1.09	0.77−1.55		1.30	1.06−1.58	1.32	0.94−1.85		1.16	0.95−1.41

Occupations (2-digit ISCO-88)		Back pain						Neck/upper limb pain					
		Male workers			Female workers			Male workers			Female workers		
		(n =18,377)			(n = 17,099)			(n = 18,370)			(n = 17,094)		
		PR	95%CI		PR	95%CI		PR	95%CI		PR	95%CI	
34	Other associate professionals	1.10	0.90−1.34		1.07	0.92−1.24		1.19	0.97−1.45		1.09	0.94−1.26	
41	Office clerks	1.19	0.96−1.47		1.09	0.92−1.28		1.13	0.91−1.41		1.05	0.89−1.24	
42	Customer services clerks	0.98	0.73−1.32		1.04	0.85−1.26		0.95	0.7−1.3		1.09	0.89−1.32	
51	Personal and protective services workers	1.11	0.89−1.37		1.14	0.96−1.34		1.06	0.85−1.32		1.08	0.91−1.27	
52	Models, salespersons and demonstrators	1.09	0.87−1.37		1.07	0.91−1.27		1.02	0.8−1.29		0.98	0.83−1.17	
61	Market-oriented skilled agricultural and fishery workers	1.30	1.04−1.62		1.22	1.00−1.49		1.28	1.02−1.6		1.14	0.93−1.39	

Occupations (2-digit ISCO-88)		Back pain					Neck/upper limb pain				
		Male workers			Female workers		Male workers			Female workers	
		(n =18,377)			(n = 17,099)		(n = 18,370)			(n = 17,094)	
		PR	95%CI		PR	95%CI	PR	95%CI		PR	95%CI
71	Extraction and building trades workers	1.30	1.06−1.60		1.06	0.61−1.83	1.26	1.02−1.56		1.09	0.64−1.86
72	Metal, machinery and related trades workers	1.22	0.99−1.51		0.98	0.67−1.42	1.13	0.91−1.4		0.94	0.64−1.37
73	Precision, handicraft, printing and related trades workers	1.18	0.87−1.61		1.13	0.81−1.58	1.27	0.94−1.73		1.21	0.88−1.67
74	Other craft and related trades workers	1.23	0.97−1.55		1.22	1.00−1.49	1.14	0.89−1.45		1.16	0.94−1.42
81	Stationary-plant and related operators	1.09	0.82−1.45		0.86	0.57−1.31	1.15	0.86−1.53		0.84	0.55−1.28
82	Machine operators and assemblers	1.14	0.91−1.44		1.08	0.88−1.32	1.13	0.9−1.43		1.08	0.88−1.32

Occupations (2-digit ISCO-88)		Back pain					Neck/upper limb pain				
		Male workers			Female workers		Male workers			Female workers	
		(n =18,377)			(n = 17,099)		(n = 18,370)			(n = 17,094)	
		PR	95%CI		PR	95%CI	PR	95%CI		PR	95%CI
83	Drivers and mobile-plant operators	1.41	1.13−1.75		1.15	0.78−1.69	1.27	1.01−1.58		0.94	0.63−1.42
91	Sales and services elementary occupations	1.19	0.96−1.49		1.18	0.99−1.40	1.07	0.85−1.35		1.07	0.90−1.27
92	Agricultural, fishery and related labourers	1.36	1.03−1.80		1.18	0.87−1.60	1.4	1.06−1.85		1.17	0.87−1.59
93	Labourers in mining, construction, manufacturing, transport	1.23	0.98−1.54		1.02	0.79−1.32	1.2	0.95−1.51		1.04	0.81−1.35

Abbreviations: 95%CI, 95% confidence interval; PR, prevalence ratio; Ref., reference category.

[a]Estimates from Poisson regression models with random intercept on country and adjusted by age class, socioeconomic class, housework or cooking, gardening and repairs, number of somatic symptoms in past year, job demand-control, carrying or moving loads, lifting or moving people, standing, vibrations, repetitive hand or arm movements, and working with computers.