

# Effect of economic recession on psychosocial working conditions by workers' nationality

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**Background:** Several publications have documented the effects of economic recessions on health. However, little is known about how economic recessions influence working conditions, especially among vulnerable workers.

**Objective:** To explore the effects of 2008 economic crisis on the prevalence of adverse psychosocial working conditions among Spanish and foreign national workers.

**Methods:** Data come from the 2007 and 2011 Spanish Working Conditions Surveys. Survey year, sociodemographic, and occupational information were independent variables and psychosocial factors exposures were dependent variables. Analyses were stratified by nationality (Spanish versus foreign). Prevalence and adjusted prevalence ratios (aPRs) of psychological job demands, job control, job social support, physical demands and perceived job insecurity were estimated using Poisson regression.

**Results:** The Spanish population had higher risk of psychological and physical job demand (aPR = 1.07, 95% CI=[1.04–1.10] and aPR=1.05, 95% CI=[1.01–1.09], respectively) in 2011 compared to 2007. Among both Spanish and foreign national workers, greater aPR were found for job loss in 2011 compared to 2007 (aPR=2.47, 95% CI=[2.34–2.60]; aPR=2.44, 95% CI=[2.15–2.77], respectively).

**Conclusion:** The 2008 economic crisis was associated with a significant increase in physical demands in Spanish workers and increased job insecurity for both Spanish and foreign workers.

**Keywords:** Economic recession, Immigration, Occupational exposures, Psychosocial factors, Spain

## Introduction

Spain was one of the fastest growing economies in Europe during the 1990s, attracting many foreign workers. However, economic growth ended with the 2008 financial crisis. Subsequently, employment rates decreased sharply as a result of layoffs and business closure. The unemployment rate increased from 8.3% in 2007 to 25% in 2012.<sup>1</sup> Several publications have documented effects of the economic recession on health in Spain<sup>2,3</sup> and in other countries.<sup>4,5</sup> However, little is known about the potential changes in working conditions during the economic crisis. In the context of labor market uncertainty and limited employment opportunities, the study of psychosocial risks at work deserves special attention.

In the United Kingdom, the onset of an economic recession was associated with adverse psychosocial working conditions, prevalence of work-related stress

and stress-related sickness absence.<sup>6</sup> In addition, exposure to negative psychosocial conditions at work may be greater during a time of recession.<sup>6</sup> In Taiwan, Tsai and Chan found that in a population of financial and legal sector workers, the 2008 economic crisis had a significant impact on psychosocial work stress, although impact differed depending on workload and job insecurity.<sup>7</sup>

In Spain, foreign workers were significantly affected by the crisis,<sup>8</sup> which had a large impact on low-skilled workers and those with temporary, flexible, or no-contract employment.<sup>9</sup> Furthermore, job insecurity may influence foreign workers to accept lower wages and poorer working conditions in an attempt to retain their jobs.<sup>9</sup> In addition, foreign workers often lack family and other social networks that may provide emotional support and financial assistance.

To our knowledge, no studies have explored the relationship between the 2008 economic crisis and changes in psychosocial working conditions among Spanish and

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foreign national workers. In this study, we assess whether the prevalence of adverse psychosocial working conditions changed for Spanish and foreign workers between 2007 (pre-economic recession) and 2011 (posteconomic recession).

## Methods

### Study sample

The study was based on the sixth and seventh editions of the Spanish Survey of Working Conditions (SSWC).<sup>10</sup> These cross-sectional surveys are representative of the Spanish working population and use a multi-stage random sample design. A total of 11 054 (sixth SSWC) and 8892 (seventh SSWC) people were interviewed at home between December 2006–April 2007 and October 2010–February 2011, respectively. For this analysis, only workers employed at the time of the interview were included in the analyses ( $n=10\,402$  in 2007 and  $n=8,438$  in 2011).

### Variables

Survey year (2007 and 2011) was the independent variable. We adjusted for sociodemographic variables unlikely to be linked to the economic crisis in order to correct the potential differences between the two editions of the survey. These variables included: sex, age, and education. Other occupational information included economic activity (service versus nonservice), employment status, and occupational social class. Nationality was defined as the status of belonging to a particular nation, whether by birth or naturalization (Spanish versus foreign). Analyses were stratified by nationality.

### Psychosocial factor exposures

Psychological job demands (measured as the sum of seven items), job control (measured as the sum of six items), job social support (measured as the sum of two items), physical demands (measured as the sum of eight items), and perceived job insecurity (one item) were dependent variables in our analyses (see Appendix 1). For all items, response options were presented using 5-point Likert scales ranging from highest to lowest frequency of exposure. For each scale, a total score was calculated based on the sum of ratings. Scores were then dichotomized based on the median, with values equal to or above the median classified as adverse psychosocial factor exposures.<sup>11</sup> Cronbach's coefficient alpha ( $\alpha$ ) showed internal consistency to be satisfactory:  $\alpha=0.71$  for psychological demands,  $\alpha=0.87$  for job control,  $\alpha=0.73$  for job social support, and  $\alpha=0.77$  for physical demands.

### Statistical analysis

Descriptive statistics were used to determine the prevalence of adverse psychosocial factor exposures that was estimated for each year and nationality. Chi-square tests

were used to compare the differences for all exploratory variables between the years 2007 and 2011 by nationality. Adjusted prevalence ratios (aPR) and their 95% confidence intervals (95% CI) were calculated by year and nationality using the year 2007 as the reference category. Adjustments to correct for potential differences between survey year that were unlikely due to the economic crisis were made for sex, age, educational level, economic activity, occupational social class, and employment status using a Poisson regression with robust error variance. These covariates were selected according previous research in the area of inequalities in health. Sampling weights were applied to reflect unequal sample inclusion probabilities and to compensate for differential nonresponse and frame undercoverage. All analysis were performed using Stata version 12.<sup>12</sup>

## Results

Foreign workers made up a smaller proportion of the workforce in Spain in 2011 compared to 2007 (9.3% and 12.7%, respectively). Foreign workers were significantly younger than Spanish workers. No changes in the distribution of education were observed for foreign workers between the 2 years, but the proportion of workers with a low level of education increased among Spanish nationals workers. In terms of employment status, there were significant changes in the composition of the workforce between 2007 and 2011: in both populations, there was a decrease in permanently employed workers and an increase in temporary and self-employed workers. In terms of occupational social class, the distribution of foreign workers has changed little between both years. However, in the Spanish workforce, the proportion of manual workers increased from 38.8% to 46.8% (Table 1).

Spanish national workers reported greater psychological job demands than foreign nationals, and the prevalence increased between 2007 and 2011 (51.95% versus 57.58%) (Table 2). Low job control, low social support, and high physical demands were more prevalent among foreign workers compared to Spanish nationals. Among both Spanish and foreign national, job insecurity increased between 2007 and 2011.

Spanish nationals reported higher psychological job demands in 2011 than in 2007 (aPR=1.07, 95% CI=[1.04–1.10]). There was no significant difference in psychological job demands in foreign workers between 2007 and 2011 (Table 2).

However, Spanish nationals reported less job control and less social support in 2011 compared to 2007 (Table 2) (aPR=0.97, 95% CI=[0.94–1.00] for low job control; and aPR=0.85, 95% CI=[0.82–0.89] for low social support). No significant differences were found in social support and job control for foreign national

**Table 1** Distribution of sociodemographic and occupational characteristics in a sample of Spanish and foreign workers in Spain, 2007 and 2011

	Spanish (n=16 732)			Foreign (n=2108)		
	Year 2007 (n=9.080)	Year 2011 (n=7.652)	P-value	Year 2007 (n=1.322)	Year 2011 (n=786)	P-value
	%	%		%	%	
Sex			<0.010**			0.044
Male	59.7	54.1		59.3	54.7	
Female	40.3	45.9		40.7	45.3	
Age			<0.001***			<0.001***
16–24	9.0	3.1		10.8	3.6	
25–34	28.3	20.1		40.9	34.5	
35–44	30.6	32.6		30.0	36.6	
45–54	21.3	29.2		13.5	19.0	
>54	10.9	15.0		4.8	6.3	
Educational level (years of education)			<0.001***			0.746
6–12	23.1	29.1		25.2	24.9	
13–18	37.9	36.6		41.0	42.7	
19+	39.1	34.4		33.8	32.4	
Employment status			<0.001***			<0.010**
Permanent employee with social security	59.8	67.1		49.7	56.1	
Temporary employee with social security	20.1	14.7		37.4	29.1	
Self-employee without workers	14.5	13.9		10.2	11.2	
Self-employee with workers	5.6	4.3		2.7	3.6	
Economic activity			<0.001***			<0.001***
Services	65.9	75.1		60.8	73.9	
Nonservices	34.1	24.9		39.2	26.3	
Occupational social class			<0.001***			0.226
Nonmanual	61.2	53.2		82.6	80.3	
Manual	38.8	46.8		17.5	19.7	

**Table 2** Prevalence and aPR of exposure to work factors exposures in Spanish and foreign workers in Spain, 2007 and 2011

	Year	Spanish			Foreign		
		P	aPR	95% CI	P	aPR	95% CI
Psychological job demand	2007	51.95	1 (Ref.)		43.74	1 (Ref.)	
	2011	57.58	1.07	1.04–1.10***	45.38	1.01	0.90–1.12
Job control	2007	48.87	1 (Ref.)		60.24	1 (Ref.)	
	2011	46.74	0.97	0.94–1.00*	59.94	1.09	0.97–1.13
Social support	2007	47.07	1 (Ref.)		52.43	1 (Ref.)	
	2011	39.55	0.85	0.82–0.89***	51.04	0.98	0.88–1.10
Physical demands	2007	42.96	1 (Ref.)		58.70	1 (Ref.)	
	2011	40.38	1.05	1.01–1.09*	52.94	0.99	0.90–1.09
Job insecurity	2007	22.40	1 (Ref.)		28.78	1 (Ref.)	
	2011	50.45	2.47	2.34–2.60***	64.21	2.44	2.15–2.77***

P: prevalence (per 100 individuals) of high psychological job demand, low job control, low social support, high physical demands, and perceived job insecurity, respectively; aPR: adjusted prevalence ratio by sex, age, educational level, economic activity, occupational social class and employment status; 95% CI: 95% confidence intervals; \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .

workers. Both Spanish and foreign national workers reported decreased physical demands in 2011, although after adjustment for explanatory variables, there was an increased risk in physical demands observed in the Spanish national workforce (aPR = 1.05, 95% CI = [1.01–1.09] for Spanish; and aPR = 0.99, 95% CI = [0.90–1.09] for foreign). Finally, the greatest aPRs were found for job loss in Spanish and foreign workers in 2011 (aPR = 2.47, 95% CI = [2.34–2.60]; aPR = 2.44, 95% CI = [2.15–2.77], respectively).

## Discussion

This is the first study to examine changes in exposure to adverse psychosocial working conditions experienced by Spanish and foreign national workers before and after the 2008 economic recession. We found that among Spanish national workers, the crisis was associated with a significant increase in physical demands, and for both the Spanish and foreign national workforce, more than twofold increase in job insecurity. At the same time, the crisis was associated with reduction in the differences between Spanish and foreign national workers, especially

in physical demand, although foreign national workers show a higher overall prevalence for psychosocial working conditions, including low job control, low social support, physical demands, and job insecurity. These results are in line with other studies that show a greater risk of exposure to adverse psychosocial occupational factors in the foreign versus native workforce, even in times of economic stability.<sup>11,12</sup>

The high risk of physical demand may be explained by the response of many firms to the crisis was to increase workload, extend the workday, and/or limited contract renewal and hiring. High physical demand, which was common among foreign national workers before the economic recession, is now equally affecting Spaniards. Special attention must be given to the increase in perceived job insecurity for both Spanish and foreign national workers. Previous studies show that perceived job insecurity increases the probability of poor self-reported health.<sup>13</sup> It has also been suggested that increased work stress may be a pathway through which the external economic environment leads to adverse health outcomes.<sup>14</sup>

There has also been an increase in the psychological burden in Spanish national workers. This trend began before the 2008 economic crisis, but has not impacted foreign workers. This finding is in line with other studies that suggest that foreign national employees might have lower expectations of their working environment, which could lead to little change in their perceptions from one economic climate to another.

The strength of this work lies in the fact that it is based on a survey using the same methodology and the same variables before and during the economic crisis. However, because we are using subjective measures and it is not possible to obtain objective measures of these exposures, we cannot rule out a reporting bias, even in an anonymous questionnaire. For foreign workers, cultural differences might influence the perceived freedom (or lack thereof) to express comments critical of working conditions and the employer.<sup>15,16</sup> Finally, the questionnaire is only available in the Spanish language and differential understanding among native and nonnative Spanish speakers might lead to bias and the noninclusion of those who cannot speak Spanish.<sup>15</sup> Taking appropriate steps to ensure employee wellbeing should be a high priority, especially in times of economic instability.

## Disclaimer Statements

**Contributors** Isabel Tora, José Miguel Martínez, and Elena Ronda: designed the study, analysis of the data, and wrote the first draft. Katia Leveque and F. Benavides:

interpretation of data and revising the draft critically. All the authors: final approval of the final version.

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**Conflicts of interest** None.

**Ethics approval** The study has the Ethical Approval of the Ethic Committee of the University of Alicante.

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## References

- 1 EuroStat. EuroStat Database [Internet]. Brussel: European Commission; 2014 [cited 2014 September 12]. Available from: [http://epp.eurostat.ec.europa.eu/statistics\\_explained/File:Unemployment\\_rate\\_2001-2012\\_\(%25\).png](http://epp.eurostat.ec.europa.eu/statistics_explained/File:Unemployment_rate_2001-2012_(%25).png).
- 2 Lopez Bernal JA, Gasparrini A, Artundo CM, McKee M. The effect of the late 2000s financial crisis on suicides in Spain: an interrupted time-series analysis. *Eur J Public Health*. 2013;23(5):732–6.
- 3 Gili M, Roca M, Basu S, McKee M, Stuckler D. The mental health risks of economic crisis in Spain: evidence from primary care centres, 2006 and 2010. *Eur J Public Health*. 2013;23(1):103–8.
- 4 Economou M, Madianos M, Theleritis C, Peppou LE, Stefanis CN. Increased suicidality amid economic crisis in Greece. *Lancet*. 2011;378:1459.
- 5 Kentikelenis A, Karanikolos M, Papanicolas I, Basu S, McKee M, Stuckler D. Health effects of financial crisis: omens of a Greek tragedy. *Lancet*. 2011;378:1457–8.
- 6 Houdmont J, Kerr R, Addley K. Psychosocial factors and economic recession: the Stormont Study. *Occup Med (Lond)*. 2012;62(2):98–104.
- 7 Tsai FJ, Chan CC. The impact of the 2008 financial crisis on psychological work stress among financial workers and lawyers. *Int Arch Occup Environ Health*. 2011;84(4):445–52.
- 8 The Regional Office for Europe of the World Health Organization. Impact of economic crises on mental health [Internet]; 2011 [cited 2014 October 10]. Available from: <http://goo.gl/4c4xL>.
- 9 International Labour Organization. Global job crisis observatory. The global economic crisis and the impact on migrant workers [Internet]; 2014 [cited 2014 October 10]. Available from: <http://www.ilo.org/public/english/support/lib/financialcrisis/featurestories/story111.htm>.
- 10 Gobierno de España. Ministerio de Empleo y Seguridad Social. Instituto Nacional de Seguridad e Higiene en el Trabajo. Encuesta Nacional de Condiciones de Trabajo [Internet]; 2007 [cited 2014 October 10]. Available from: <http://www.oect.es/portal/site/Observatorio>.
- 11 Campos-Serna J, Ronda-Pérez E, Moen BE, Artazcoz L, Benavides FG. Welfare state regimes and gender inequalities in the exposure to work-related psychosocial hazards. *Int J Occup Environ Health*. 2013;19(3):179–95.
- 12 StatCorp. Stata Statistical Software: Release 12. College Station, TX: StatCorp LP; 2011.
- 13 Dragano N, Siegrist J, Wahrendorf M. Welfare regimen, labour policies and unhealthy psychosocial working conditions: a comparative study with 9917 older employees from 12 European countries. *J Epidemiol Community Health*. 2011;65(9):793–9.
- 14 Modrek S, Cullen MR. Job insecurity Turing recessions: effects on survivors' work stress. *BMC Public Health*. 2013;13:929.
- 15 Ronda Pérez E, Benavides FG, Leveque K, Love JG, Felt E, Van Rossem R. Differences in working conditions and employment arrangements among migrant and non-migrant workers in Europe. *Ethn Health*. 2012;17(6):563–77.
- 16 Font A, Moncada S, Llorens C, Benavides FG. Psychosocial factors exposures in the workplace: differences between immigrants and Spaniards. *Eur J Public Health*. 2012;22(5):688–93.

**Appendix 1: Psychosocial working conditions included in the sixth and seventh Spanish Survey of Working Conditions (SSWC)**

<b>Psychosocial work factor</b>	<b>Items</b>
Psychological job demand	Support a high or very high level of attention Work at very high speed Work to strict deadlines Attend several tasks simultaneously Treat directly with people who are not employees in his/her workplace: customers, passengers, pupils, patients, etc. Perform complex tasks Have a lot of work and he/she feels overwhelmed
Job control	Not have the opportunity to do what know Not have the opportunity to apply own ideas in the workplace Not have autonomy in the order of tasks Not have autonomy in the working method Not have autonomy in the working place Not have autonomy in the breaks distributions
Job social support	Cannot get assistance from his/her colleagues when he/she asks for it Cannot get assistance from his/her supervisors/boss when he/she asks for it
Physical demands	Take painful of fatiguing positions Lifting or moving people Lifting or moving people heavy loads Make a major force Perform repetitive movements Have little space to work comfortable Having to reach very low/high objects Working on unstable or irregular areas
Job insecurity	Risk of job loss