

# Work-related health problems among resident immigrant workers in Italy and Spain

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## ABSTRACT

**BACKGROUND:** in both Spain and Italy the number of immigrants has strongly increased in the last 20 years, currently representing more than the 10% of workforce in each country. The segregation of immigrants into unskilled or risky jobs brings negative consequences for their health. The objective of this study is to compare prevalence of work-related health problems between immigrants and native workers in Italy and Spain.

**METHODS:** data come from the Italian Labour Force Survey (n=65 779) and Spanish Working Conditions Survey (n=11 019), both conducted in 2007. We analyzed merged datasets to evaluate whether interviewees, both natives and migrants, judge their health being affected by their work conditions and, if so, which specific diseases. For migrants, we considered those coming from countries with a value of the Human Development Index lower than 0.85. Logistic regression models were used, including gender, age, and education as adjusting factors.

**RESULTS:** migrants reported skin diseases (Mantel-Haenszel pooled OR=1.49; 95%CI: 0.59-3.74) and musculoskeletal problems among those employed in agricultural sector (Mantel-Haenszel pooled OR=1.16; 95%CI: 0.69-1.96) more frequently than natives; country-specific analysis showed higher risks of musculoskeletal problems among migrants compared to the non-migrant population in Italy (OR=1.17; 95% CI: 0.48-1.59) and of respiratory problems in Spain (OR=2.02; 95%CI: 1.02-4.0). In both countries the risk of psychological stress was predominant among national workers.

**CONCLUSIONS:** this collaborative study allows to strength the evidence concerning the health of migrant workers in Southern European countries.

*Key words: Work-related diseases, Migrants, Workers, Labour force survey*

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## INTRODUCTION

Migrant workers (MWs) may be found in various industries, chiefly in construction, agriculture, and manufacturing. They are often exposed to poor working conditions, and may be

further disadvantaged by a limited knowledge of the language and laws in their host country. The International Labour Organization (ILO) Report on MWs describes safety and health issues as a major concern as these workers may be involved in hazardous and risky jobs (1).

In both Spain and Italy the number of immigrants has increased abruptly during the period 1997-2008, reaching more than the 10% of workforce in each country.

The case of Spain is quite particular due to its relatively new and large migrant population. It has experienced one of the major and most intensive growth in the number of migrants in Europe in the last few years. In 1999, foreigners represented less than 2% of the population; 10 years later, this percentage rose to 12% and 42% of the total increase in new affiliations to the Social Security was due to foreign workers. The largest group of foreign workers by country of origin was represented by Moroccans followed by Romanians, Ecuadorians and Colombians.

In the last 20 years, the number of immigrants in Italy has also strongly increased, from 573 000 in 1992 to 4.2 million in 2010, representing 7.1% of the Italian population. The proportion of MWs among workforces steadily increased as well, from 3.0% in 2001 to 9.1% in 2010 (2-4). Similarly to Spain, the largest group of foreign workers by country of origin came from Romania, followed by Albania and Morocco.

In both countries MWs are more frequently employed in unskilled jobs, such as machine operators, builders, waiters, cleaners, fabricators, labourers, and domestic services, whereas the non-migrant population occupies a greater proportion of administrative and professional positions (5).

Disparities in occupational health and precariousness of work conditions have been described between migrants and non-migrants both in Italy and Spain, with rates of work accidents and sickness presenteeism being higher among immigrants than among natives (6-11). However, despite the importance of the issue that is nowadays recognized as a major public health problem, the related literature is still poor and no estimates of the burden of work-related diseases and injuries are available at country level.

The aim of the present study was to use merged information derived from two nationwide surveys conducted in Italy and Spain, in order to compare the prevalence of work-related health problems (WHPs) between immigrants and native workers in both countries.

## METHODS

Data were derived from the Italian Labour Force Survey - ILFS, with a sample of 65 779 interviewed subjects and the Spanish Working

Conditions Survey - SWCS, with 11 019 interviews, both conducted in 2007 respectively by the National Institute of Statistics and the Spanish Ministry of Labour. Individual anonymous records were provided from both institutions.

## Data sources

The ILFS is an ongoing three-month survey which collects data on the socio-demographic and occupational characteristics of the resident population and provides data on employed persons or those looking for work. The survey uses a two-stage element (municipalities-households) sampling method, stratifying the primary sampling units by demographic size; all household members of at least 15 years of age are interviewed using a standardized questionnaire. The data used for the present study referred to the 2<sup>nd</sup> trimester of 2007, during which the ILFS also included a form on "Health and safety in the workplace". The dataset included 148 221 interviews to persons aged 15 years or more and 69 435 households residing in 1 246 municipalities. The households are rotated according to a 2-(2)-2 rotation plan (12). The household response rate was 89.9%. The analysis was restricted to the 65 779 responders who declared to have an occupation in the previous year.

The SWCS study population consisted of workers employed in all economic activities from across the country (n=11 019 workers). The sample is representative of the persons in employment and followed a multi-stage (municipality, census tract, individual), stratified and clustered design with a "random walk" procedure for the selection of the respondents. Information was obtained by face-to-face interview at the selected worker's home (13). The analysis was restricted to 10 927 records with information available on nationality.

## Variables

Nationality was the main explanatory variable (natives or migrants): native was a person with the Italian or Spanish nationality; migrant was defined as a person not having these nationalities. Specifically, we considered only those migrants coming from countries with a value of the Human Development Index lower than 0.85 (14). We analyzed answers by natives and migrants interviewees to the question "Does your work

*affect your health?*", and the specific self-reported health problem (musculoskeletal diseases, respiratory problems, skin diseases, hearing loss, psychological stress, visual impairment, headache and cardiovascular diseases).

### Analysis

Firstly, descriptive analyses of the sample were carried out. Overall and disease specific prevalence of work related health problems were calculated, in both countries and by country. The prevalence was stratified also by economic sector. Finally, logistic regression models were used; gender, age, and education were included in the models as adjusting factors. Homogeneity of risks in the two samples was tested using the Breslow and Day test. In case of heterogeneity between country-specific and pooled measures, we used the Mantel-Haenszel odds ratio (MH-OR).

### RESULTS

The percentage of MWs in the samples was quite different in the two countries: 3.8% in Italy, 13.3% in Spain. Age of MWs was markedly lower in the Spanish survey compared to the Italian survey, while education was higher. In both surveys, female MWs were employed mostly in services, the percentage of male MW in agriculture sector differed substantially (4.8% in Italy and 8.3% in Spain), as well as the percentage of those employed in the industrial sector (30.4% in Italy and 12.4% in Spain). In both samples the percentage of workers employed in the construction sector is much higher among MWs (Table 1a and 1b).

In Italy, the prevalence of work-related diseases was 5.8% among migrants and 7.0% among Italians; while in Spain the prevalence was 19.1% among migrants and 22.8% among Spanish. Musculoskeletal diseases and skin diseases were more frequent among migrants in the Italian sample, visual impairment in the Spanish sample, respiratory diseases in both samples (Table 2).

In the Italian survey, the risk of musculoskeletal problems was higher among migrants (OR=1.17; 95% CI: 0.48-1.59), while higher risks for respiratory problems emerged in Spain (OR=2.02; 95% CI: 1.02-4.00) compared to the non-migrant workers. In both countries, the risk of stress was predominant among natives (in Italy OR=0.30; 95% CI: 0.16-0.55, in Spain OR=0.86; 95% CI: 0.57-1.28) (Table 3).

Merged data, using both data from Italian and Spanish surveys, showed heterogeneous risks of WHPs among migrants in the two countries. The risk of WHPs was therefore tested using the MH-OR. Overall, risk for migrants was not statistically significant (MH-OR=0.89; 95% CI: 0.80-1.00). When analyzing risks by economic working sector, we found higher risk among migrants in Industry (MH-OR=1.23; 95% CI: 0.94-1.60) and lower risks in Services (MH-OR=0.81; 95% CI: 0.69-0.94) and Construction (MH-OR=0.87; 95% CI: 0.66-1.14), although some differences were not statistically significant; no difference was observed in Agriculture sector (MH-OR=1.04; 95% CI: 0.64-1.71).

Looking at specific diseases, higher risk of skin diseases was observed for migrants compared to non-migrants, though not statistically significant (MH-OR=1.49, 95% CI: 0.59-3.74). The risk of musculoskeletal diseases was not significantly different when all the economic working sectors were considered in the analysis (MH-OR=0.98; 95% CI: 0.86-1.12), but higher risk for migrants was observed in specific sectors such as Agriculture sector (MH-OR=1.16; 95% CI: 0.69-1.96).

### DISCUSSION

In the present study, immigrants are more likely to have higher work-related musculoskeletal diseases compared to non-migrants, in particular those employed in the Agriculture sector, even though the observed difference was not statistically significant at the 5% level. Actually, heavy physical labour contributes to a variety of musculoskeletal problems, including traumatic injuries, soft-tissue disorders, and degenerative joint disease of the hands, knees, and hips. Few formal studies of the risk of musculoskeletal and soft-tissue conditions have dealt with agricultural populations. Published articles, however, show that farm workers are exposed to many of the risk factors associated with musculoskeletal injury. For example, occupational factors that contribute to back strain include previous back injury, heavy lifting and carrying, difficult work positions, an excessively fast work pace, whole-body vibration, and work in cold or hot climates (15). The prevalence of musculoskeletal problems among MWs employed in agricultural sector was reported as high as from 21% to 46%, always higher than autochthonous workers (16, 17), especially among not qualified workers (18).

Respiratory problems were found significantly

TABLE 1A

CHARACTERISTICS OF THE STUDY POPULATIONS. MALES				
	ITALY (N= 38 870)		SPAIN (N=5 791)	
	Migrant n=1 430	Native n=37 440	Migrant n=660	Native n=5 131
	3.68%	96.32%	11.40%	88.60%
<b>AGE (YEARS)</b>				
<30	23.6%	18.0%	34.4%	21.4%
30-49	63.1%	53.0%	55.9%	55.1%
>50	13.2%	29.0%	9.8%	23.5%
<b>EDUCATION LEVEL</b>				
None or primary school	54.3%	46.2%	37.9%	44.9%
Secondary school	37.2%	41.4%	42.2%	36.2%
Higher education	8.5%	12.4%	19.9%	18.9%
<b>ECONOMIC ACTIVITY</b>				
Construction	26.8%	13.0%	41.5%	19.5%
Agriculture	4.8%	5.5%	8.3%	8.0%
Services	38.1%	56.5%	37.8%	50.5%
Industry	30.4%	25.0%	12.4%	22.0%

TABLE 1B

CHARACTERISTICS OF THE STUDY POPULATIONS. FEMALES				
	ITALY (N= 38 870)		SPAIN (N=5 791)	
	Migrant n=1 112	Native n=25 797	Migrant n=626	Native n=4 510
	4.13%	95.87%	12.19%	87.81%
<b>AGE (YEARS)</b>				
<30	26.3%	18.5%	36.3%	24.3%
30-49	59.0%	56.7%	54.1%	56.7%
>50	14.7%	24.8%	9.6%	19.1%
<b>EDUCATION LEVEL</b>				
None or primary school	41.5%	33.0%	31.5%	34.6%
Secondary school	41.5%	47.6%	43.2%	38.5%
Higher education	17.0%	19.4%	22.2%	26.9%
<b>ECONOMIC ACTIVITY</b>				
Construction	0.7%	1.2%	1.1%	2.2%
Agriculture	2.4%	3.8%	4.3%	4.1%
Services	82.5%	80.4%	89.3%	82.6%
Industry	14.4%	14.6%	5.3%	11.1%

TABLE 2

PREVALENCE (%) OF SELF REPORTED WORK-RELATED HEALTH PROBLEMS IN MIGRANT AND NATIVE WORKERS AS PERCENTAGE OF THE SURVEY SAMPLES				
	ITALY		SPAIN	
	Migrant	Native	Migrant	Native
Any work-health problem	5.8	7.0	19.1	22.8
Muscular	3.9	3.5	13.9	17.4
Stress	0.4	1.5	2.2	2.5
Respiratory	0.7	0.5	0.8	0.4
Skin	0.2	0.1	0.1	0.1
Hearing loss	0.0	0.1	0.0	0.1
Visual impairment	0.2	0.3	0.4	0.3
Headache	0.1	0.2	0.2	0.4
Cardiovascular	0.4	0.4	0.0	0.3

TABLE 3

ASSOCIATION OF SELF REPORTED WORK-RELATED HEALTH PROBLEMS WITH MIGRANT STATUS				
	ITALY		SPAIN	
	OR (95% CI)	adjOR (95% CI)	OR (95% CI)	adjOR (95% CI)
Any work-related health problem	0.82 (0.69-0.97)	0.91 (0.76-1.07)	0.80 (0.69-0.92)	1.17 (0.95-1.44)
Musculoskeletal	1.10 (0.89-1.35)	1.17 (0.48-1.59)	0.76 (0.65-0.90)	0.83 (0.70-0.98)
Respiratory	0.78 (0.43-1.43)	0.87 (0.48-1.59)	1.95 (1.00-3.82)	2.02 (1.02-4.00)
Stress	0.26 (0.14-0.48)	0.30 (0.16-0.55)	0.83 (0.56-1.23)	0.86 (0.57-1.28)

Crude and adjusted Odds Ratio (adjOR) with 95% Confidence Interval (CI)

associated with migrant status, among Spanish workers. Similarly to our study, a high prevalence of respiratory problems and skin problems was found among MWs employed in the agricultural sector, respectively 40% and 15%, (19, 20) as well as in other sectors, such as cleaning services and clothing sector (9, 11).

Stress was more frequently reported by native workers, especially in Italy. The work-related stress involves various factors such as any inadequacy in the management and organization of work processes, working conditions and environment, communication and personal

factors. Here linguistic and cultural elements may play role: the interpretation of the term "stress" may differ conceptually between natives and migrants. Work experience as well as skills recognition and language barriers may also play a role. Language requirements create a barrier to MWs obtaining better employment. A high percentage are employed on short term contracts, meaning they are likely to receive less training and are likely to be less aware of the risks.

A major strength of the study is that it was based on representative samples of whole country. The surveys provided information on socio-demographic

and occupational characteristics, which are not routinely available from official statistics on work-related injuries, allowing for the evaluation of risk factors and controlling for confounding. The possibility to merge the two surveys, that are harmonized at European level (21), allows to make use of a larger sample and to add power to the analysis from a statistical point of view.

Potential bias may derive from communication difficulties during the interview and reticence to report injuries due to the fear of being fired. This could lead to underestimate the occurrence of diseases. In addition, the survey only included immigrants who have registered as official residents and have achieved a higher level of integration; findings cannot therefore be generalized to the whole immigrant populations living in Italy or Spain, which also include undocumented MWs known to be at very high risk of work-related injuries (22). On the other hand, it is unlikely to be able to interview non-resident migrants, who are often undocumented, and quite difficult to have reliable information from them.

Finally, although the survey was designed to investigate health and safety in the workplace, it was not specifically focused to evaluate working conditions and injuries among migrant population. For this reason, the sample size of immigrants was not sufficiently large to analyze specific working

sectors, especially for women. At the same time some interesting aspects, such as injury severity, could not be investigated in depth because of the lack of information. Moreover, the measure of the outcome was self-reported, therefore culture or knowledge dependent reporting may have influenced the results.

This collaborative study allows to strengthen the evidence concerning health of MWs in Southern European countries. Undertaking studies on occupational health risks in migrant populations will not only contribute to the understanding of such risks but can also support further preventive efforts and lead to better health in these high-risk populations. Additional in-depth analysis of the social, cultural, and workplace mechanisms leading to these health problems is recommended.

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