

Occupational health, frontline workers and COVID-19 lockdown: new gender-related inequalities?

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► Additional supplemental material is published online only. To view, please visit the journal online (<http://dx.doi.org/10.1136/jech-2021-217692>).

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Received 20 July 2021

Accepted 2 February 2022

Published Online First

28 February 2022



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To cite: Utzet M, Bacigalupe A, Navarro A. *J Epidemiol Community Health* 2022;**76**:537–543.

ABSTRACT

Introduction The abrupt onset of COVID-19, with its rapid spread, has had brutal consequences in all areas of society, including the workplace. In this paper, we report the working conditions, health, and tranquilisers and opioid analgesics use of workers during the first months of the ensuing pandemic, according to whether they were frontline workers or not and also according to sex.

Methods Our analysis is based on cross-sectional survey data (collected during April and May 2020) from the wage-earning population in Spain (n=15 070). We estimate prevalences, adjusted prevalence differences and adjusted prevalence ratios by sex and according to whether the worker is a frontline worker or not.

Results Employment and working conditions, exposure to psychosocial risks, as well as health status and the consumption of tranquilisers and opioid analgesics all showed sex and sectoral (frontline vs non-frontline) inequalities, which placed essential women workers in a particularly vulnerable position. Moreover, the consumption of tranquilisers and opioid analgesics increased during the pandemic and health worsened significantly among frontline women workers.

Conclusions The exceptional situation caused by the COVID-19 pandemic provides an opportunity to revalue essential sectors and to dignify such employment and working conditions, especially among women. There is an urgent need to improve working conditions and reduce occupational risk, particularly among frontline workers. In addition, this study highlights the public health problem posed by tranquilisers and opioid analgesics consumption, especially among frontline women.

INTRODUCTION

Spain was one of the countries most affected by the 2020 COVID-19 pandemic, caused by SARS-CoV-2.¹ During the first wave, Spain became one of the European epicentres of the pandemic in terms of diagnosed cases. As in most European countries, the first wave was controlled through the imposition of a state of alarm and strict lockdown measures, which included the shutdown of most social activities and employment, except for workers in the economic sectors classified as ‘essential’ in ad hoc regulations.² Despite the lack of an agreed definition of essential in this context, we can assume that it includes all those activities that are necessary for the continuation of life and society, which some authors have called ‘life-making activities’.³ This therefore clearly includes the health-care sector, but also cleaning, food retail, transport and security sectors, which are characterised by a high proportion of jobs that are usually socially

under-recognised and significantly invisibilised,⁴ even categorised as ‘dirty work’.⁵

The implications of such a cessation of labour varied greatly according to the type of sector. On the one hand, people working on site in sectors defined as essential (the frontline essential workers, from now on, frontline workers) remained in employment, generally in their usual place of work, but under extraordinary working and emotional conditions⁶; in many cases, they had to work without the necessary preventive measures, involving high levels of risk for themselves and their families.⁷ On the other hand, people working in non-essential sectors and those working in essential sectors but were not in the frontline suffered radical changes in their employment and working conditions,⁸ such as the imposition of teleworking, especially among non-manual workers, the suspension of employment or reduction of working hours due to the application of a temporary lay-off procedure, the non-renewal of temporary contracts or dismissal.

From a gender perspective, the cessation of activity had unequal consequences: many of the workers considered essential, because of their role in the reproduction of society and life, were women, especially in sectors such as healthcare, cleaning, geriatric care or food retail. Moreover, prior to the pandemic, these sectors already showed precarious employment and working conditions and indicators of poor physical and mental health.^{9–11} Essential and non-essential women workers who teleworked also had to take over most of the care and maintenance of household welfare,¹² and this may be associated with deterioration of their mental health during the lockdown,¹³ especially among the most vulnerable women.¹⁴

Since the beginning of the pandemic, occupational health research has been very fruitful but has mainly focused on morbidity and mortality associated with COVID-19 in healthcare workers.¹⁵ There is less research on frontline non-healthcare workers, but it appears that the lack of preventive measures,¹⁶ the risk of COVID-19 infection¹⁷ and the deterioration of the mental health⁶ of frontline workers were very high. However, most studies did not incorporate a gender perspective in their analysis.

The potential impact of the pandemic on occupational health in Spain has to be understood in the context of the Spanish national labour market, which is characterised by high chronic unemployment, as well as precariousness¹⁸ and segmentation by gender, age, class and country of origin.¹⁹ This implies that people who occupy less advantaged social positions are relegated to the bottom rungs

of the occupational structure and, more specifically, that women systematically experience more unemployment and temporary employment²⁰ and precariousness,²¹ as well as being more exposed to certain psychosocial risks.²² The few studies that have analysed the impact of the pandemic on working conditions generally note a significant deterioration in working conditions and health indicators, especially among certain vulnerable groups of workers.⁸

Health and economic crises often have differential impacts according to gender, and existing gender inequalities can be reinforced.²³ Therefore, in this paper, we analyse working conditions, health, and tranquilisers and opioid analgesics consumption among wage-earner men and women during the first months of the COVID-19 pandemic, according to whether they were frontline or non-frontline workers.

METHODS

This is an observational cross-sectional study based on data from an online survey carried out between 29 April and 28 May 2020, including 20 328 participants. The study population was all wage-earners in Spain who had a job on 14 March 2020 (the day the state of alarm began). The sampling designs applied are reported elsewhere.⁸ In the present study, we excluded people who were subsequently fired or affected by a temporary lay-off procedure, so the final sample size included 15 070 participants.

Workers were initially classified as essential or non-essential, based on the answer to a self-report question. In addition, essential workers who had to go to work during the state of alarm were categorised as frontline workers, and those who, at the time of answering, had been fired, affected by a temporary lay-off procedure or could stay at home teleworking were grouped with the non-essential workers (overall called non-frontline workers). Online supplemental table S1 presents the distribution of the main sectors of the frontline workers and the non-frontline workers.

The employment and working conditions recorded included: contract relationship (permanent/temporary) and salary that covers basic needs (always and many times/sometimes, only once, and never). Psychosocial risks were assessed with items corresponding to the short version of the Copenhagen Psychosocial Questionnaire (CoPsoQ)²⁴ adapted to Spanish and validated in Spain (COPSOQ-Istas21).²⁵ Four psychosocial dimensions were included: emotional demands, social support, work–family conflict and job insecurity. Meanwhile, the demand–control model²⁶ was measured with the partial scales for psychological demands and control, which are considered to provide a good reflection of the original instrument.²⁷

The health status of workers was assessed using general and mental health indicators. One item referring to general health was included ‘How do you consider your current state of health, compared to before the state of alarm was declared?’ (better or unaltered/worse). Mental health was gauged using the Mental Health domain of the Spanish version of the Short Form-36 health survey (SF -36)²⁸: a generic instrument for assessing health-related quality of life. Participants were classified as ‘at risk of poor mental health’ when their score was 56 or lower.

Drug consumption was assessed via questions from the survey on alcohol and other drugs in Spain (EDADES) of the National Drug Plan.²⁹ Two questions were included: ‘In the past thirty days, have you used any tranquilisers/sedatives or sleeping pills?’ and ‘In the past thirty days, have you used painkillers (opioids)?’ (no/yes, I was taking them before and now I take the same dose/yes, I was taking them before but now I have increased my

dose, or I have changed to a stronger one/yes, I do not usually consume them but in this period, I have). Both questions were split into two variables: tranquiliser or painkiller consumption among those who were taking them before the state of alarm was declared (same dose/increased dose) and tranquiliser consumption among those who were not taking them before the state of alarm was declared (still not consuming/started to consume).

Finally, other sociodemographic variables included in the analysis were sex, age and occupational social class, which was obtained using the 2011 National Classification of Occupations (CNO11), which is based on the International Standard Classification of Occupations (ISCO88) and was divided into non-manual and manual workers.

Statistical analysis

The prevalence of the different items was estimated by sex and type of worker (frontline/non-frontline). Prevalence differences adjusted by age and occupational social class, with their respective 95% CIs, were calculated by sex and type of job. The adjusted prevalence ratio (aPR) by age and occupational social class and the corresponding 95% CI were estimated using Poisson regression with robust variance.³⁰

All the analysis was carried out using data weighted according to gender crossed with age and occupational social class distributions from the last quarter of 2020, taken from the survey of the active population in Spain (EPA), to mitigate any possible selection bias due to the sociodemographic and occupational structure (the distribution of the participants by gender and employment, using both non-weighted and weighted data, is presented in online supplemental table S2). All the calculations were conducted with STATA V.14.2 (College 35 Station, Texas, USA).

RESULTS

As presented in [table 1](#), frontline workers, who represented 29.9% of our sample, were slightly older and employed in manual occupations in a proportion twice as large as non-frontline workers (69.2% vs 31.0%), specifically in catering, personal and protection services, and salespersons (28.6% vs 11.3% and unskilled workers (18.0% vs 7.7%). In terms of gender differences, among both frontline and non-frontline occupations, the age distribution is similar, while the proportion of men in manual occupations is higher than that of women. Among the frontline occupations, the high proportion of women in catering, personal and protection services, and salespersons (36.6%) and unskilled workers (22.9%) stands out. More than 60% of frontline female workers were in the healthcare (31.3%), social care (19.0%) or cleaning (14.2%) sectors, while approximately 60% of frontline men were employed in the construction and industry (26.6%), transport (22.0%) or healthcare (12.6%) sectors (see online supplemental table S1).

As shown in [table 2](#), frontline and non-frontline workers did not differ in their contract relationship, but the proportion of workers whose salary sometimes, only once, or never covered basic needs was higher among frontline workers (32.2% vs 23.9%). There were clear differences by sex, with women experiencing more temporary contracts (28.8% vs 15.3% among frontline workers and 23.3% vs 17.0% among non-frontline workers) and worse wages (39.4% vs 26.0% among frontline workers and 27.0 vs 20.5 among non-frontline workers). In terms of exposure to psychosocial risks, frontline workers were less exposed to high levels of job insecurity (29.5% vs 38.2%) as well as to high work–family conflict (48.6% vs 55.1%) than

Table 1 Sociodemographic characteristics of frontline and non-frontline workers and by sex (%)

	Frontline workers			Non-frontline workers		
	Women	Men	Total	Women	Men	Total
Total	46.8	53.2	100.0	52.8	47.2	100.0
Age (years)						
16–34	24.4	23.0	23.6	18.8	22.2	20.4
35–49	42.4	44.9	43.7	55.0	43.0	45.0
50 or over	33.2	32.0	32.7	34.4	34.8	34.6
Occupational social class (CNO11)						
Directors and managers	1.0	2.4	1.7	3.1	5.2	4.1
Scientists, academics and similar professionals	19.8	8.6	13.8	35.7	29.5	32.8
Technicians; professional support staff	4.6	11.0	8.0	13.1	16.3	14.6
Accountants, administrative workers and other office employees	9.7	5.1	7.3	22.6	11.7	17.5
Workers in catering, personal and security services, and salespersons	36.6	21.4	28.6	13.4	9.0	11.3
Skilled agricultural, forestry and fishing sector workers	0.4	2.1	1.3	0.2	1.8	1.0
Crafts persons and skilled workers in manufacturing and construction (except installers and machine operators)	1.6	16.9	9.6	1.1	13.1	6.7
Installers, machine operators and assemblers	3.7	18.9	11.7	1.5	7.4	4.2
Unskilled workers	22.9	13.6	18.0	9.3	6.0	7.7
Occupational social class						
Non-manual	34.9	27.1	30.8	74.5	62.7	69.0
Manual	65.1	72.9	69.2	25.5	37.3	31.0

CNO11, 2011 National Classification of Occupations.

non-frontline workers. In addition, female frontline workers were more exposed than male frontline workers to high levels of emotional demands (71.8% vs 57.7%) and high strain (50.7% vs 38.5%). Workers in frontline sectors had a higher risk of suffering poor mental health than those in non-frontline sectors (56.8% vs 52.6%), and in both cases, women had poorer health. As for the consumption of tranquilisers and opioid analgesics, we assume a pre-pandemic scenario in which approximately 12% of women and 7% of men, both frontline and non-frontline workers, were

taking them (online supplemental table S3). After the pandemic onset, frontline workers showed a slightly higher consumption of tranquilisers and opioid analgesics (14.7% increased the dose of tranquilisers, 12.0% of them started using opiates and 28.5% increased their dose, compared with 11.9%, 9.5% and 24.7%, respectively, among non-frontline workers) and women more so than men. The only exception referred to those starting to use tranquilisers, whose proportion is higher among non-frontline users.

Table 2 Prevalence of employment and working conditions, psychosocial exposure, health characteristics and drug consumption, by type of employment and sex (%)

	Frontline workers			Non-frontline workers		
	Women	Men	Total	Women	Men	Total
Employment and working conditions						
Temporary contract	28.8	15.3	21.9	23.3	17.0	20.3
Salary sometimes, only once or never covers basic needs	39.4	26.0	32.2	27.0	20.5	23.9
Psychosocial exposure						
Exposed to high emotional demands	71.8	57.7	64.4	70.8	69.0	70.0
Exposed to low social support	44.1	42.1	43.0	41.8	38.1	40.1
Exposed to high job insecurity	27.4	31.7	29.5	37.0	39.5	38.2
Exposed to high work–family conflict	49.2	47.8	48.6	56.4	53.6	55.1
Exposed to high strain	50.7	38.5	44.3	40.8	36.9	39.0
Health characteristics and drug consumption						
Worse general health than before the state of alarm	45.5	28.8	36.6	46.6	33.9	37.4
At high risk of suffering poor mental health:						
Increased tranquiliser consumption among those who were taking them before the state of alarm*	39.3	26.4	34.2	41.5	29.3	37.4
Started to consume tranquilisers during the state of alarm†	20.5	9.7	14.7	14.9	8.7	11.9
Increased painkiller (opioid) consumption among those who were taking them before the state of alarm*	32.5	21.6	28.5	28.1	17.3	24.7
Started to consume painkillers (opioids) during the state of alarm†	15.3	9.2	12.0	10.3	8.5	9.5

*Category not shown: same dose.

†Category not shown: still not consuming.

Table 3 Adjusted prevalence difference and 95% CI,* and adjusted prevalence ratio (aPR and 95% CI),* for employment and working conditions, psychosocial exposure, health characteristics and drug consumption among frontline versus non-frontline workers, according to sex

	Women		Men	
	Prevalence difference (95% CI)†	aPR (95% CI)‡	Prevalence difference (95% CI)†	aPR (95% CI)‡
Employment characteristics				
Temporary contract	3.9 (12.8 to 6.5)	1.16 (1.05 to 1.28)	-2.9 (-6.9 to 1.0)	0.83 (0.66 to 1.06)
Salary sometimes, only once or never covers basic needs	12.4 (9.7 to 15.0)	1.46 (1.35 to 1.58)	0.1 (-3.5 to 3.7)	1.00 (0.86 to 1.17)
Psychosocial exposure (reference category: not exposed)				
Exposed to high emotional demands	5.0 (2.1 to 7.9)	1.07 (1.03 to 1.12)	-8.5 (-12.9 to -0.4)	0.87 (0.81 to 0.94)
Exposed to low social support	-1.5 (-4.7 to 1.6)	0.96 (0.90 to 1.04)	1.3 (-3.3 to 6.0)	1.03 (0.92 to 1.16)
Exposed to high job insecurity	-14.1 (-16.9 to -11.4)	0.64 (0.58 to 0.70)	-12.3 (-16.4 to -8.2)	0.71 (0.63 to 0.80)
Exposed to high work-family conflict	-5.6 (-8.9 to -2.3)	0.90 (0.84 to 0.96)	-5.0 (-9.6 to -0.3)	0.91 (0.83 to 0.99)
Exposed to high strain	1.7 (-1.5 to 4.9)	1.04 (0.97 to 1.12)	-1.3 (-5.9 to 3.4)	0.97 (0.86 to 1.09)
Health characteristics and drug consumption				
Worse general health than before the state of alarm	2.5 (-0.4 to 5.6)	1.06 (0.99 to 1.14)	-4.2 (-8.2 to -0.5)	0.88 (0.77 to 1.00)
At high risk of suffering poor mental health:	3.6 (0.7 to 6.5)	1.06 (1.01 to 1.11)	0.4 (-4.1 to 4.9)	1.01 (0.91 to 1.11)
Increased tranquiliser consumption among those who were taking them before the state of alarm	-3.3 (-10.7 to 4.1)	0.92 (0.76 to 1.11)	-2.0 (-13.9 to 9.9)	0.93 (0.61 to 1.42)
Started to consume tranquilisers during the state of alarm	4.6 (1.9 to 7.3)	1.30 (1.11 to 1.52)	0.5 (-1.9 to 3.0)	1.06 (0.81 to 1.38)
Increased painkiller (opioid) consumption among those who were taking them before the state of alarm	2.5 (-4.6 to 9.7)	1.09 (0.85 to 1.39)	3.90 (-8.6 to 16.3)	1.23 (0.64 to 2.34)
Started to consume painkillers (opioids) during the state of alarm	2.1 (0.0 to 4.2)	1.19 (1.00 to 1.41)	-0.6 (-3.0 to 1.8)	0.94 (0.71 to 1.23)

*Adjusted by age and occupational social class.
†(prevalence in frontline workers – prevalence in non-frontline workers).
‡Reference category: non-frontline workers.

Table 3 shows that women in frontline sectors had significantly worse conditions than those in non-frontline sectors: a higher rate of temporary contracts (aPR: 1.16 (95% CI 1.05 to 1.28)), worse pay (aPR: 1.08 (95% CI 1.01 to 1.17)), while no significant difference was observed among men. Among women, those in frontline sectors were exposed to higher emotional demands than those in non-frontline sectors (aPR=1.07 (95% CI 1.03 to 1.12)), had less job insecurity (aPR: 0.64 (95% CI 0.58 to 0.70)) and less work-family conflict (aPR=0.90 (95% CI 0.84 to 0.96)). Among men, those working in frontline sectors also had both less emotional demands (aPR=0.87 (95% CI 0.81 to 0.94)) and job insecurity (aPR=0.71 (95% CI 0.63 to 0.80)) together with lower levels of work-family conflict (aPR=0.91 (95% CI 0.83 to 0.99)). Finally, women in frontline sectors showed worse health and more tranquilisers and opioid analgesics consumption than those in non-frontline sectors (poor mental health (aPR: 1.06 (95% CI 1.01 to 1.11)) and initiation of tranquilliser use (aPR: 1.30 (95% CI 1.11 to 1.52)) and opiate use (aPR: 1.19 (95% CI 1.00 to 1.41)). Among men, there were no significant differences by type of employment.

The differences between women and men in employment and working conditions were significant among both frontline and non-frontline workers (see table 4). Women were more engaged in temporary contract arrangements than men (aPR=1.83 (95% CI 1.56 to 2.14) in frontline and aPR=1.44 (95% CI 1.25 to 1.65) for non-frontline) and were paid less (aPR=1.59 (95% CI 1.42 to 1.79) and aPR=1.50 (95% CI 1.33 to 1.68). Whether they were frontline or non-frontline workers, women were exposed to significantly higher levels of work-related strain (aPR=1.34 (95% CI 1.21 to 1.47) and aPR=1.17 (95% CI 1.08 to 1.27)) than men. Only among frontline workers were women exposed to higher emotional demands (aPR=1.22 (95% CI 1.14 to 1.30)) and experienced less job insecurity (aPR=0.86 (95% CI 0.77 to

0.97)). Among both frontline and non-frontline workers, women had worse general health (aPR=1.56 (95% CI 1.40 to 1.74) and aPR=1.21 (95% CI 1.11 to 1.32)) and a greater risk of suffering poor mental health (aPR=1.48 (95% CI 1.37 to 1.59) and aPR=1.39 (95% CI 1.31 to 1.48)) than men. The same pattern held for the initiation of tranquilliser consumption among non-users (aPR=2.10 (95% CI 1.69 to 2.60) and aPR=1.78 (95% CI 1.49 to 2.12)) and of opiates (aPR=1.67 (95% CI 1.35 to 2.08) and aPR=1.32 (95% CI 1.09 to 1.60)). These differences were more pronounced among frontline workers.

DISCUSSION

The abrupt emergence of COVID-19 and its rapid spread had brutal consequences in all areas of society, including, of course, the workplace. The main results of this study suggest that employment and working conditions, exposure to psychosocial risks, as well as health status and the consumption of tranquilisers and opioid analgesics, all show gender inequalities and inequalities according to whether they were frontline or non-frontline workers.

With few exceptions, while an overall analysis shows no remarkable differences between frontline and non-frontline workers, an analysis by sex reveals significant inequalities. Overall, frontline women workers endure worse employment conditions, are exposed to high levels of emotional demands (but lower job insecurity), have poorer health and consume more tranquilisers and opioid analgesics than non-frontline women. In contrast, men present almost no remarkable differences according to whether they are frontline or non-frontline (except that frontline workers are exposed to lower levels of work-related strain, work-family conflict and job insecurity). The poorer employment and working conditions of frontline

Table 4 Adjusted prevalence difference and 95% confidence interval (95% CI),* and adjusted prevalence ratio (aPR and 95% CI),* of employment and working conditions, psychosocial exposure, health characteristics and drug consumption in women versus men, according to employment (frontline/non-frontline)

	Frontline workers		Non-frontline workers	
	Prevalence difference (95% CI)†	aPR (95% CI)‡	Prevalence difference (95% CI)†	aPR (95% CI)‡
Employment conditions				
Temporary contract	12.9 (9.9 to 16.0)	1.83 (1.56 to 2.14)	7.3 (4.7 to 9.9)	1.44 (1.25 to 1.65)
Salary sometimes, only once or never covers basic needs	15.0 (11.5 to 18.4)	1.59 (1.42 to 1.79)	9.5 (7.0 to 12.0)	1.50 (1.33 to 1.68)
Psychosocial exposure				
Exposed to high emotional demands	12.8 (8.8 to 16.8)	1.22 (1.14 to 1.30)	0.9 (-1.9 to 3.8)	1.01 (0.97 to 1.06)
Exposed to low social support	2.8 (-1.2 to 6.8)	1.07 (0.97 to 1.17)	4.8 (1.4 to 8.2)	1.13 (1.03 to 1.23)
Exposed to high job insecurity	-4.3 (-7.9 to -0.7)	0.86 (0.77 to 0.97)	-0.7 (-3.7 to 2.3)	0.98 (0.91 to 1.06)
Exposed to high work-family conflict	4.8 (-3.6 to 4.6)	1.01 (0.93 to 1.10)	1.9 (-1.3 to 5.1)	1.04 (0.98 to 1.10)
Exposed to high strain	13.0 (9.0 to 17.0)	1.34 (1.21 to 1.47)	6.2 (3.0 to 9.3)	1.17 (1.08 to 1.27)
Health characteristics and drug consumption				
Worse general health than before the state of alarm	16.3 (12.7 to 19.9)	1.56 (1.40 to 1.74)	7.1 (4.0 to 10.1)	1.21 (1.11 to 1.32)
At high risk of suffering poor mental health:	22.1 (18.3 to 25.9)	1.48 (1.37 to 1.59)	17.3 (14.2 to 20.4)	1.39 (1.310 to 1.48)
Increased tranquiliser consumption among those who were taking them before state of alarm	12.3 (1.7 to 22.9)	1.45 (1.02 to 2.05)	11.7 (3.3 to 20.1)	1.39 (1.07 to 1.82)
Started to consume tranquilisers during the state of alarm	10.8 (8.1 to 13.5)	2.10 (1.69 to 2.60)	6.8 (4.9 to 8.7)	1.78 (1.49 to 2.12)
Increased painkiller (opioid) consumption among those who were taking them before the state of alarm	9.8 (-2.2 to 21.8)	1.44 (0.86 to 2.40)	10.9 (2.7 to 19.1)	1.65 (1.07 to 2.57)
Started to consume painkillers (opioids) during the state of alarm	6.2 (3.8 to 8.5)	1.67 (1.35 to 2.08)	2.6 (0.9 to 4.3)	1.32 (1.09 to 1.60)

*Adjusted by age and occupational social class.

†(Prevalence among women – prevalence among men).

‡Reference category: men.

women workers may reflect the undervaluation and increased precariousness of most occupations highly feminised (many of which are considered essential because they are life-making jobs) demonstrated in studies prior to the pandemic.^{21 31} Frontline women workers report greater exposure to high emotional demands than non-frontline women, which could be explained by the emotional strain of working on the frontline during the first weeks of the pandemic,³² in many cases without the necessary protection.³³ In the case of men, there is no such greater exposure to emotional demands among frontline workers. This difference could be explained by the composition of essential sectors for women and men. Among frontline women workers, a high proportion work in sectors involving interaction with other people (whether they are sick or not), such as health and social care or retailing, whereas among frontline men workers, a higher proportion work in sectors such as construction or industry, where the emotional demand is lower and there is almost no social interaction.

Concerning health dimensions, the emotional demands to which frontline women workers are exposed could have conditioned the worsening of general and mental health that we found, a hypothesis put forward in similar research.³⁴ In addition, this worsening could also be related to the fear of contagion from themselves and their families through them.⁸ Finally, and perhaps because of these working conditions and the deterioration of mental health, a higher proportion of frontline women started to consume tranquilisers and opioid analgesics. Despite the public health implications of this last finding, to the best of our knowledge, no similar research has been published. Among men, there are no differences in health or consumption between those in frontline and non-frontline sectors. This result could be explained by the aforementioned lower emotional demand

associated with the majority of sectors among frontline men workers—compared with frontline women. However, it also could be due to a compensation effect: on the one hand, while men with essential jobs who had to work outside could have seen their health protected by effect of maintaining a breadwinner role,³⁵ men who stayed at home could have suffered worse health indicators, for this same question. Although staying at home was not necessarily associated with a higher risk of losing a job, it could destabilise the traditional male breadwinner identity (assuming even traditionally female roles), with negative repercussions on their health.³⁶

If we focus on gender inequalities within the frontline and non-frontline workers, we find that, in both sectors, women have worse employment and are more exposed to high levels of work-related strain than men. Moreover, among the frontline workers, women are more exposed to higher levels of emotional demands but less exposed to job insecurity. Despite the proliferation of research aimed at providing an understanding of the effects of the pandemic, there is almost no work that addresses inequalities in working conditions and health between frontline and non-frontline workers from a gender perspective. Historically, the gender perspective in occupational health research has been limited, as several reviews have revealed.³⁵ Even so, these findings are consistent with prepandemic studies that describe marked gender inequalities in relation to job insecurity and wages^{21 31} but few inequalities in exposure to psychosocial risks between men and women.²² Differences in the exposure to job insecurity will need to be thoroughly explored in future articles.

Regarding the health indicators, the pandemic has resulted in a clear deterioration of both general and mental health, in both men and women. If we compare our current findings with similar studies from before the pandemic, the prevalence of poor

mental health has doubled²² while sustaining gender inequalities. Furthermore, the results presented here demonstrate how the health crisis has triggered an increase in the consumption of tranquilisers and opioid analgesics among women, who already consumed more than men, and especially among the frontline workers. These results are consistent with other research in the general population, which shows that gender inequalities in mental health and drug use are generally very pronounced.^{37 38} Although there are almost no studies on this reality according to sector of activity (frontline or non-frontline) during the pandemic, studies in the Spanish context have suggested that the situation resulting from lockdown had a greater effect on mental health and increased tranquilisers and opioid analgesics consumption among women.³⁴ Prior to the pandemic, such consumption had already been reported to be very high among women.³⁸

This study has several limitations. The main one is the data collection method: an online survey. This method implies, among other aspects, that we cannot ensure the representativeness of our sample, so selection bias may occur. In a previous study,⁸ sensitivity analysis was carried out and showed that, even if present, this bias would not have a relevant effect on the estimates. Another limitation is that, as this is a cross-sectional design, we cannot directly compare the results obtained with pre-pandemic situation among the same workers. However, we have made comparisons with results from articles analysing similar samples of workers before the pandemic. Also, it is a self-reported survey, which may imply some bias. Finally, the concept of 'essential' itself, which is used to define the frontline workers. Before the start of the pandemic, the concept of an essential sector or activity was not very common in the specialised scientific literature, nor was it understood as a means of categorisation.³⁹ Today, there is also no clear or agreed definition of what an essential job or activity is. This implies that very heterogeneous occupations are grouped under the umbrella of essentiality, which can make interpretation of findings rather difficult. Nevertheless, 'essential' refers to those sectors that are necessary for the functioning and reproduction of society: sectors that are usually undervalued and devalued in the capitalist system.³⁹ It would be very interesting, in future research, to analyse the differences between essential workers according to occupation.

One of the main strengths of the study is the analysis of up-to-date and highly relevant information on the working conditions and health of the working population in Spain at the beginning of the pandemic. Moreover, it is based on a large sample, which allows worker profiles to be representative according to sex, age, occupational group and territory. Finally, the gender perspective, both in our analysis and discussion of the results, is one of the great strengths of this work, especially when considering the limited inclusion of the gender perspective in occupational health research.

Despite the United Nations' request to consider all workers as essential for the existence and functioning of society,⁴⁰ only those in formal employment whose economic sector was considered essential, that is, life-making activities, were classified as such in Spain at the start of the COVID-19 pandemic. The exceptional situation caused by the pandemic could have offered an opportunity to revalorise all the essential sectors, by means of dignifying their employment and working conditions, especially among women. In the face of probable future pandemics, it would be good if this would be really undertaken, so that gender inequalities will not be reinforced, and the invisibility and precariousness of certain occupations will neither deepen.

On the one hand, this study has shown the joint influence that the sector of activity and gender have on working and employment conditions, as well as on women's health, which places frontline women workers in a particularly vulnerable position. There is an urgent need to improve working conditions and reduce occupational risks, particularly among frontline workers. On the other hand, this study highlights the public health problem of tranquilisers and opioid analgesics consumption, especially among women in key sectors. This reinforces the need for further research on the relationship between employment and working conditions and such consumption, to enable us to propose appropriate preventive measures to reduce the alarming consumption of tranquilisers and opioid analgesics.

What is already known on this subject

- ⇒ Health and economic crises often have differential impacts according to gender, and existing gender inequalities can be reinforced.
- ⇒ The few studies that have analysed the impact of the pandemic on working conditions generally note a significant deterioration in working conditions and health indicators, especially among certain vulnerable groups of workers.
- ⇒ Studies in the Spanish context have suggested that the situation resulting from lockdown had a greater effect on mental health and increased tranquilisers and opioid analgesics consumption among women.

What this study adds

- ⇒ Employment and working conditions, exposure to psychosocial risks, as well as health status and the consumption of tranquilisers and opioid analgesics, show gender inequalities and inequalities according to whether the workers were frontline or not).
- ⇒ Overall, frontline women workers endure worse employment and working conditions, have poorer health and consume more tranquilisers and opioid analgesics than non-frontline women. In contrast, men show the opposite pattern.
- ⇒ If we focus on gender inequalities between frontline workers and non-frontline workers, we find that, in both cases, women have worse employment and working conditions and are more exposed to high levels of work-related strain than men. Moreover, these inequalities are more pronounced among frontline workers.
- ⇒ There is an urgent need to improve working conditions and reduce occupational risk, particularly among frontline workers.
- ⇒ There is a public health problem posed by tranquilisers and opioid analgesics consumption, especially among frontline women.

Contributors MU and AB conceived the idea of the paper. AN verified and provided the data. AN and MU were responsible for the analysis of data. AB and MU were responsible for a first interpretation of data. All authors wrote a first draft of the paper. All authors read and approved the final manuscript. All authors are guarantors.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval The study was carried out following current laws and was approved by the Ethics Committee of the Universidad Autónoma de Barcelona (CEEAH-5158). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data are available on reasonable request.

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