

# Mental health inequalities in times of crisis: evolution between 2005 and 2021 among the Spanish salaried population

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## ABSTRACT

**Background** Studying the working population's mental health in times of crisis (such as the 2008 recession or the COVID-19 pandemic) is very relevant. This study aims to assess the prevalence of poor mental health among the Spanish salaried population, according to the labour market inequality axes (2005–2021).

**Methods** Repeated cross-sectional study by comparing different surveys from 2005, 2010, 2016 and 2021 on workers residing in Spain who had been working in a salaried job during the week preceding the survey. n=7197 (2005), n=4985 (2010), n=1807 (2016) and n=18 870 (2021). Outcome variable: poor mental health (Mental Health Inventory of the 36-item Short Form Health Survey scale). Explanatory variables: gender, age, occupational class and type of contract. Prevalence of poor mental health was estimated for each year by means of logistic regression models with robust clustered SEs, stratifying by the explanatory variables. Additionally, prevalence ratios (PR) were estimated by means of robust Poisson regression models to assess differences between the explanatory variables' categories. All analyses were weighted to address unrepresentativeness.

**Results** Poor mental health significantly increased in 2021 (55.92%), compared with the previous years of study (15%–17.72%). Additionally, pattern changes were identified on inequality axes in 2021, with better mental health status among older workers (oldest group PR: 0.76; 95% CI 0.71 to 0.8) and permanent workers (PR: 0.9; 95% CI 0.85 to 0.94).

**Conclusion** This study shows a steep worsening of mental health among the salaried population in 2021 compared with previous periods. In 2021, health inequalities have apparently narrowed, although not by improving the disadvantaged groups' mental health but by worsening the typically advantaged groups' mental health.

## INTRODUCTION

The relationship between mental health and work has been widely documented in the literature.<sup>1</sup> It is known that precarious working conditions<sup>2</sup> and the exposure to work-related psychosocial risks (such as job strain or low social support)<sup>3,4</sup> have a detrimental effect on health outcomes, mostly associated with cardiovascular diseases and mental disorders, particularly depression.<sup>5</sup> Indeed, unemployment, economic loss or job insecurity, among others, can have a serious impact on mental health.<sup>6,7</sup> For this reason, the study of mental health among the

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The study of mental health among the working population in times of crisis, where the labour market is directly affected, is very relevant due to the acknowledged relationship between mental health and work.

## WHAT THIS STUDY ADDS

⇒ Poor mental health among the Spanish salaried population has more than doubled in 2021, compared with large previous periods. Even after the 2008 crisis, such deterioration was not observed, indicating the devastating effect of the pandemic on the population's mental health. Moreover, mental health inequalities have apparently narrowed in 2021 (except for gender inequalities) due to the worsening of the mental health status of the typically advantaged groups (worse results among younger, non-manual and permanent workers).

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings obtained in this study could be useful to design interventions to improve mental health among the salaried population, since efforts are needed to reduce psychosocial work exposures and change working conditions to protect mental health in the workplace, addressing health inequalities and thus generating beneficial public health effects.

working population in times of crisis, where the labour market is directly affected, is very relevant. The 2008 Great Recession already brought us evidence in this regard, with higher mental health problems (stress, depression and anxiety) related to employment precariousness<sup>8</sup> as well as rises in suicide rates associated with unemployment.<sup>9</sup> However, the mental health consequences of a financial crisis, such as that of 2008, may be different from those of the COVID-19 pandemic, due to the confluence of a massive health crisis and an economic crisis. Moreover, it is important to highlight that the adverse consequences driven from the 2008 economic crisis<sup>10</sup> or the COVID-19 crisis,<sup>11</sup> in terms of health or socioeconomic deprivation, are being exacerbated on a background of social and economic disparity, according to patterns



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of inequality deeply embedded in our societies. Socioeconomic disparities translate into different health outcomes among social groups within the same population, which are acknowledged as health inequalities and are systematic, avoidable and unfair.<sup>12</sup>

One of the most worrying consequences of the COVID-19 pandemic has been the sharp worsening of the general population's mental health worldwide.<sup>13</sup> Social isolation, loss of income in many households, uncertainty or fear of infection are some of the reasons underlying the pandemic fatigue contributing to the growing mental health burden.<sup>13</sup> The Spanish population has not been an exception in the global burden of mental health disorders. Studies exploring the psychological impact of the COVID-19 crisis in the general adult population during the first stages of the outbreak in Spain found high percentages of psychological distress, severe levels of anxiety, depressive symptoms and stress.<sup>14</sup> Among the consequences of the measures introduced to contain the pandemic, those related to employment stand out, since many companies have been forced to close, many workers have lost their jobs or have been immersed in a Temporary Lay-off Plan (ERTE in its Spanish acronym) and many others have been forced to telework.<sup>15</sup> Therefore, among the working population, the worsening of mental health in the COVID-19 context may be exacerbated by the consequences of the pandemic at the labour level.

Most studies addressing mental health among workers have focused on healthcare professionals, who have been at the front line of the pandemic and therefore exposed to a higher risk of infection and to greater quantitative and emotional demands, among other psychosocial risks.<sup>16–18</sup> Although studies carried out among the general working population during the COVID-19 pandemic are scarcer,<sup>7 19 20</sup> they provide important insights on how mental health and working conditions were impacted.

The aim of this study is to assess the prevalence of poor mental health among the Spanish salaried population, according to the labour market inequality axes (gender, age, occupational class and type of contract), in 2005, 2010, 2016 and 2021, to ascertain patterns of change. This broad period includes records obtained before and after the 2008 economic recession and the 2019 pandemic outbreak, so this study may provide valuable insights into workforce's mental health trends in times of crisis.

## METHODS

### Design, study population and information sources

A repeated cross-sectional study was conducted using four cross sections, by comparing surveys of the Spanish salaried population from years 2005, 2010, 2016 and 2021. The study population consisted of workers over 16 years old residing in Spain in the year of the survey, and who had been working in a salaried job for at least 1 hour during the week preceding the survey. The final sample included 7197 individuals interviewed in 2005; 4985 in 2010; 1807 in 2016; and 18870 in 2021.

For years 2005, 2010 and 2016, data were obtained from the corresponding editions of the Psychosocial Risks Survey,<sup>21–23</sup> which is a representative survey of the Spanish wage-earning population whose main aim is to characterise the salaried workers of the labour market in terms of the psychosocial risk dimensions defined in the Copenhagen Psychosocial Questionnaire.<sup>24</sup> These questionnaires were administered by interviews using computer-assisted personal interviewing at the respondent's home. For year 2021, data were obtained from the second COTS (*Condiciones de Trabajo y Salud*) survey,<sup>25</sup> an online self-administered questionnaire. In 2021, all participants were members of *Comisiones Obreras* (CCOO), the largest Spanish

trade union, who were approached by email. In all cases, participation was voluntary, confidential and with prior consent.

### Variables

The main outcome variable is workers' mental health status, which was assessed by means of the first version of the 5-item Mental Health Inventory (MHI) of the Spanish version of the 36-item Short Form Health Survey,<sup>26</sup> which assesses feelings of nervousness, anxiety, depression and psychological well-being during the preceding month. The three items on negative feelings were reverse scored, and the sum of the five items conforming the MHI was subsequently transformed into a 0–100 score, where 0 indicates the worst mental health status. The score was dichotomised to assess 'poor mental health', using the recommended cut-off point of  $\leq 52$ , which has shown good screening accuracy results for several mental disorders, including depression or anxiety disorders.<sup>27 28</sup>

The explanatory variables are sociodemographic; gender (men; women), age (<35; 35–49;  $\geq 50$  years old), occupational class (manual; non-manual, according to the National Classification of Occupations—CNO11<sup>29</sup>) and type of contract (permanent; temporary).

In this article, the variables compared are identical in all the included surveys.

### Data analysis

A descriptive analysis of the explanatory variables was carried out by year of survey. Moreover, the prevalence, with the respective 95% CI, of poor mental health was calculated for each year. Prevalence of poor mental health was estimated by means of logistic regression models with robust clustered SEs, using year as cluster to account for correlated observations, stratifying by gender, age, occupational class or type of contract and adjusting in every case by the rest of the explanatory variables. In addition, prevalence ratios (PR; 95% CI) were estimated by means of robust Poisson regression models to assess differences between the categories of each explanatory variable, carrying out a model for each year of study, and adjusting by the rest of the explanatory variables.

Considering that the 2021 sample was obtained from a different source than the others, and to address the possible sample data unrepresentativeness of the population, all the analyses were weighted using poststratification weights to restore population distributions for the last quarter (first quarter in 2021) of each of the four studied years in the Survey of the Economically Active Population, conducted by the Spanish National Statistics Institute,<sup>30</sup> according to gender, age and occupation (CNO94 for years 2005 and 2010, and CNO11 for years 2016 and 2021). STATA V.15 was used for all the analyses.

## RESULTS

The main sociodemographic characteristics of the samples, both with and without weighting, are shown in [table 1](#). Among the different samples, the lower proportion of women and temporary workers in years 2010 and 2021 stands out, coinciding with the crisis periods. An ageing trend can be also observed, with a higher proportion of older workers in each consecutive period, as well as an increasing trend towards non-manual occupations.

The prevalence of poor mental health along the studied periods is shown in [figure 1](#). This prevalence remained quite similar between 2005 and 2010 (around 15%), slightly increased in 2016 (17.72%) and drastically increased in 2021 (55.92%).

**Table 1** Sociodemographic characteristics of the participating salaried population. Spain, 2005–2021 (unweighted and weighted percentages)

	2005			2010			2016			2021		
	n	%	Weighted %	n	%	Weighted %	n	%	Weighted %	n	%	Weighted %
<b>Gender</b>												
Women	3580	49.74	49.84	2239	44.91	44.89	922	51.02	51.02	10 007	53.03	46.22
Men	3617	50.26	50.16	2746	55.09	55.11	885	48.98	48.98	8863	46.97	53.78
<b>Age</b>												
<35	3292	45.74	45	1783	35.77	34.64	493	27.28	26.59	1714	9.08	23.96
35–49	2937	40.81	41.24	2069	41.5	42.51	809	44.77	45.82	8549	45.3	45.75
≥50	968	13.45	13.76	1133	22.73	22.85	505	27.95	27.59	8607	45.61	30.3
<b>Occupational class</b>												
Manual	4501	62.54	59.99	3238	64.95	57.3	1260	69.73	56.49	7076	37.5	51.54
Non-manual	2696	37.46	40.01	1747	35.05	42.7	547	30.27	43.51	11 794	62.5	48.46
<b>Contract</b>												
Permanent	5068	70.49	70.03	3695	74.21	76	1247	69.01	71.3	1535	82.33	79.46
Temporary	2122	29.51	29.97	1284	25.79	23.99	560	30.99	28.7	3335	17.67	20.54

The prevalence of poor mental health and the PRs among the different socioeconomic variables are shown in table 2. Prevalence of poor mental health was higher among women in all the studied periods, increasing in each period from 17.68% in 2005 to 61.97% in 2021 (with PR 1.37 (95% CI 1.22 to 1.54) and PR 1.25 (95% CI 1.20 to 1.30), respectively). When observing the results according to age groups, a change in trend can be observed. Whereas in 2005, 2010 and 2016 the age group with the worst mental health was that of workers over 50 years old (19.27%, 15.88% and 22.41%, respectively), in 2021 it was the one with workers under 35 (62.18%—oldest group PR: 0.76; 95% CI 0.71 to 0.8). In the case of occupational class, manual workers suffered worse mental health in 2005 (16.17%) and 2016 (20.25%) than non-manual workers (PR: 1.23; 95% CI 1.10 to 1.41 and PR: 1.49; 95% CI 1.18 to 1.85, respectively), although these differences decreased in 2010 (PR: 1.14; 95% CI 0.97 to 1.32) and 2021 (PR: 1.02; 95% CI 0.98 to 1.05). Finally, regarding type of contract, a change in trend can be observed. While in 2005 temporary workers suffered worse mental health (17.69%—PR: 1.26; 95% CI 1.11 to 1.43), in

2021 the greater burden of mental health was observed among permanent workers (56.36%—temporary workers PR: 0.9; 95% CI 0.85 to 0.94).

## DISCUSSION

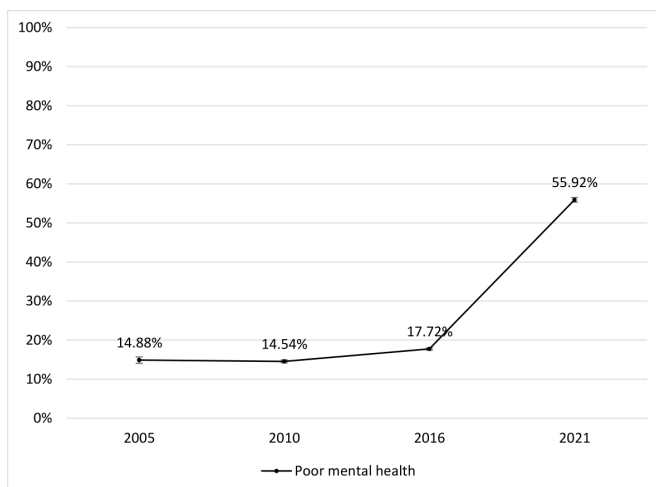
This is the first study to assess the evolution of poor mental health among the Spanish salaried population in several periods of crisis (from 2005 to 2021). Although the 2021 sample was obtained from a different source than the others, the analyses were weighted to address the possible unrepresentativeness.

The main result derived from this study is the steep worsening of the salaried population's mental health status in 2021, compared with the previous years of study. In addition, some pattern changes have been identified according to the observed labour market inequality axes, highlighting the change in trend between age groups, in which younger workers became the most affected in 2021.

### Evolution of poor mental health: alarming situation in 2021

As expected, and in line with previous studies,<sup>7 16 17 19 20</sup> Spanish salaried population's mental health has remarkably worsened in 2021 (with more than half of the salaried population at risk of poor mental health). The main likely cause for this observation may be the pandemic fatigue, being the proper impact of the COVID-19 pandemic on the general population's mental health, bearing in mind, additionally, the consequences of the measures introduced to contain the pandemic at the labour level. Moreover, another contributor to this increase could be the greater access barriers to mental health services in the pandemic context, where the healthcare system is overloaded.

The measures implemented at the labour level to curb the pandemic have radically changed the working conditions of an important proportion of the Spanish working population,<sup>15 25</sup> which have influenced on the detrimental exposure to psychosocial labour risks. Psychosocial risk factors are those derived from labour management practices and related to working conditions that, by means of psychological processes (mainly stress), can lead to both physical and mental illnesses.<sup>31</sup> Emotional demands, quantitative demands, work pace, job loss insecurity or work-family conflict are examples of psychosocial risks whose exposure could have worsened because of the pandemic.<sup>25</sup> It is well known that the origin of these risk factors is in the work



**Figure 1** Adjusted prevalence of poor mental health, according to the Mental Health Inventory (MHI), of the salaried population. Spain, 2005–2021. Weighted data; prevalence estimates adjusted by gender, age, occupational class and type of contract; poor mental health indicates an MHI 36-item Short Form Health Survey (SF-36) score ≤52.

**Table 2** Adjusted prevalence and prevalence ratio of poor mental health (MHI  $\leq 52$ ) by year, gender, age, occupational class and type of contract. Spain, 2005–2021

	2005		2010		2016		2021	
	% (95% CI)	PR (95% CI)	% (95% CI)	PR (95% CI)	% (95% CI)	PR (95% CI)	% (95% CI)	PR (95% CI)
Total	14.88 (14.06 to 15.69)		14.54 (14.16 to 14.93)		17.72 (17.44 to 17.99)		55.92 (55.34 to 56.50)	
Gender								
Men	13.01 (12.29 to 13.73)	1	11.46 (11.03 to 11.88)	1	14.84 (14.77 to 14.91)	1	50.34 (49.87 to 50.80)	1
Women	17.68 (17 to 18.36)	1.37 (1.22 to 1.54)	18.47 (18.22 to 18.72)	1.61 (1.39 to 1.85)	21.29 (20.76 to 21.82)	1.49 (1.22 to 1.85)	61.97 (61.42 to 62.53)	1.25 (1.20 to 1.30)
Age								
<35	14.03 (13.61 to 14.44)	1	13.09 (13.02 to 13.15)	1	14.47 (14.09 to 14.86)	1	62.18 (61.60 to 62.75)	1
35–49	15.77 (15.68 to 15.85)	1.21 (1.06 to 1.37)	15.35 (15.25 to 15.45)	1.21 (1.02 to 1.43)	16.5 (16.33 to 16.66)	1.19 (0.91 to 1.56)	56.96 (56.83 to 57.09)	0.9 (0.86 to 0.96)
≥50	19.27 (19.13 to 19.42)	1.48 (1.25 to 1.74)	15.88 (15.84 to 15.92)	1.27 (1.04 to 1.55)	22.41 (22.28 to 22.54)	1.62 (1.23 to 2.15)	47.81 (47.72 to 47.9)	0.76 (0.71 to 0.8)
Occupational class								
Non-manual	12.99 (12.04 to 13.95)	1	13.87 (13.34 to 14.39)	1	14.33 (14.23 to 14.44)	1	56.37 (55.60 to 57.15)	1
Manual	16.17 (15.30 to 17.04)	1.23 (1.10 to 1.41)	15.01 (14.65 to 15.38)	1.14 (0.97 to 1.32)	20.25 (19.79 to 20.71)	1.49 (1.18 to 1.85)	55.46 (54.88 to 56.04)	1.02 (0.98 to 1.05)
Contract								
Permanent	13.79 (12.81 to 14.76)	1	13.81 (13.29 to 14.32)	1	17.14 (17.05 to 17.22)	1	56.36 (55.64 to 57.07)	1
Temporary	17.69 (16.72 to 18.66)	1.26 (1.11 to 1.43)	16.83 (16.64 to 17.02)	1.17 (0.99 to 1.38)	19.18 (18.56 to 19.80)	1.08 (0.87 to 1.34)	54.01 (53.22 to 54.81)	0.9 (0.85 to 0.94)

Weighted data; total and stratified prevalence (%) and prevalence ratio (PR) adjusted in every case by the rest of the explanatory variables (gender, age, occupational class, type of contract).

MHI, Mental Health Inventory.

organisation, so its exposure could be prevented by improving labour management practices.<sup>32</sup>

Despite all the above, and contrary to previous findings,<sup>33</sup> it is striking that this sharp worsening of the workers' mental health was not observed after the 2008 crisis. In times of crises, those workers in a most vulnerable situation are excluded from the labour market (either unemployed or under the application of an ERTE), so the surviving workers (those who remain active in the labour market) are the ones with better working and health conditions. Therefore, the difference between 2010 and 2021 in the prevalence of poor mental health could be partly explained by the devastating effect of the pandemic on the general population's mental health, where the strains of a health and economic crisis may be greater than those experienced after the 2008 recession.

### Mental health status according to labour market inequality axes

Along all the periods, women present worse mental health than men, in line with other studies<sup>34,35</sup> and coherent with the statement that women's mental health is more susceptible to crises than men's, probably due to the reinforcement of the persisting gender inequalities.<sup>36</sup> These disparities, as reported in the literature,<sup>34</sup> may be explained by the inequalities in the access and participation in the labour market, the more discrimination suffered by women or the sexual division of jobs at the workplace and of caring work at households (differences in reproductive tasks and gender-related roles). Moreover, women are systematically more unemployed in more precarious jobs, and more likely to be exposed to certain psychosocial risks such as high emotional demands, low control and high work–family conflict.<sup>18</sup> Finally, it is well documented that women consume more psychiatric drugs and make more use of healthcare services, thus being probably more affected by the healthcare access barriers experienced in a crisis context.<sup>35</sup>

Regarding age groups, while in 2005, 2010 and 2016, the age group with worse mental health was that of workers aged over 50, in 2021 it was the one with workers under 35. So, young workers were the most affected in the pandemic context, keeping in line with previous studies.<sup>20</sup> This shift could be explained by the intersection between employment precariousness and the consequences of the COVID-19 restrictions, which may have had a greater impact among young people's mental health. Young workers tend to be occupied in more precarious and temporary jobs and are therefore exposed to greater employment and job loss insecurity.<sup>2</sup> In parallel, some consequences of the pandemic such as social isolation or the inability to deal with fear and anxiety have affected young people the most.<sup>37</sup>

An interesting pattern in terms of poor mental health can be also observed regarding occupational class. In 2005 and 2016, we can observe worse mental health among manual workers compared with non-manual workers. Nonetheless, these differences decreased in 2010 and 2021, coinciding with the crisis periods, probably because many manual workers, who are less qualified and in more precarious jobs, have been excluded from the labour market (in 2010, Spain presented the highest unemployment rate in Western Europe,<sup>33</sup> and in 2021 the most precarious workers have been protected from unemployment by the implementation of ERTE). However, essential workers (working at the front line of the pandemic) who are not employed in the health sector are usually in situations of vulnerability or precariousness (they generally include racially diverse, low-skill and low-wage workers who have been at increased risk of infection),

where the pandemic may have worsened an already challenged state of physical and mental health.<sup>38</sup> At the same time, non-manual workers have suffered more changes regarding the work organisation, like the wide implementation of telework, which may have led to a greater exposure to labour psychosocial risks, such as high quantitative demands or high work–family conflict along with low social support.<sup>39</sup> This translates into a sharp increase in poor mental health for both groups, and these results are consistent with the evidence suggesting that COVID-19 is creating new health risks for non-manual workers,<sup>15</sup> but also exacerbating the poor health effects of precarious manual employment.<sup>40</sup>

Finally, regarding the type of contract, while in 2005, 2010 and 2016, temporary workers were the ones with worse mental health, in 2021 the worst mental health status was observed among permanent workers. Most of the front-line workers are employed in the healthcare sector,<sup>18</sup> and these workers, with typically permanent contracts, are the ones who have suffered the most in the pandemic context, as well as other occupations with typically permanent contracts such as teachers.

### Limitations

Contrary to the samples of 2005, 2010 and 2016, the sample of 2021 is not representative of the Spanish salaried population. In 2021, the invitations to participate were delivered only among members of the largest Spanish labour union (CCOO), who may have better working conditions than the general working population. Hence, general working population's mental health in 2021 may be even worse than the stated along this paper. However, to overcome this limitation, data have been weighted according to the Survey of the Economically Active Population. Additionally, the results obtained in this study are consistent with others that also show a high prevalence of poor mental health in 2021.<sup>16 17 19 20 25</sup>

Finally, the MHI cut-off point  $\leq 52$  may underestimate the prevalence of poor mental health, since other studies have used less restrictive values.

### CONCLUSIONS

This is the first study to assess the evolution of poor mental health among the Spanish salaried population in several periods of crises, which has shed light on the steep worsening of mental health among the salaried population in 2021. It illustrates how important it is to monitor workers' mental health, since systematic information will facilitate decision-making and evaluations.

A major conclusion withdrawn from this study is that in 2021 mental health inequalities between groups have apparently narrowed (except for gender inequalities), although this gap has not been narrowed by improving the mental health of typically disadvantaged groups but by worsening mental health of advantaged groups (worse results among younger, non-manual and permanent workers in 2021).

It should be stated that although the MHI provides information about quality of life, it is not a diagnostic tool, so further studies are needed to assess the diagnosed mental health disorders among the salaried population, as well as the long-lasting effects of the pandemic on mental health in the workplace. Additionally, further research is also required to analyse the mental health status of workers on another situation than employed (such as self-employed workers or those working without contract).

There is an urgent need to allocate resources to increase access to adequate mental healthcare, even in times of healthcare system overload. The findings obtained in this study could be useful to

design interventions to improve mental health among the salaried population, since efforts are needed to reduce psychosocial work exposures and change working conditions to protect mental health in the workplace, addressing health inequalities and thus generating beneficial public health effects.

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