



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Contents lists available at ScienceDirect

## Journal of Psychiatric Research

journal homepage: [www.elsevier.com/locate/jpsychires](http://www.elsevier.com/locate/jpsychires)

## What about mental health after one year of COVID-19 pandemic? A comparison with the initial peak

Lorena García-Fernández<sup>a,b,c,\*</sup>, Verónica Romero-Ferreiro<sup>c,d,e</sup>, Victoria Rodríguez<sup>f</sup>, Miguel A. Alvarez-Mon<sup>g,h,i</sup>, Guillermo Lahera<sup>c,g,h,j</sup>, Roberto Rodriguez-Jimenez<sup>c,e,k</sup>

<sup>a</sup> Clinical Medicine Department, Universidad Miguel Hernández, Ctra. de Valencia, Km 87, 03550, San Juan, Alicante, Spain

<sup>b</sup> Department of Psychiatry, Hospital Universitario de San Juan, Ctra. N-332, s/n, 03550, San Juan, Alicante, Spain

<sup>c</sup> CIBERSAM (Biomedical Research Networking Centre in Mental Health), Spain

<sup>d</sup> Department of Psychology, Universidad Europea de Madrid, Spain

<sup>e</sup> Department of Psychiatry, Instituto de Investigación Sanitaria Hospital 12 de Octubre (imas12), Av. Córdoba s/n, 28041, Madrid, Spain

<sup>f</sup> Department of Psychosis Studies, Institute of Psychiatry, Psychology & Neuroscience, King's College, 16 De Crespigny Park, London, SE5 8AF, United Kingdom

<sup>g</sup> Department of Medicine and Medical Specialities, University of Alcalá, 28801, Alcalá de Henares, Madrid, Spain

<sup>h</sup> Ramón y Cajal Institute of Sanitary Research (IRYCIS), 28034, Madrid, Spain

<sup>i</sup> Department of Psychiatry and Mental Health, Hospital Universitario Infanta Leonor, Madrid, Spain

<sup>j</sup> Príncipe de Asturias University Hospital, Alcalá, Madrid, Spain

<sup>k</sup> Universidad Complutense de Madrid (UCM), Plaza Ramón y Cajal, s/n, 28040, Madrid, Spain

## ARTICLE INFO

## Keywords:

COVID-19

Healthcare workers

Mental disorders

Elderly

Gender differences

## ABSTRACT

A psychiatric epidemic has accompanied the COVID-19 pandemic and specific vulnerable populations have been identified. We aimed to explore the presence of anxiety, acute stress and depression among these vulnerable groups after a year of pandemic and relate them to our previous results obtained with the same methodology during the initial peak of the pandemic in Spain.

A total of 2182 participants conducted a national survey, starting on March 2021. Sociodemographic information and clinical symptoms were assessed. The sample was divided into four groups in order to develop four substudies with these results: 1) Healthcare workers presented lower anxiety, acute stress, and depression than non-Healthcare workers ( $p < 0.001$ ), being nurses the most affected. 2) People with mental disorders experienced higher anxiety, acute stress, and depression than people without ( $p < 0.001$ ), as well as a higher rate of COVID cases (14% vs. 9.3%,  $p = 0.041$ ). 3) People  $\geq 60$  years old presented lower anxiety and acute stress than people  $< 60$ , ( $p < 0.05$ ) and a weaker depressive syndrome ( $p = 0.003$ ). 4) Males presented lower anxiety, acute stress and depression than females ( $p < 0.001$ ).

According to the results obtained during the initial peak, Healthcare workers have developed efficient coping strategies, while elders have managed to maintain their previously emotional balance. Notwithstanding, women and people with mental disorders continue to be vulnerable to emotional distress after a year of pandemic. Women and people with mental disorders continue to be especially vulnerable to emotional distress after a year of pandemic.

## 1. Introduction

The COVID-19 pandemic was officially declared on March 11th, 2020. The well-known personal, social, and economic consequences, together with the negative impact on the mental health of the general population, have turned the COVID-19 pandemic into a new form of

traumatic stress (Adhanom Ghebreyesus, 2020; Bridgland et al., 2021; Unützer et al., 2020).

With the purpose to evaluate the emotional consequences that the pandemic has had on different social groups, we designed the PsyCOVID-SanJuan-imas12 project, a cross-sectional national survey starting on March 29 to April 5, 2020, with the aim to analyze the

\* Corresponding author. Department of Clinical Medicine, Universidad Miguel Hernández, Edificio Muhammad Al-Shafra, Campus de San Juan, Ctra. de Valencia, Km 87, 03550, San Juan, Alicante, Spain.

E-mail address: [lorena.garciaf@umh.es](mailto:lorena.garciaf@umh.es) (L. García-Fernández).

<https://doi.org/10.1016/j.jpsychires.2022.07.010>

Received 28 September 2021; Received in revised form 12 June 2022; Accepted 1 July 2022

Available online 5 July 2022

0022-3956/© 2022 Elsevier Ltd. All rights reserved.

psychological impact of the COVID-19 pandemic on vulnerable populations and, its relationship with different environmental variables during the first and to date the worst peak of the pandemic in Spain (García-Fernández et al., 2020a, 2020b, 2021a, 2021b).

Research has suggested that a psychiatric epidemic has accompanied the COVID-19 pandemic (Hossain et al., 2020), at least in the initial phase. Specific population groups most vulnerable to both infection and adverse psychological outcomes have been identified, among which health care workers (HCW) (Fiorillo et al., 2020; García-Fernández et al., 2020a; Walton et al., 2020; Wang et al., 2020), people with previous mental disorders (MD) (Wang et al., 2020; García-Fernández et al., 2021a) and older people (García-Fernández et al., 2020b; Webb, 2021) have been highlighted. Furthermore, HCW and MD specifically, have proven to be at high risk for negative mental health outcomes related to the COVID-19 in the short term (García-Fernández et al., 2020a; García-Fernández et al., 2021b; Walton et al., 2020). In addition, gender differences in response to COVID-19 have also been described (Jin et al., 2020). As opposed to the physical vulnerability observed in men (Gebhard et al., 2020), women have shown a higher emotional impact due to the COVID-19 pandemic (García-Fernández et al., 2021b).

On the one hand, evidence from the present pandemic has shown that HCW have been negatively psychologically affected (Søvdal et al., 2021) compared to the general population, being physicians with fewer years of experience and even more so nurses, the most vulnerable health professionals (García-Fernández et al., 2020a). Moreover, people with previous mental disorders have not only presented an increased risk of infection (Wang et al., 2021), but also an exacerbation of their underlying disorder (Jefsen et al., 2020) with the additional handicap of a decrease in their medical and social protections, which has led to a worsening of their emotional well-being (Moreno et al., 2020). On the other hand, contrary to what might be expected, due to the alarming initial infection and mortality rates, the household isolation and social distancing (Webb, 2021), older people appear to present less emotional distress, with no gender differences during the initial stages of the pandemic (García-Fernández et al., 2020b).

We have already presented results describing the emotional impact among vulnerable population groups during the first peak of the pandemic in Spain within the PsyCOVID-SanJuan-imas12 project (García-Fernández et al., 2020a, 2020b, 2021a; García-Fernández et al., 2021b). Therefore, we consider it necessary to explore what has happened to these same vulnerable groups after a year of pandemic, when the knowledge regarding the virus was clearer and more precise, the rate of infection and death had decreased, the health system was gradually recovering, the mass vaccination campaign was advancing and, social containment measures began to relax. Hence, we have replicated the study and related the results with those published a year earlier. Thus, in the present study carried out after a year of pandemic we aim to explore:

- (1) the presence of symptoms of anxiety, depression, and acute stress among HCW and if these differ among the different health system roles;
- (2) the presence of these symptoms among MD and non-MD, and evaluate if these are associated with differences in COVID-19 infection rates among them;
- (3) the presence of symptoms of anxiety, depression, and acute stress among older people; and finally,
- (4) the existence of gender differences in emotional well-being, all these after a year of pandemic in Spain.

## 2. Methods

### 2.1. Participants and procedure

Participants conducted a national self-reported online questionnaire starting on March 29, 2021, that remained operational for the next ten

days, coinciding with the date of application of the same survey a year before (García-Fernández et al., 2020a), during the peak of the first wave of the pandemic in Spain (World Health Organization Emergency Committee, 2020). Similar to the previous year, the questionnaire was distributed by social networks, applying an exponential non-discriminative snowball sampling (García-Fernández et al., 2020a).

From a total of 2182 questionnaires received, 1895 surveys were collected duly completed. In order to tackle the predefined aims, the sample was subdivided in four different groups:

- i) Among those active workers, we identified the HCW and compared them with all non-health professionals who had also been active during the last year. Thus, up to 520 HCW [284 physicians (60 trainees and 224 seniors), 107 nurses, and 129 other health professionals] were compared to 755 non-HCW. As in our previous study (García-Fernández et al., 2020a) the presence of a current or past mental disorder as well as not having been occupationally active were considered exclusion criteria.
- ii) Regarding mental health history, up to 193 MD were compared with 1182 non-MD. In the same way as we did then, being a HCW was considered an exclusion criterion (García-Fernández et al., 2021a).
- iii) According to their age, 156 people over or equal 60 years old were compared to 1026 people under 60 years old.
- iv) In addition, in order to evaluate gender differences, 398 men were compared to 784 women. As in our previous studies (García-Fernández et al., 2020b; García-Fernández et al., 2021b), the presence of a current or past mental disorder reported, as well as being a HCW were considered exclusion criteria in the third and fourth analysis of results.

The age and gender characteristics of all participants in this four groups are described in Table 1. In this table we also have added the age and gender description of participants in the study performed in the first COVID wave.

Informed consent was provided. The study was approved by the ethics committee. All procedures have been carried out in accordance with the latest version of the Declaration of Helsinki.

### 2.2. Measures

As in our previous study (García-Fernández et al., 2020a), sociodemographic information, as well as whether responders presented symptoms compatible with COVID-19 (suspected cases) or had undergone PCR with a positive result (confirmed cases) was required. The questionnaire included three scales to assess anxiety, depression, and acute stress: Hamilton Anxiety Scale (HARS) (Hamilton, 1959), Beck Depression Inventory (BDI) (Beck, 1988), and the Acute Stress Disorder Inventory (ASDI): consisting of a list of symptoms based on the clinical

**Table 1**

Age and gender distribution of the different groups evaluated in the first peak of the pandemic and the year later in Spain.

	Sociodemographic characteristics of the two different time periods			
	Age (years) [Mean (SD)]		Gender [%Male]	
	March 2020	March 2021	March 2020	March 2021
HCW	39.2 (11.5)	42.8 (12.0)	22.9%	26.5%
Non-HCW	42.1 (10.5)	44.0 (10.7)	36.5%	37.0%
MD	40.5 (14.1)	46.3 (14.6)	31.3%	26.9%
Non-MD	42.4 (13.2)	43.4 (14.6)	31.9%	33.6%
≥60	66.4 (5.4)	67.3 (5.3)	41.3%	39.1%
<60 years	37.8 (11.9)	39.8 (11.8)	30.8%	32.8%
Female	39.4 (14.0)	42.5 (14.3)	–	–
Male	42.8 (14.1)	45.3 (14.9)	31.8%	33.7%

HCW: Health care workers; MD: People with a current or past mental disorder.

criteria of Acute Stress Disorder in the DSM-5 (American Psychiatric Association and American Psychiatric Association, 2013).

### 2.3. Statistical analysis

As in previous studies (García-Fernández et al., 2020a, 2020b, 2021a, 2021b), differences in psychological variables between study groups were tested using Analysis of Variance (ANOVA). Age and gender were included as covariates as appropriate. More precisely, age and gender for HCW and MD differences, gender when restricted to elder sample, and age when analyzing gender differences. Bonferroni corrections for multiple comparisons have been applied when appropriate. Also, chi-squared tests when categorical variables were tested. All statistical analyses were considered to be significant when  $p < 0.05$ .

## 3. Results

Table 2 presents a descriptive summary of the main results obtained in relation to symptoms of anxiety, depression and acute stress; as well as the COVID related data: infection (confirmed or suspected) and, percentage of participants with a family member died due to COVID. The in-depth results for each of the proposed objectives are presented below.

### 1. Clinical differences among working groups and disparities based on HCW roles

The HCW presented lower anxiety (M (SD) 16.1 (10.6) vs 18.8 (11.2);  $F(1, 1271) = 28.60, p < 0.001$ ), acute stress (M (SD) 4.0 (3.1) vs 4.5 (3.1);  $F(1, 1271) = 12.50, p < 0.001$ ) and depression (M (SD) 3.7 (3.8) vs 4.4 (4.5);  $F(1, 1271) = 13.14, p < 0.001$ ) scores than non-HCW. Regarding the latter, no differences in depression were obtained by applying a clinical cut-of 4 (absent or minimal depression v. mild/moderate/severe depression) to BDI responses ( $\chi^2 = 2.53, p = 0.11$ ).

According to the role within the health care system, we observed that nurses scored higher in anxiety ( $F(2, 515) = 19.19, p < 0.001$ ) and stress ( $F(2, 515) = 17.97, p < 0.001$ ) assessments (HARS 21.4 (11.2) v. 13.7 (9.8) v. 16.9 (9.9); ASDI 5.5 (3.2) v. 3.3 (2.9) v. 4.3 (3.1)) than physicians and other professionals, respectively. The differences between physicians and other health professionals were also statistically significant being physicians the group with lower level of symptoms. Relating to depressive symptoms, no differences were found either in mean scores nor when applying the clinical cut-off among roles ( $F(2, 515) = 1.39, p$

**Table 2**  
Summary of the main clinical results and COVID related data.

	Main results			COVID-related data	
	Anxiety [Mean (SD)]	Depression [Mean (SD)]	Acute stress [Mean (SD)]	COVID infection (confirmed; suspected)	Death of a relative
HCW	16.1 (10.6)	3.7 (3.8)	4.0 (3.1)	16.0%; 36.2%	20.4%
Non-HCW	18.8 (11.2)	4.4 (4.5)	4.5 (3.1)	9.8%; 31.5%	17.5%
MD	28.35 (12.3)	9.7 (6.6)	6.4 (3.5)	14.0%; 33.7%	30.1%
Non-MD	18.7 (11.4)	4.9 (4.8)	4.5 (3.1)	9.2%; 29.9%	17.6%
≥60	16.8 (11.9)	3.9 (3.2)	4.2 (4.9)	6.4%; 26.3%	24.4%
<60	19.0 (11.3)	4.6 (3.1)	5.0 (4.8)	9.6%; 30.4%	16.6%
Female	20.4 (11.3)	5.0 (3.1)	5.5 (5.0)	9.8%; 27.4%	19.1%
Male	15.4 (10.8)	3.7 (3.0)	3.7 (4.2)	8.0%; 34.9%	14.6%

HCW: Health care workers; MD: People with a current or past mental disorder.

= 0.25).

We further analyzed differences based on expertise within physicians, but these were not significant in anxiety ( $F(1, 280) = 2.31, p = 0.13$ ), acute stress ( $F(1, 280) = 0.30, p = 0.58$ ) or depression ( $F(1, 280) = 0.06, p = 0.81$ ) symptoms. Finally, when clinical cut-offs score of 4 are applied to BDI, no significant differences were either found ( $\chi^2 = 0.38, p = 0.54$ ).

### 2. Clinical differences among MD and non-MD

Results showed that MD have experienced higher level of anxiety (M (SD) 28.4 (12.3) v. 18.7 (11.4);  $F(1, 1371) = 116.55, p < 0.001$ ), acute stress (M (SD) 6.4 (3.5) v. 4.5 (3.1);  $F(1, 1371) = 56.57, p < 0.001$ ) and depression (M (SD) 9.7 (6.6) v. 4.9 (4.8);  $F(1, 1371) = 159.14, p < 0.001$ ) than non-MD; differences in depression were also confirmed based on cut-off syndrome score of 4 (absent or minimal vs. mild/moderate/severe depression) with a more pronounced depressive syndrome observed in MD compared with non-MD ( $\chi^2 = 72.02, p < 0.001$ ; 74.6% v. 41.8%).

Regarding how these differences could potentially be influenced by COVID-19 contagion rates, we observed higher rate of confirmed cases among MD than non-MD (14% vs 9.3%); and accordingly, more absent cases in non-MD than in MD (60.7% vs 52.3%), ( $\chi^2 = 6.37, p = 0.041$ ).

### 3. Clinical differences regarding age

Participants over 60 years presented significant lower anxiety scores ( $F(1, 1179) = 4.0, p = 0.047$ ; HARS, M (SD) ≥60 16.8 (11.9) v. <60 19.0 (11.3)) and lower acute stress scores ( $F(1, 1179) = 6.15, p = 0.013$ ; ASDI, M(SD) ≥60 3.9 (3.2) v. <60 4.6 (3.1)) than the younger. Despite no significant differences on BDI scores ( $F(1, 1179) = 3.21, p = 0.073$ ; BDI, M(SD) ≥60 4.2 (4.9) v. <60 5.0 (4.8)) were found between age groups, when the clinical cut-off syndrome score was applied, a weaker depressive syndrome in the elderly was observed ( $\chi^2 = 8.98, p = 0.003$ ; 30.8% in ≥60 vs. 43.5% in <60).

### 4. Clinical gender differences

Regarding gender differences, results show that males presented with lower anxiety (M (SD) 15.4 (10.8) v. 20.4 (11.3);  $F(1, 1179) = 49.75, p < 0.001$ ), acute stress (M (SD) 3.7 (3.0) v. 5.0 (3.1);  $F(1, 1179) = 39.12, p < 0.001$ ) and depressive symptoms both in scores (M (SD) 3.7 (4.2) v. 5.5 (5.0);  $F(1, 1179) = 31.25, p < 0.001$ ) and when applying the cut-off score of 4 (absent or minimal vs. mild/moderate/severe depression) ( $\chi^2 = 26.42, p < 0.001$ ; 31.4% v. 47.0%) than females.

In a post-hoc analyses, we further explored if these gender inequalities replicated among those over 60, and we observed that these differences were maintain expect for acute stress, were differences followed the same direction but didn't reach significance (HARS ( $t(151) = 3.33, p = 0.001$ ), BDI ( $t(152) = 2.59, p = 0.011$ ), ASDI ( $t(132) = 1.69, p = 0.094$ )).

Table 3 summarizes the different emotional response regarding the presence of symptoms of anxiety, depression and acute stress in the different study groups, (HCW and non-HCW, MD and non-MD, people equal or over 60 and under 60 and, men and women) in two different periods of time, the first peak pandemic in March 2020 and the year later.

## 4. Discussion

The potential impact of the COVID-19 pandemic on people's mental health is a global concern. Thus, the present study has aimed to explore the emotional status of different vulnerable groups (HCW, MD, and older people), as well as the presence of gender differences in the emotional response one year after the start of the biggest peak of the pandemic in Spain. Overall, we observed that HCW and those over 60 years showed



**Table 3**

Clinical differences within the study groups between the first peak of the pandemic and the year later in Spain.

	Main findings of the emotional impact in two different time periods between the study groups	
	March 2020	March 2021
Differences among working group <b>HCW vs. non-HCW</b>	HCW showed higher levels of anxiety, depression and acute stress compared to other professionals.	HCW showed lower levels of anxiety, depression and acute stress compared to other professionals
Differences among Mental Disorders <b>MD vs. non-MD</b>	MD showed higher levels of anxiety, depression and acute stress compared to non-MD	MD showed higher levels of anxiety, depression and acute stress compared to non-MD
Differences among age groups <b>≥60 vs. &lt;60 years</b>	The older showed lower levels of anxiety, depression and acute stress compared to the youngest.	The older showed lower levels of anxiety, depression and acute stress compared to the youngest.
Gender differences <b>Female vs. male</b>	Women showed higher levels of anxiety, depression and acute stress compared to men.	Women showed higher levels of anxiety, depression and acute stress compared to men.

HCW: Health care workers; MD: People with a current or past mental disorder.

less emotional impact than non-HCW or the youngest, while those with MD as well as females present consistently a worse emotional profile when compared with non-MD and males.

We had hypothesized that one year later, the greater knowledge regarding the behavior of the virus, the relaxation of public restrictions, the recovery of the health system, the appearance of the vaccine, alongside with the implementation of personal coping strategies, may have attenuated the emotional distress that was observed in the initial phases (Li et al., 2020). Indeed, our results do not report a worsening of symptoms of anxiety, depression and acute stress compared to the situation experienced at the beginning of the pandemic, thus, HCW and the oldest appear to be resilient in the face of the pandemic.

Firstly, in the initial phases of the pandemic Spanish HCW headed the list of infected professionals and clearly outnumbered non-HCW in symptoms of acute stress (García-Fernández et al., 2020a). We have observed that, the year later, they disclose lower levels of anxiety, depression and acute stress when compared to other professionals. Undoubtedly, the advancement of science and vaccination have brought calm and a sense of control to this group. Moreover, it could also be expected that after the initial peak, HCW have been able to get used to the new situation that is no longer new and, either they have developed coping strategies or have been able to request specialized help in the specific interventions available in their work environment. Moreover, the stigma perceived by the HCW during the first wave of the COVID-19 outbreak (Grover et al., 2020) seems to have spread over the following year as other social groups have shown to be equally susceptible to infection. However, after a year of pandemic, as in initial stages, the emotional state of nurses, in close contact with patient, continues to be the most delicate within healthcare roles, which warrants further studies exploring the underpinnings of these inequalities.

Secondly, in line with what was observed in the initial stages of the pandemic (García-Fernández et al., 2021b), people with mental disorders continue to present significantly higher levels of anxiety, depression and acute stress compared to non-MD, as has been expected (Sergeant et al., 2020). Regrettably, their emotional well-being has not been a priority area overshadowed by both the epidemic and the health crisis. On the one hand, our results show that after a year of pandemic, MD continue to present higher rates of SARS-CoV-2 infection when compared to non-MD. On the other hand, difficult access to mental health services due to the change experienced in medical attention focused on preventing contagion, the scarce of prevention programs specially designed for MD, social adversity and environmental stress might have diminished even more the mental health of those previously

affected.

Third, similar to what was observed during the first wave (García-Fernández et al., 2020b) older people have been an example of resilience, showing after a year of pandemic, lower levels of anxiety, depression and acute stress than the youngest, despite their physical vulnerability to the virus, the alarming initial mortality rates and the forced isolation. The possible existence of more developed coping mechanisms due to potential previous adversities alongside with the earlier access to vaccination, as well as the higher concern and care received during the pandemic, might have determined that their resilience has persisted as the pandemic has progressed.

Finally, regarding to the existence of emotional gender differences in response to COVID-19, our results suggest that, one year after the outbreak, despite the higher fatality rate found in men (Gebhard et al., 2020), women in Spain report significant greater severity in symptoms of anxiety, depression, and acute stress than men which goes in line with what we observed in the short-term in this country (García-Fernández et al., 2020a, 2020b) and also in other cultures (Almeida et al., 2020; Pinchoff et al., 2020). This emotional gender vulnerability not reported in the elderly during the first peak of the pandemic (García-Fernández et al., 2020b), has been observed however in women over 60 years of age one year after the COVID outbreak in Spain, reflecting the existence of biological, cultural, and social factors that make women more vulnerable to the emotional impact of the pandemic as they are to stress (Altemus et al., 2014).

Strengths of the present study include data collection from a national representative sample of European adults surveyed and analyzed as demographic subgroups (HCW, MD, the elderly, men, and women) exactly one year after the first peak of the pandemic in Spain, which could be potentially transferable to western-like countries. Not only that, but it also provides a comparison of the state of population's mental health between two specific moments of the current pandemic. Nonetheless, results of this study should be interpreted in light of some limitations. First, response bias exist as a voluntary online self-administered survey was applied using a snowball sampling method; and finally, data obtained during this survey do not correspond to the same participants as that obtained during the first peak, which makes it impossible to analyze longitudinal differences.

One year after the start of the pandemic, HCW appear to have been able to develop coping strategies to manage the infectious crisis still existing, while elders have also managed to maintain their previously observed emotional balance. Notwithstanding, women and people with mental disorders continue to be especially vulnerable to emotional distress after a year of pandemic. Therefore, plans combining measures to protect and promote mental health in general population with actions specially designed to guarantee an adequate care for the mental health of those previously affected are highly needed (McDaid, 2021; Kuzman et al., 2020; Stewart and Appelbaum, 2020). Psychiatrists must demand resources to prevent COVID-19 from becoming a mental health epidemic.

### Conflict of interest

Dr. R. Rodriguez-Jimenez has been a consultant for, spoken in activities of, or received grants from: Instituto de Salud Carlos III, Fondo de Investigación Sanitaria (FIS), Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), Madrid Regional Government (S2010/BMD-2422 AGES; S2017/BMD-3740), Janssen-Cilag, Lundbeck, Otsuka, Pfizer, Ferrer, Juste, Takeda, Exeltis, Angelini, Casen-Recordati. Dr. Lahera has been a consultant to or has received honoraria or grants from Janssen-Cilag, Janssen-Cilag, Otsuka-Lundbeck, Lilly, Astrazeneca, CIBERSAM and Instituto de Salud Carlos III Instituto de Salud Carlos III. All other authors declare that they have no conflict of interest.

## Contributors

**Lorena García-Fernández and Roberto Rodríguez-Jimenez:** Conceptualization, Methodology, Investigation, Project administration, Resources. **Verónica Romero-Ferreiro:** Methodology, Data curation, Formal Analysis. **Lorena García-Fernández:** Writing- Original draft preparation. **Roberto Rodríguez-Jimenez:** Supervision. **Verónica Romero-Ferreiro, Victoria Rodríguez, Guillermo Lahera and Miguel A. Alvarez-Mon:** Writing- Reviewing and Editing.

## Role of funding source

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

## Acknowledgments

We thank all participants, especially frontline clinicians who have kindly responded to the survey.

## References

- Adhanom Ghebreyesus, T., 2020. Addressing mental health needs: an integral part of COVID-19 response. *World Psychiatr.: off. J. World Psychiatr. Assoc. (WPA)* 19 (2), 129–130. <https://doi.org/10.1002/wps.20768>.
- Almeida, M., Shrestha, A.D., Stojanac, D., Miller, L.J., 2020. The impact of the COVID-19 pandemic on women's mental health. *Arch. Women Ment Health* 23 (6), 741–748. <https://doi.org/10.1007/s00737-020-01092-2>.
- Altemus, M., Sarvaiya, N., Neill Epperson, C., 2014. Sex differences in anxiety and depression clinical perspectives. *Front. Neuroendocrinol.* 35 (3), 320–330. <https://doi.org/10.1016/j.ynrne.2014.05.004>.
- American Psychiatric Association, American Psychiatric Association, 2013. *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. American Psychiatric Publication, Arlington.
- Bech, P., 1988. Rating scales for mood disorders: applicability, consistency and construct validity. *Acta Psychiatr. Scand. Suppl.* 345, 45–55. <https://doi.org/10.1111/j.1600-0447.1988.tb08567.x>.
- Bridgland, V., Moeck, E.K., Green, D.M., Swain, T.L., Nayda, D.M., Matson, L.A., Hutchison, N.P., Takarangi, M., 2021. Why the COVID-19 pandemic is a traumatic stressor. *PLoS One* 16 (1), e0240146. <https://doi.org/10.1371/journal.pone.0240146>.
- Fiorillo, A., Gorwood, P., 2020. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *Eur. Psychiatr.* 63 (1), e32. <https://doi.org/10.1192/j.eurpsy.2020.35>.
- García-Fernández, L., Romero-Ferreiro, V., López-Roldán, P.D., Padilla, S., Calero-Sierra, I., Monzó-García, M., Pérez-Martín, J., Rodríguez-Jimenez, R., 2020a. Mental health impact of COVID-19 pandemic on Spanish healthcare workers. *Psychol. Med.* 1–3. <https://doi.org/10.1017/S0033291720002019>. Advance online publication.
- García-Fernández, L., Romero-Ferreiro, V., López-Roldán, P.D., Padilla, S., Rodríguez-Jimenez, R., 2020b. Mental health in elderly Spanish people in times of COVID-19 outbreak. *Am. J. Geriatr. Psychiatr.* 28 (10), 1040–1045. <https://doi.org/10.1016/j.jagp.2020.06.027>.
- García-Fernández, L., Romero-Ferreiro, V., Padilla, S., López-Roldán, P.D., Monzó-García, M., Rodríguez-Jimenez, R., 2021a. The impact on mental health patients of COVID-19 outbreak in Spain. *J. Psychiatr. Res.* 136, 127–131. <https://doi.org/10.1016/j.jpsychires.2021.01.028>.
- García-Fernández, L., Romero-Ferreiro, V., Padilla, S., David López-Roldán, P., Monzó-García, M., Rodríguez-Jimenez, R., 2021b. Gender differences in emotional response to the COVID-19 outbreak in Spain. *Brain Behav.* 11 (1), e01934. <https://doi.org/10.1002/brb3.1934>.
- Gebhard, C., Regitz-Zagrosek, V., Neuhauser, H.K., Morgan, R., Klein, S.L., 2020. Impact of sex and gender on COVID-19 outcomes in Europe. *Biol. Sex Differ.* 11 (1), 29. <https://doi.org/10.1186/s13293-020-00304-9>.
- Grover, S., Singh, P., Sahoo, S., Mehra, A., 2020. Stigma related to COVID-19 infection: are the Health Care Workers stigmatizing their own colleagues? *Asian J. Psychiatr.* 53, 102381. <https://doi.org/10.1016/j.ajp.2020.102381>.
- Hamilton, M.A.X., 1959. The assessment of anxiety states by rating. *Br. J. Med. Psychol.* 32 (1), 50–55. <https://doi.org/10.1111/j.2044-8341.1959.tb00467.x>.
- Hossain, M.M., Tasnim, S., Sultana, A., Faizah, F., Mazumder, H., Zou, L., McKyer, E., Ahmed, H.U., Ma, P., 2020. Epidemiology of Mental Health Problems in COVID-19: a Review, 9, p. 636. <https://doi.org/10.12688/fl000research.24457.1>. F1000Res.
- Jefsen, O.H., Rohde, C., Nørremark, B., Østergaard, S.D., 2020. COVID-19-related self-harm and suicidality among individuals with mental disorders. *Acta Psychiatr. Scand.* 142 (2), 152–153. <https://doi.org/10.1111/acps.13214>.
- Jin, J.M., Bai, P., He, W., Wu, F., Liu, X.F., Han, D.M., Liu, S., Yang, J.K., 2020. Gender differences in patients with COVID-19: focus on severity and mortality. *Publ. Health Forum* 8, 152. <https://doi.org/10.3389/fpubh.2020.00152>.
- Kuzman, M.R., Curkovic, M., Wasserman, D., 2020. Principles of mental health care during the COVID-19 pandemic. *Eur. Psychiatr. : J. Assoc. Eur. Psychiatr.* 63 (1), e45. <https://doi.org/10.1192/j.eurpsy.2020.54>.
- Li, S., Wang, Y., Xue, J., Zhao, N., Zhu, T., 2020. The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *Int. J. Environ. Res. Publ. Health* 17 (6), 2032. <https://doi.org/10.3390/ijerph17062032>.
- McDaid, D., 2021. Viewpoint: investing in strategies to support mental health recovery from the COVID-19 pandemic. *Eur. Psychiatr. : J. Assoc. Eur. Psychiatr.* 64 (1), e32. <https://doi.org/10.1192/j.eurpsy.2021.28>.
- Moreno, C., Wykes, T., Galderisi, S., Nordentoft, M., Crossley, N., Jones, N., Cannon, M., Correll, C.U., Byrne, L., Carr, S., Chen, E., Gorwood, P., Johnson, S., Kärkkäinen, H., Krystal, J.H., Lee, J., Lieberman, J., López-Jaramillo, C., Männikkö, M., Phillips, M. R., et al., 2020. How mental health care should change as a consequence of the COVID-19 pandemic. *Lancet Psychiatr.* 7 (9), 813–824. [https://doi.org/10.1016/S2215-0366\(20\)30307-2](https://doi.org/10.1016/S2215-0366(20)30307-2).
- Pinchoff, J., Santhya, K.G., White, C., Rampal, S., Acharya, R., Ngo, T.D., 2020. Gender specific differences in COVID-19 knowledge, behavior and health effects among adolescents and young adults in Uttar Pradesh and Bihar, India. *PLoS One* 15 (12), e0244053. <https://doi.org/10.1371/journal.pone.0244053>.
- Sergeant, A., van Reekum, E.A., Sanger, N., Dufort, A., Rosic, T., Sanger, S., Lubert, S., Mbuagbaw, L., Thabane, L., Samaan, Z., 2020. Impact of COVID-19 and other pandemics and epidemics on people with pre-existing mental disorders: a systematic review protocol and suggestions for clinical care. *BMJ Open* 10 (9), e040229. <https://doi.org/10.1136/bmjopen-2020-040229>.
- Søvdal, L.E., Naslund, J.A., Kousoulis, A.A., Saxena, S., Qoronfleh, M.W., Grobler, C., Minter, L., 2021. Prioritizing the mental health and well-being of healthcare workers: an urgent global public health priority. *Publ. Health Forum* 9, 679397. <https://doi.org/10.3389/fpubh.2021.679397>.
- Stewart, D.E., Appelbaum, P.S., 2020. COVID-19 and psychiatrists' responsibilities: a WPA position paper. *World Psychiatr. : off. J. World Psychiatr. Assoc. (WPA)* 19 (3), 406–407. <https://doi.org/10.1002/wps.20803>.
- Untzter, J., Kimmel, R.J., Snowden, M., 2020. Psychiatry in the age of COVID-19. *World Psychiatr. : off. J. World Psychiatr. Assoc. (WPA)* 19 (2), 130–131. <https://doi.org/10.1002/wps.20766>.
- Walton, M., Murray, E., Christian, M.D., 2020. Mental health care for medical staff and affiliated healthcare workers during the COVID-19 pandemic. *Eur. Heart J. Acute Cardiovasc. Care* 9 (3), 241–247. <https://doi.org/10.1177/2048872620922795>.
- Wang, S., Wen, X., Dong, Y., Liu, B., Cui, M., 2020. Psychological influence of Coronavirus disease 2019 (COVID-19) pandemic on the general public, medical workers, and patients with mental disorders and its countermeasures. *Psychosomatics* 61 (6), 616–624. <https://doi.org/10.1016/j.psych.2020.05.005>.
- Wang, Q., Xu, R., Volkow, N.D., 2021. Increased risk of COVID-19 infection and mortality in people with mental disorders: analysis from electronic health records in the United States. *World Psychiatr.* 20 (1), 124–130. <https://doi.org/10.1002/wps.20806>.
- Webb, L., 2021. COVID-19 lockdown: a perfect storm for older people's mental health. *J. Psychiatr. Ment. Health Nurs.* 28 (2), 300. <https://doi.org/10.1111/jpm.12000>.
- World Health Organization (WHO) Emergency Committee, 2020. Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV). WHO, Geneva. Available from: [https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)).

## Update

### **Journal of Psychiatric Research**

Volume 154, Issue , October 2022, Page 10

DOI: <https://doi.org/10.1016/j.jpsychires.2022.07.027>



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

## Journal of Psychiatric Research

journal homepage: [www.elsevier.com/locate/jpsychires](https://www.elsevier.com/locate/jpsychires)



### Corrigendum to “What about mental health after one year of COVID-19 pandemic? A comparison with the initial peak” [J. Psychiatr. Res. 153 (2022) 104–108]

Lorena García-Fernández<sup>a,b,c,\*</sup>, Verónica Romero-Ferreiro<sup>c,d,e</sup>, Victoria Rodríguez<sup>f</sup>, Miguel A. Alvarez-Mon<sup>g,h,i</sup>, Guillermo Lahera<sup>c,g,h,j</sup>, Roberto Rodríguez-Jimenez<sup>c,e,k</sup>

<sup>a</sup> Clinical Medicine Department, Universidad Miguel Hernández, Ctra. de Valencia, Km 87, 03550, San Juan, Alicante, Spain

<sup>b</sup> Department of Psychiatry, Hospital Universitario de San Juan, Ctra. N-332, s/n, 03550, San Juan, Alicante, Spain

<sup>c</sup> CIBERSAM (Biomedical Research Networking Centre in Mental Health), Spain

<sup>d</sup> Department of Psychology, Universidad Europea de Madrid, C. Tajo s/n, Villaviciosa de Odón, 28670, Madrid, Spain

<sup>e</sup> Department of Psychiatry, Instituto de Investigación Sanitaria Hospital 12 de Octubre (imas12), Av. Córdoba s/n, 28041, Madrid, Spain

<sup>f</sup> Department of Psychosis Studies, Institute of Psychiatry, Psychology & Neuroscience, King's College, 16 De Crespigny Park, London, SE5 8AF, United Kingdom

<sup>g</sup> Department of Medicine and Medical Specialities, University of Alcalá, 28801, Alcalá de Henares, Madrid, Spain

<sup>h</sup> Ramón y Cajal Institute of Sanitary Research (IRYCIS), 28034, Madrid, Spain

<sup>i</sup> Department of Psychiatry and Mental Health, Hospital Universitario Infanta Leonor, Madrid, Spain

<sup>j</sup> Príncipe de Asturias University Hospital, Alcalá, Madrid, Spain

<sup>k</sup> Universidad Complutense de Madrid (UCM), Plaza Ramón y Cajal, s/n, 28040, Madrid, Spain

The authors regret <the affiliations of Verónica Romero-Ferreiro were not updated>.

The authors would like to apologise for any inconvenience caused.

DOI of original article: <https://doi.org/10.1016/j.jpsychires.2022.07.010>.

\* Corresponding author. Department of Clinical Medicine, Universidad Miguel Hernández, Edificio Muhammad Al-Shafra, Campus de San Juan, Ctra. de Valencia, Km 87, 03550, San Juan, Alicante, Spain.

E-mail address: [lorena.garciaf@umh.es](mailto:lorena.garciaf@umh.es) (L. García-Fernández).

<https://doi.org/10.1016/j.jpsychires.2022.07.027>

Available online 20 July 2022

0022-3956/© 2022 Published by Elsevier Ltd.