

# Psychological distress and associated factors related to COVID-19 pandemic among primary care physicians in Spain (STREPRIC study)

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## Research article

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## Abstract

**Background** The COVID-19 pandemic is affecting people in all nations worldwide. In Spain, the epidemic has become especially severe. The lack of protective measures is a major concern and may have caused emotional stress to Primary Care Physicians (PCPs). This study aimed to address the sources of psychological distress among Spanish PCPs during the COVID-19 pandemic.

**Methods** This observational, cross sectional study was conducted using a survey questionnaire that consisted of 24 expressions to be answered by PCPs working in family healthcare centres in Spain during the pandemic. A specific scale, the "Examination of Anomalous Self-Experience", EASE scale was used to determine the distress related to the care of COVID-19 patients among Spanish PCPs. A multivariate linear regression analysis was performed.

**Results** In all, 518 PCPs belonging to different regions of Spain participated in this survey, of which 123 (23.7%) obtained high psychological distress scores. Only half of them had received information about the appropriate use of personal protective equipment (PPE). PCPs factors associated with higher levels of distress include female gender (1.69; CI 0.54, 2.84); Age (-0.43 (-0.61, 1.48)); working setting (rural) (0.84 (-0.34, 2.01)); lack of training in protective measures (1.96 (0.94, 2.99)). The absence of sick leave among colleagues, increased availability of PPEs, improved cleaning and hygiene conditions in health care centers facilities and the detection of COVID-19 RT-PCR for health care workers were associated with lower levels of distress.

**Conclusions** One in four PCPs rated a high score for psychological distress. The availability of PPEs, training on their use, cleanliness and hygiene conditions in health care facilities and the availability of COVID-19 RT-PCR analyses for health workers, among others, are factors associated with the psychological distress of PCPs.

## Background

The COVID-19 pandemic is affecting people of all nations worldwide [1]. In Spain, the epidemic has become especially severe (until October 23<sup>rd</sup> more than a million diagnosed COVID-19 patients, estimation of more than 50,000 deaths for a country of 46 million inhabitants), the reasons for which can be manifold [2].

Nevertheless, Spain has the highest life expectancy at birth among European nations [3]. In addition, the 2019 edition of the Bloomberg Healthiest Country index ranked it as the world's healthiest country [4]. It is debated that primary care in Spain is essentially provided by public providers, specialised family doctors, and staff nurses, who provide preventive care to children, women, and elderly patients, along with acute and chronic care. However, Spain has 5,106 confirmed cases/one million inhabitants, which is the highest rate all over the worldwide (during the first outbreak, 29th, April 2020) [5]. As reported by the European Centre for Disease Prevention and Control, 20% of registered coronavirus cases in Spain are healthcare workers, compared with 10% in Italy, 3% in the United States, and 3.8% in China.

The pandemic has tested the Spanish health system and its professionals. Different stressors affecting PCPs such as burnout, working in crises and other reported stressors have been reported. Shanafelt et al [6] has recently described 8 sources of anxiety: lack of protective equipment, being exposed at work, not having rapid access to testing, uncertainty that their organization will support care, access to child care if schools are closed, support for other personal needs, provide competent medical care in different areas, and lack of information. The lack of protective measures, increased workload, and changing their roles rapidly may have caused them distress. Therefore, it is crucial to understand the specific sources of distress among Primary Care Physicians (PCPs) in Spain to possibly decrease their psychological stress. This study aimed to address the sources of distress among Spanish PCPs during the COVID-19 pandemic.

## Methods

### Sampling and recruitment

This was a cross-sectional online survey aimed to recruit a diverse sample of PCPs

practicing in urban and rural settings across Spain. The survey was distributed from 18 to 25 April via PCPs networks and organisations. Participation was voluntary and required informed consent. We identified two organisations with PCPs networks across Spain: red for the study of diabetes in Primary Care (redGDPS) and the Spanish Family Physician Society (semFYC). Each organisation was requested to promote the survey at least once in their newsletter and/or website. The platform to respond was kept open until the required sample size was reached.

### Survey design and data collection

We designed a survey titled 'STREPRIC study' STREss factors among PRImary Care physicians in Spain. Demographic characteristics, work conditions, and distress scale were investigated in this survey.

A specific scale, the "Examination of Anomalous Self-Experience", EASE scale was used to determine the distress related to the care of COVID-19 patients among Spanish PCPs. The scores ranged from 0 to 30, establishing 4 ranges: 0-9 for good emotional adjustment, 10-14 for emotional distress, 15-24 for emotional overload, and 25 and above for extreme acute stress.

This scale had recently been validated by our research group following the COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) [7] checklist to evaluate the methodological quality of studies on the measurement properties of health status instruments. Its reliability, content validity, construct validity, criterion validity responsiveness, and interpretability were found to be appropriate [8]. Its usefulness can be twofold; first, it can help

professionals to become aware of the emotional overload they may be enduring, and second, it can be used to measure the degree of affectation in order to avoid the progression towards more severe psychopathological conditions.

The survey was administered using Google forms and was sent directly to PCPs from the two organizations mentioned (redGDPS and semFyC). Approval of the ethics was granted by the Ethics Committee of the San Juan University Hospital in Alicante.

### Statistical analysis approach

Assuming a conservative estimation that 25% of the PCPs would rate a high score for psychological distress, the study would require a sample of at least 441 PCPs for estimating the expected proportion with 4% absolute precision and 95% confidence interval. Categorical variables were analysed using the Chi-squared or Fisher Exact Test. An ANOVA test was conducted to analyse quantitative variables. A multivariate linear regression analysis was carried out, where the EASE score was considered as a dependent variable, and the factors included sex, age, setting (rural vs urban), and whether the PCP had been trained to apply the adequate protective measures. Data analysis was performed using SPSS v.26 statistical software.

## Results

A total of 518 PCPs belonging to different regions of Spain responded to the survey. The majority were females (70.8%) and those working urban areas (71.4%). All the PCPs had observed their pattern of action change during the critical phase of the pandemic (moving to telephone care). During this period, care for patients with chronic conditions and home visits were reduced (Table 1). Approximately half of the PCPs were trained in the use of Personal Protective Equipment (PPE) (45.8%). Most of them, received PPE thanks to the collaboration of entities that donated material (66.6%) (Table 1).

The mean direct score on the distress scale was 10.31 points (SD 6.01, CI95% 9.79-10.83) (Table 2). In all, 123 (23.7%) PCPs scored above 15 points. The main sources of distress included the fear of infecting the family upon returning home and not being able to disconnect from work after the workday was over (Table 2).

Women, younger professionals, those working in rural areas, and PCPs who had not received training in the correct use of PPEs reported the highest level of distress in the care of patients with COVID-19 (Table 3).

The improved cleanliness and hygiene of the health centre, availability of PPEs and the availability of doctors at work helped to mitigate the distress. The origin of PPEs (the Health Service itself or the donations) did not affect the levels of distress. Systematic reverse-transcription polymerase chain reaction (RT-PCR) testing of PCPs (reported by 150 physicians) reduced fear and anxiety responses ( $p=0.032$ ).

## Discussion

During the COVID-19 pandemic, the usual dynamics of work in primary care (personalised and individualised attention in the clinic, follow-up by the same family doctor) were broken. Usual care was also discontinued, except in cases involving consultations, unproven emergencies, or common variable immunodeficiency related pathologies [9]. The availability of PEP was reduced to decrease the risk of infection, especially in the early stages. A quarter of the participants reported experiencing acute stress, which was more intense when there was a perceived increased risk of SARS-CoV-2 infection.

Regarding specific training in the use of PPEs, we found a clear lack of training in the health professionals surveyed. Less than half received specific training on the use and correct placement of PPEs. This contrasts with World Health Organization's recommendations that specify the need for prior training for workers who will be using PPEs [9]. This is also supported by studies that report the consequences of lack of training; the FREMAP study conducted in 2011 concluded that only 13.6% of professionals had used PPEs correctly, largely due to the absence of training programmes and their insufficient content [10].

At the time of writing, April 2020, scientific societies throughout Europe, such as the Royal College of Surgeons in England and the European Society of Intensive Care Medicine, conducted different surveys to find out about the protection measures of the health care workers, as well as their level of prior training. At the moment, we are unaware of the current situation of training in the use of PPEs among European health care workers. However, it is worth noting that during the Ebola health crisis, several studies revealed a lack of training of health workers in the use of PPEs [11-15].

The protocols developed by the Spanish Ministry of Health for the management of COVID-19 specify that PPEs must be composed of standard and contact precautions, along with precautions for transmission by drops [16]. This contrasts with the results obtained, according to which more than half of those surveyed stated that they had supplemented their PPEs through donations. About 40% of the participants reported having incomplete PPEs, thus exposing their safety and highlighting the lack of resources to which they had been subjected while providing care to COVID-19 patients. It should also be noted that on the date of the survey, i.e. 42 days after the state of emergency was declared, some health professionals still reported that they did not have adequate protective equipment.

These data are consistent with the information that the Ministry of Health has included in the document of 'Procedure for action for occupational risk prevention services against exposure to SARS-CoV-2', an annex specifying 'alternative strategies in crisis situations' [17] in order to provide alternatives in situations where resources are limited, supporting in this way, the results obtained in the survey. The lack of availability of adequate protection material, as well as the possibility that some of the donations received may not have passed through the adequate quality certification could have contributed decisively to the high number of healthcare providers infected by COVID-19 in Spain, emphasising the fact that health professionals did not perceive increased stress because this material was donated.

Regarding the questions on the distress scale, it was highlighted that despite being capable of dealing with stressful situations, considering that such situations are part of their normal work routine, 23.7% (n = 123) of the participants obtained a score higher than 15 on the acute stress scale validated in COVID-19 patient care, with an average score of 10.31 points. This indicates that the majority of them would find themselves in an emotionally distressing situation, with a high percentage of participants in a situation of emotional overload. The main sources of stress included ability to infect the family on returning home and inability to disconnect from the workplace. Since the beginning of the outbreak, its impact on the mental health of the healthcare workforce has usually been pointed-out among the hospital professionals [18-22].

These results underline this effect also in primary care. Moreover, these results show a similar trend confirming the fear of infecting the family and not being able to disconnect at the end of the shift the two consequences most often cited by professionals as signs of distress. The first study in 4 Latin American countries using this same scale found, among professionals working in primary care, an overall average score of 9.5, slightly lower than that found in this study [23]. When making comparisons it is necessary to consider the incidence of COVID-19 in each of the countries as the level of acute stress has been directly related to care pressure [23].

On the other hand, despite the stress levels, most participants believed that they could continue to maintain their decision-making capacities as well as their abilities to empathise with patients.

Among the factors associated with a higher level of distress, female sex, work in rural settings, and younger professionals were particularly prominent. With regard to younger professionals, this could be justified by the lack of work experience and of dealing with critical situations, as well as the fact of not having faced previous situations with similar characteristics, such as the health crises of Ebola, SARS, or Influenza A. However, the youth did not seem to have had higher levels of job stress in general, which is in line with other studies. On the other hand, different studies have related the female sex with a greater emotional involvement in different analyses involving labour. Moreover, it has been established that women are twice as likely to experience negative emotions in stressful situations than men [24].

Additionally, it was found that the participants who did not receive specific training in the use of PPE reported higher levels of distress, which shows the emotional impact that lack of training on available resources can produce in the perception of work stress, which has also been confirmed in previous studies on the emotional impact on the health work environment [25-27]. Regarding rural health workers, there are no previous studies that indicate higher levels of stress as compared to urban health workers. However, some determining factors that generally increase their stress levels have been identified in other studies, such as role overload and ambiguity. These factors were undoubtedly experienced during the acute phase of the pandemic [27].

On the other hand, in this study, several factors were identified that contributed to mitigating the level of perceived distress among the participants. These included availability of PPEs, reinforcement in the cleaning and hygiene tasks of the health care centres, and absence of health workers on sick leaves due to COVID-19. Likewise, performing COVID-19 RT-PCR significantly reduced fear and anxiety responses. These data emphasise the need to provide material resources as well as tests to health care professionals involved in the management of COVID-19 patients in order to improve their distress levels. These results confirm previous conclusions from studies conducted in other countries during the pandemic [28].

Regarding the representativeness of the physicians who responded, it was observed that the age ranges of the participants were mostly between 30-64 years, clearly representing the professionals involved in healthcare, especially in primary care in Spain. There is a clear predominance of the female sex, a fact that may be due to the predominance of females among the healthcare professions. Thus, a 2018 study estimated that the average age of PCPs in Spain was 49.2 years, involving 61.6% women [29].

Regarding the impact that COVID-19 has had on the work structure, our study highlights the changes made in the healthcare model by PCPs in health care centres during the acute phase of the pandemic. Telephonic consultation has become a main function, reducing the follow-up of chronic patients. This highlights the need to provide primary care professionals with telemedicine tools that would allow better management of chronic healthcare demands.

As compared with other countries, on April 11, 2020, Spain had a mortality rate as high as 352 / million inhabitants, Italy 329, France 201, The Netherlands 155, United Kingdom 147, Switzerland 118, United States 57, Iran 53, Portugal 46, Germany 33, Turkey 12, Brazil 5 and the world average rate was 14 / million inhabitants [5].

Regarding other situations like attending American veterans from Irak war, only 20% of the primary care providers rated their mental health treatment skills as high and only about 8% reported that they had adequate knowledge of current mental health treatment strategies [30].

There are several limitations of this study. Its objective was not to achieve a representativeness of all the regions of the country, but to reach a minimum number of surveys that were diverse in a short time. This would help in understanding the situation first hand and providing relevant information in a short time in order to contribute points of reflection for an improvement plan in the situation related to COVID-19. Similarly, the survey was sent to PCPs linked to various scientific societies, who were especially motivated regarding the subject. Although there may be some common elements with other health emergencies (following a terrorist attack with multiple victims, natural disaster, or war) and there are some differences which mean that comparisons should be made with caution. Among others absence of guidelines and protocols, risks for relatives when returning home, continuous negative news in all media, all over the World, and during the first days of the outbreak home confinement when returning home.

Among the strengths of the study, it is worth highlighting the large sample size, representing various PCPs with different conditions and workplaces involved in health care and distributed throughout the Spanish geography. Similarly, the questionnaire developed by the research team was previously tested to examine its suitability, and was endowed with necessary validation. It was prepared and reviewed by professionals with extensive knowledge and experience on the subject.

To our knowledge, this is the first study carried out to determine the emotional impact and perception of distress of PCPs during management of the COVID-19 pandemic in Spain, as well as its relationship with the lack of adequate PPEs and specific protection measures required for this situation. This is a key aspect since it represents one of the groups with the highest number of people infected internationally by the COVID-19 pandemic.

## Conclusions

One in four PCPs rated a high score for psychological distress. The availability of PPEs, training in their use, cleanliness and hygiene conditions in health care facilities, and the availability of COVID-19 RT-PCR analyses for health workers among others were the factors associated with the psychological distress of PCPs.

## Abbreviations

PCPs: Primary Care Physicians

PPE: Personal Protective Equipment

COSMIN: COnsensus-based Standards for the selection of health Measurement Instruments

EASE scale: Examination of Anomalous Self-Experience

redGDPS: red for the study of diabetes in Primary Care

semFYC: Spanish Family Physician Society

RT-PCR: Reverse-transcription polymerase chain reaction

## Declarations

### Ethics approval and consent to participate

Ethics approval was granted by The Alicante's San Juan Hospital Human Ethics Committee (Ref: 2020/084). Written informed consent without the participant's name was obtained electronically via the online survey platform before they could proceed to complete the survey.

### Consent for publication

De-identified data were published in aggregate. All participants provided consent for publication when they provided the consent for online participation.

### Availability of data and materials

Data are not publicly available due to the lack of consent from participants to share it beyond this study.

### Competing interests

The author(s) declare that they have no competing interests.

### Funding

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### Authors' contributions

AC and DO conceptualised and led the study. AC, AG, and EC collected the data. DO, JM, and AC conducted the initial analysis and wrote the initial drafts of the paper. AC, DO, JM, EC, and AG contributed to validating the analysis, and reviewing and contributing to drafts. All authors read and approved the final manuscript.

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## References

1. Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. *JAMA*. 2020 Apr 21;323(15):1439-1440. doi: 10.1001/jama.2020.3972. PMID: 32163102.
2. Instituto de Salud Carlos III, RENAVE, CNE, CNM. The COVID situation in Spain (21th, April 2020). Report number 24. Available at: <https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Documents/INFORMES/Informes%20COVID-19/Informe%20n%C2%BA%2024.%20Situaci%C3%B3n%20de%20COVID-19%20en%20Espa%C3%B1a%20a%2021%20de%20abril%20de%202020.pdf>. Last visit: 29th, April 2020.

3. Life expectancy and healthy life expectancy. Data by country. Available at: <https://apps.who.int/gho/data/view.main.SDG2016LEXREGv?lang=en>. Last visit: 29th, April 2020.
4. Miller LJ, Wei Lu The Bloomberg Healthiest Country Index. The 2019 edition. Available at: <https://www.bloomberg.com/news/articles/2019-02-24/spain-tops-italy-as-world-s-healthiest-nation-while-u-s-slips>. Last visit: 29th, April 2020.
5. The Johns Hopkins University. Coronavirus resource center. Available at: <https://coronavirus.jhu.edu/map.html>. Last visit: 29th, April 2020.
6. Shanafelt T, Ripp J, Trockel M. Understanding and Addressing Sources of Anxiety Among Health Care Professionals During the COVID-19 Pandemic. 2020 Jun 2;323(21):2133-2134. doi: 10.1001/jama.2020.5893. PMID: 32259193.
7. Mokkink, LB, Terwee, CB, Patrick DL, et al. The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: an international Delphi study. . Qual Life Res. 2010 May;19(4):539-49. doi: 10.1007/s11136-010-9606-8. Epub 2010
8. Mira JJ, Cobos Vargas A, Martínez García OB. Grupo de Trabajo Segundas Víctimas del SARS-CoV-2. Estudio de validación de escala de Estrés Agudo en la atención a pacientes con COVID-19. In press.
9. World Health Organization. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages Interim guidance. 6 April 2020. Available at: [https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-\(covid-19\)-and-considerations-during-severe-shortages](https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-and-considerations-during-severe-shortages). Last visit: 29th, April 2020.
10. Eficacia en la utilización de los equipos de protección respiratoria. Evaluación cuantitativa del ajuste facial en mascarillas autofiltrantes. FREMAP 2011. Available at: <https://prevencion.fremap.es/Documentos%20observatorio%20siniestralidad/Estudio%20eficacia%20equipos%20proteccion%20respiratoria.pdf>. Last visit: 29th, April 2020.
11. Tomas ME, Kundrapu S, Thota P, et al. Contamination of Health Care Personnel During Removal of Personal Protective Equipment. JAMA Intern Med. 2015 Dec;175(12):1904-10. doi: 10.1001/jamainternmed.2015.4535. PMID: 26457544.
12. Doll M, Bearman GM. The Increasing Visibility of the Threat of Health Care Worker Self-contamination. Invited Commentary. JAMA Intern Med. Published online Oct. 12, 2015. . JAMA Intern Med. 2015 Dec;175(12):1911-2. doi: 10.1001/jamainternmed.2015.5457. PMID: 26458256.
13. Nash D, Jagger J, Mitchell AH. Guest Commentary: Protecting our healthcare workers now. Modern Healthcare 21, 2014. Available at: <http://bit.ly/1GlpdHU>. Last visit: 29th, April 2020.
14. John A, Tomas ME, Cadnum JL, et al. Are health care personnel trained in correct use of personal protective equipment? Am J Infect Control. 2016 Jul 1;44(7):840-2. doi: 10.1016/j.ajic.2016.03.031. Epub 2016 May 12. PMID: 27181222.
15. Preventing Transmission of Pandemic Influenza and Other Viral Respiratory Diseases: Personal Protective Equipment for Healthcare Personnel: Update 2010. Institute of Medicine (US) Committee on Personal Protective Equipment for Healthcare Personnel to Prevent Transmission of Pandemic Influenza and Other Viral Respiratory Infections: Current Research Issues; Editors: Elaine L. Larson and Catharyn T. Liverman. Washington (DC): National Academies Press (US); 2011.
16. Ministerio de Sanidad España. Procedimiento de actuación frente a casos de infección por el nuevo coronavirus (sars-cov-2) Actualizado a 11 de abril de 2020. Available at: [https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/PrevencionRRL\\_COVID-19.pdf](https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/PrevencionRRL_COVID-19.pdf). Last visit: 29th, April 2020.
17. Ministerio de Sanidad. España. Procedimiento de actuación para los servicios de prevención de riesgos laborales frente a la exposición al sars-cov-2 8 de abril de 2020. Available at: [https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/PrevencionRRL\\_COVID-19.pdf](https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/PrevencionRRL_COVID-19.pdf). Last visit: 29th, April 2020.
18. Lai J, Ma S, Wang Y, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020 Mar 2;3(3):e203976. doi: 10.1001/jamanetworkopen.2020.3976. PMID: 32202646; PMCID: PMC7090843.
19. Zhang C, Yang L, Liu S, et al. Survey of Insomnia and Related Social Psychological Factors Among Medical Staff Involved in the 2019 Novel Coronavirus Disease Outbreak. *Front Psychiatry* 2020;11:306. doi: 10.3389/fpsy.2020.00306;
20. Pappa S, Ntella V, Giannakas T, et al. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun*. 2020 Aug;88:901-907. doi: 10.1016/j.bbi.2020.05.026. Epub 2020 May 8. PMID: 32437915; PMCID: PMC7206431.
21. Qi J, Xu J, Li BZ, et al. The evaluation of sleep disturbances for Chinese frontline medical workers under the outbreak of COVID-19. *Sleep Med* 2020;72:1-4. doi: 10.1016/j.sleep.2020.05.023;
22. Rossi R, Soggi V, Pacitti F, et al. Mental Health Outcomes Among Frontline and Second-Line Health Care Workers During the Coronavirus Disease 2019 (COVID-19) Pandemic in Italy. *JAMA Netw Open* 2020;3:e2010185. doi:10.1001/jamanetworkopen.2020.10185
23. Mira J, Carrillo I, Guilabert M, et al. Acute Stress of the Healthcare Workforce during the COVID-19 pandemic evolution. A cross-sectional study in Spain. *BMJ Open*. In press.

24. Hadziolova I. La edad y el sexo en relación con el estrés profesional. En: Kalimo R, El-Batawi MA, Cooper CI, compiladores. Los factores psicosociales en el Ginebra: OMS 1988;p. 138-47.
25. Segovia O, Segado Sánchez-Cabezudo A, García-Castilla S, et al. Inclusión social, mercado de trabajo y salud laboral: perspectiva sobre el estrés laboral en los jóvenes españoles, Madrid: Ministerio de Trabajo y Asuntos Sociales. INJUVE-INSHT, 2006. Available at: <http://www.injuve.es/sites/default/files/ESTRES%20LABORAL.pdf>. Last visit: 29th, April 2020.
26. Aguado JI, Bátiz A, Quintana S. The stress in the hospital sanitary personnel; current status. *Med Segur Trab (Internet)* 2013; 59 (231) 259-275. Available at: [http://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S0465-546X2013000200006](http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0465-546X2013000200006). Last visit: 29th, April 2020.
27. Casas J, Repullo JR, Lorenzo S. Estrés laboral en el medio sanitario y estrategias adaptativas de afrontamiento. *Rev Calidad Asistencial* 2002;17(4):237-46. Available at: <https://www.elsevier.es/es-revista-revista-calidad-asistencial-256-sumario-vol-17-num-4-S1134282X02X71115>. Last visit: 29th, April 2020.
28. Steve K, Nicola W, Laura Mc, Christine D, Irene H, Dan et al S, et al. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis *BMJ* 2020;369:m1642. <http://dx.doi.org/10.1136/bmj.m1642>
29. Del Pozo-Sosa G, García-Pérez M, León-Santana M, et al. Estudio sobre Demografía Médica. PL Madrid. Grupo Análisis e Investigación (2018). Available at: [https://www.cgcom.es/revistaOMC/julio\\_2018//files/assets/common/downloads/publication.pdf?uni=b168dde5e1d0666afe34599bbf7bdf90](https://www.cgcom.es/revistaOMC/julio_2018//files/assets/common/downloads/publication.pdf?uni=b168dde5e1d0666afe34599bbf7bdf90). Last visit: 29th, April 2020.
30. Boscarino JA, Larson S, Ladd I, Hill E, Paolucci SJ. Mental health experiences and needs among primary care providers treating OEF/OIF veterans: preliminary findings from the Geisinger Veterans Initiative. *Int J Emerg Ment Health*. 2010 Summer;12(3):161-70. PMID: 21473366.

## Tables

**Table 1. Descriptive analysis of the sample (n=518)**

<b>Characteristics of Primary Care Professionals</b>		
Gender	N	%
Female	367	70.8
Male	151	29.2
<b>Age</b>		
<30 years	16	3.1
30 – 49 years	221	42.7
50 – 64 years	268	51.7
≥ 65 years	13	2.5
<b>Health centre located in</b>		
Rural	148	28.6
Urban	370	71.4
<b>Training in the proper use of PPE</b>		
No	281	54.2
Yes	237	45.8
<b>Changes in responsibilities during COVID-19 pandemic</b>		
I have done the same job	21	4.1
I have attended more emergencies	106	20.5
I have switched to phone support	518	100.0
I have done less home care	224	43.2
I have seen fewer patients with chronic diseases	374	72.2
<b>Type of Personal Protective Equipment</b>		
Surgical mask	500	96.5
FFP1 mask	39	7.5
FFP2 mask	317	61.2
FFP3 mask	37	7.1
Face shields or goggles	337	65.1
Surgical gloves	449	86.7
Disposable gowns	374	72.2
Biocidal water-alcohol solution	494	95.4
<b>Who provided Personal Protective Equipment</b>		
Health Service	166	32.0
Health Service and Donations	300	57.9
Own contribution	45	8.7

Table 2 Scores on the distress scale of primary care physicians during the COVID-19 pandemic in Spain (n = 518).

	Mean (range: 0–3) ± SD	Proportion of responders answering levels 2–3
I don't know what to do or where to start	1.07 ± 0.84	27.8
I can't help but think of recent critical situations. I can't seem to disconnect from work	1.41 ± 0.91	44.7
I keep my distance, I resent dealing with people, I'm irascible even at home	0.96 ± 0.84	24.1
I feel that I am neglecting many people who need my help	1.16 ± 0.88	36.3
I have difficulty thinking and making decisions, I have many doubts, I have entered a kind of emotional blockage	0.82 ± 0.80	18.7
I feel intense physiological reactions (shocks, sweating, dizziness, shortness of breath, insomnia, etc.) related to the current crisis situation	0.91 ± 0.88	26.9
I feel on permanent alert. I believe that my reactions now put other patients, my colleagues or myself at risk	0.83 ± 0.89	23.1
The worry about not getting sick causes me a strain that is hard to bear	0.99 ± 0.92	27.8
I'm afraid I'm going to infect my family	1.70 ± 1.00	58.5
I have difficulty empathizing with patients' suffering or connecting with their situation (emotional distancing, emotional anesthesia)	0.45 ± 0.68	8.9

**Table 3. Factors that influence a higher level of distress (Linear regression analysis).**

	Emotional Response Beta Coef (CI95%)	Fears and Anxiety Response Beta Coef (CI95%)	Total Score Beta Coef (CI95%)
Sex (female)	0.98 (0.30, 1.66) <sup>a</sup>	0.71 (0.14, 1.28) <sup>a</sup>	1.69 (0.54, 2.84) <sup>a</sup>
Age	0.18 (-0.44, 0.80)	0.25 (-0.26, 0.77)	-0.43 (-0.61, 1.48)
Working setting (rural)	0.36 (-0.34, 1.05)	0.48 (-0.10, 1.06) <sup>a</sup>	0.84 (-0.34, 2.01)
Lack of training in protective measures	1.13 (0.53, 1.74) <sup>a</sup>	0.83 (0.33, 1.34) <sup>a</sup>	1.96 (0.94, 2.99) <sup>a</sup>

<sup>a</sup> P-Value <0.05;

**Table 4. Measures that helped reduce distress responses (n=518).**

	Emotional response (mean±SD)	Fears and Anxiety Response (mean±SD)	Total Score (mean±SD)	p-value
<b>Cleaning and hygiene</b>				
I clean my own work environment (N=42)	7.05±3.39	5.81±3.44	12.86±6.26	p<0.05
The usual cleaning measures are carried out (N=98)	6.28±3.79	5.01±3.09	11.29±6.50	
Recently cleaning has been reinforced and disinfection is done daily (N=174)	6.30±3.47	4.70±2.98	10.99±5.88	
Cleaning has been reinforced from the beginning of COVID-19 and disinfection is done daily (N=204)	5.09±3.39	3.65±2.56	8.74±5.46	
<b>Availability of PPEs</b>				
I do not yet have adequate measures (N=26)	7.38±2.62	5.81±3.01	13.19±4.99	p<0.05
They have been coming in, but long after the start (N=398)	5.82±3.62	4.38±2.96	10.20±6.12	
I have it since the beginning of the crisis (N=94)	5.71±3.39	4.26±2.86	9.97±5.63	
<b>Leave of absence due to COVID-19 pandemic</b>				
Yes, I was on sick leave for COVID-19	6.90±3.30	5.68±3.28	12.58±6.12	p<0.05
No, but there have been doctors at my center who have been on leave for COVID-19	6.17±3.62	4.65±2.92	10.82±6.03	
No, there have not been any doctors on leave from COVID-19 at my centre	5.00±3.35	3.59±2.69	8.59±5.50	

SD= Standard deviation