

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

Cebrián-Cuenca M Ana (✉ anicebrian@gmail.com)

Servicio Murciano de Salud <https://orcid.org/0000-0003-3710-6370>

Jose Joaquin Mira

Universidad Miguel Hernandez de Elche

Elena Caride-Miana

Generalitat Valenciana Conselleria de Sanitat

Antonio Fernández-Jiménez

INCLIVA

Domingo Orozco-Beltrán

Universidad Miguel Hernandez de Elche

Research article

Keywords: COVID-19 pandemic, coronavirus, psychological distress, primary care physicians, health-care workers, protection

Posted Date: June 4th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-27476/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background

The COVID-19 pandemic is affecting people in all nations of the world. In Spain, the epidemic is being especially harsh. The lack of protective measures is a major concern and may have caused emotional stress to Primary Care Physicians (PCPs). The aim of the study was to address the sources of psychological distress among Spanish PCPs during the COVID-19 pandemic.

Methods

Observational, cross sectional study. A questionnaire consisting of 24 expressions was answered by PCPs working in their family health care centers in Spain during COVID-19 pandemic. A specific scale (EASE scale) was used to determine psychological distress, recently validated in the context of this pandemic. A Multivariate Linear Regression analysis was performed.

Results

518 PCPs from different Spanish regions, participated in this survey. A total of 123 (23.7%) rated a high psychological distress score. Only half of PCPs 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 PEPs, 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, are factors associated with the psychological distress of PCPs.

Background

The pandemic by coronavirus COVID-19 is affecting people of all nations all over the world [1]. In Spain, the epidemic is being especially harsh and the reasons for this situation 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 Spain as the world's healthiest country [4]. One of the reasons they argue is that "Primary Care in Spain is essentially provided by public providers, specialized family doctors and staff nurses, who provide preventive care to children, women and elderly patients, and acute and chronic care". However, Spain has a rate of 5106 confirmed cases/one million inhabitants, the highest rate all over the world [5]. A report by the European Centre for Disease Prevention and Control (ECDC) underscores that 20% of registered coronavirus cases in Spain are healthcare workers, compared with 10% in Italy, 3% in the United States or 3.8% in China. The pandemic has tested the Spanish health system and its professionals.

The lack of protective measures, the increased workload, and having had to change their roles rapidly, may have caused them distress [6]. Therefore, it is crucial to understand specific sources of distress among Primary Care Physicians (PCPs) in Spain, in order to decrease psychological stress, if possible.

The aim of the study was 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 aiming 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 od diabetes in Primary Care (redGDPS) and Spanish Family Physician Society. We requested each organisation to promote the survey at least once in their newsletter and/or website.

Survey design and data collection

We designed a survey titled "(STREPRIC study)" STREss factors among PRImary care physicians in Spain. The following topics were investigated in the survey: demographic characteristics, work conditions and distress scale.

A specific scale was used to determine the distress related to the care of COVID-19 patients (EASE scale). The score in this scale ranged from 0 to 30, establishing 4 ranges: 0–9 good emotional adjustment, 10–14 emotional distress, 15–24 emotional overload and over 25, extreme acute stress.

This scale has recently been validated by our research group following the COSMIN [7] checklist to evaluate the methodological quality of studies on the measurement properties of health status instruments. Findings about its reliability, content validity, construct validity; criterion validity responsiveness and

interpretability were appropriate [8]. Its usefulness can be twofold. On the one hand, to help professionals to become aware of the emotional overload they are enduring and, on the other hand, to measure the degree of affection in order to avoid the progression towards more severe psychopathological conditions. The survey was administered through Google's forms platform. 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 PCPs will 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 analyzed using Chi-square or Fisher Exact Test. Quantitative variables were analyzed by ANOVA test. A multivariate linear regression analysis, was carried out considering as a dependent variable de EASE score and the factors: sex, age, setting (rural vs urban) and whether the PCP has been trained in how to apply the adequate protection measures. We use the SPSS v.26 statistical software to analyze the results.

Results

518 PCPs from different regions of Spain responded. The majority was women (70.8%) and worked in urban areas (71.4%). All the PCPs had seen 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).

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

Characteristics of Primary Care Professionals		
Gender	N	%
Female	367	70.8
Male	151	29.2
Age		
< 30 years	16	3.1
30–49	221	42.7
50–64	268	51.7
≥ 65 years	13	2.5
Health centre located in		
Rural	148	28.6
Urban	370	71.4
Training in the proper use of PPE		
No	281	54.2
Yes	237	45.8
Changes in responsibilities during COVID-19 pandemic		
I've done the same job	21	4.1
I've attended more emergencies	106	20.5
I've switched to phone support	518	100.0
I've done less home care	224	43.2
I've seen fewer patients with chronic diseases	374	72.2
Type of Personal Protective Equipment		
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
Who provided Personal Protective Equipment		
Health Service	166	32.0
Health Service and Donations	300	57.9
Own contribution	45	8.7

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

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

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

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

	Emotional Response	Fears and Anxiety Response	Total
	Beta Coef (CI95%)	Score	Beta Coef (CI95%)
	Beta Coef (CI95%)		
Sex (female)	0.98 (0.30, 1.66) ^a	0.71 (0.14, 1.28) ^a	1.69 (0.54, 2.84) ^a
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) ^a	0.84 (-0.34, 2.01)
Lack of training in protective measures	1.13 (0.53, 1.74) ^a	0.83 (0.33, 1.34) ^a	1.96 (0.94, 2.99) ^a

^a 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
Cleaning and hygiene				
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)	6.283.79	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	
Availability of PPEs				
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've 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	
Leave of absence due to COVID-19 pandemic				
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 haven't been any doctors on leave from COVID-19 at my center	5.00 ± 3.35	3.59 ± 2.69	8.59 ± 5.50	
SD = Standard deviation				

The improved cleanliness and hygiene of the health center, the availability of PPE, or the fact that doctors were not absent from work, helped to mitigate distress. The origin of the PPE (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 (personalized and individualized attention in the clinic, follow-up by the same family doctor) were broken. Usual care was also discontinued, except in consultations and unproven emergencies or for IDVC-related pathologies.¹⁹ The availability of PEP was reduced to reduce the risk of infection, especially in the early stages. A quarter of the participants reported 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 PPE, we found a clear lack of training by the health professionals surveyed. Less than half received specific training on the use and correct placement of PPE. This contrasts with World Health Organization (WHO) recommendations, which specify the need for prior training for workers who will use PPE [9], as well as studies that report the consequences of lack of training. Thus, the FREMAP study conducted in 2011 concluded that only 13.6% of professionals had used PPE correctly, largely due to the absence of training programs and their insufficient content [10].

At the time of writing, scientific societies throughout Europe, such as the Royal College of Surgeons in England and the European Society of Intensive Care Medicine, are conducting 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 do not have the perspective of the current situation of training in the use of PPEs in 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 precautions, contact precautions and precautions for transmission by drops [16]. This contrasts with the data obtained in this survey, in which more than half of those surveyed stated that they had supplemented their personal protective equipment through donations. About 40% of the participants reported that they did not have complete personal protective equipment, thus exposing their safety and highlighting the lack of resources to which they have been subjected during healthcare provided to patients of COVID-19. It should also be noted that on the date of the survey, i.e. 42 days after the state of alarm was declared, some health professionals still reported that they did not have adequate protective equipment.

These data are consistent with the fact 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 give 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 could not have passed through the adequate quality certification; have been able to contribute decisively to the high number of healthcare providers infected by COVID-19 in Spain, emphasizing the fact that health professionals did not perceive increased stress because this material was donated.

In the matter of the questions on the distress scale, it is highlighted that despite being a group capable of dealing with stressful situations, and that this is part of their normal work routine, 23.7% (n = 123) of the participants obtained a score higher than 15 in the acute stress scale validated in patient care COVID-19, with an average score of 10.31 points. This indicates that the majority of the participants would find themselves in a situation of emotional distress with a high percentage of participants in a situation of emotional overload. The main sources of stress were being able to infect the family when they returned home, as well as not being able to disconnect from the workplace. On the other hand, despite the stress levels, most of the survey participants consider that they continue to maintain their decision-making capacity, as well as their abilities to empathize with patients.

Among the factors associated with a higher level of distress, female sex, work in rural settings and younger professionals stand out. 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 Ebola health crisis, the crisis health of SARS or the health crisis of Influenza A. Although youth itself, does not seem to have had higher levels of job stress in general lines in other studies. On the other hand, different studies have related the female sex with a greater emotional involvement in different analyzes of labor involvement, as well as it has been established that women are twice as likely to experience negative emotions in stressful situations than men [18].

It also highlights that the participants who have not received specific training in the use of PPE associated with a higher level of distress, something that shows the emotional impact that lack of training on available resources can produce in the perception of work stress, something that has been confirmed in previous studies on the emotional impact on the health work environment [19–21]. Regarding rural health workers, there are no previous studies that indicate higher levels of stress with respect to urban health workers. Although some determining factors that generally increase their stress levels have been identified in other studies, such as role overload and role ambiguity, determining factors that have undoubtedly happened during the acute phase of the pandemic [21].

On the other hand, in this study, several factors have been identified that have contributed to mitigating the level of perceived distress among the participants, to highlight: the availability of PPE, reinforcement in the cleaning and hygiene tasks of the health care center as well as the absence of health workers on sick leave due to COVID-19 at their workplace. Likewise, performing COVID-19 RT-PCR significantly reduced fear and anxiety responses. These data emphasize 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.

Regarding the representativeness of the physicians who have responded, it can be seen that the age ranges of the participants are mostly between 30–64 years, something that represents quite well 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 increasing feminization of the health professions. Thus, in 2018 a study estimated that the average age of PCPs in Spain was 49.2 years with 61.6% of women [22].

Regarding the impact that COVID-19 has had on the structuring of work, our study highlights the change made in the healthcare model by PCPs in health care centers during the acute phase of the pandemic. Telephone attention has acquired a main function, reducing the follow-up of chronic patients. Something that shows the need to provide Primary Care with telemedicine tools, that allows better management of chronic healthcare demand.

There are several limitations of this study. The objective of the study was not to achieve a representativeness of all the regions of the country, but to reach a minimum number of surveys that were diverse and in a short time to be able to know the situation first hand and be able to provide relevant information in a short time, so that it could contribute points of reflection for an improvement plan in the situation related to COVID-19. In the same way, the survey was sent to PCPs linked to various scientific societies, therefore especially motivated on the subject.

Among the strengths of the study it is worth highlighting the large sample size, the representation of various PCPs with different conditions and workplaces involved in health care, as well as a distribution throughout the Spanish geography. In the same way, the questionnaire raised by the research team has been previously tested to see its suitability, being endowed with the necessary validation and having been 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 the management of the COVID-19 pandemic in Spain, as well as its relationship with the lack of adequate PPE and specific protection measures for this situation. This is a key aspect since they represent 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 PEPs, 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, are factors associated with the psychological distress of PCPs.

Abbreviations

PCPs
Primary Care Physicians
PPE
Personal Protective Equipment
RT-PCR
Reverse-transcription polymerase chain reaction
WHO
world health organization

Declarations

Ethics approval and consent to participate

Ethics approval was granted by The Alicantes' 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 participants could proceed to complete the survey.

Consent for publication

Deidentified data were published in aggregate. All participants provided consent for publication when they provided consent to participate online.

Availability of data and materials

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

Competing interests

The author(s) declare no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The author(s) declared no financial support for the search authorship and/or publication of this article.

Authors' contributions

AC and DO conceptualized 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, reviewing and contributing to drafts. All authors read and approved the final manuscript.

Acknowledgements

We convey our sincere thanks to the participants of this project. We would also like to thank redGDPS group and also group for the study of diabetes Spanish Family Society for the distribution and the diffusion of the questionnaire.

References

1. Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. *JAMA* Published online March 12, 2020. doi:10.1001/jama.2020.3972.
2. Instituto de Salud Carlos III, CNE RENAVE, CNM. The COVID situation in Spain (21th, April 2020). Report number 24. Available: <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: <https://apps.who.int/gho/data/view.main.SDG2016LEXREGv?lang=en>. Last visit: 29th, April 2020.
4. Miller LJ, Wei Lu W. The Bloomberg Healthiest Country Index. The 2019 edition. Available: <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: <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. *JAMA*. 2020 Apr 7. doi:10.1001/jama.2020.5893.
7. 10.1007/s11136-010-9606-8
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* 19, 539–549 (2010). Available at <https://doi.org/10.1007/s11136-010-9606-8>.
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.
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.freemap.es/Documentos%20observatorio%20sinestralidad/Estudio%20eficacia%20equipos%20proteccion%20respiratoria.pdf>.
11. Tomas ME, Kundrapu S, Thota P, et al. Contamination of Health Care Personnel During Removal of Personal Protective Equipment. *JAMA Intern Med* Published online Oct 12, 2015. doi:10.1001/jamainternmed.2015.4535.
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. doi:10.1001/jamainternmed.2015.5457.
13. Nash D, Jagger J, Mitchell AH. Guest Commentary: Protecting our healthcare workers now. *Modern Healthcare* Nov. 21, 2014. Available at: <http://bit.ly/1GlpdHU>.
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;44:840–2.
15. Preventing Transmission of Pandemic Influenza and Other Viral Respiratory Diseases. Personal Protective Equipment for Healthcare Personnel: Update 2010. Institute of Medicine (US). In: 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. Disponible en: https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/PrevencionRRLL_COVID-19.pdf.
17. de Sanidad M. 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/PrevencionRRLL_COVID-19.pdf.
18. Hadziolova I. La edad y el sexo en relación con el estrés profesional. En: Kalimo R, El-Batawi MA, Cooper CL, compiladores. Los factores psicosociales en el trabajo. Ginebra: OMS 1988;p. 138 – 47.
19. Oscar Segovia A, Segado Sánchez-Cabezudo S, García Castilla FJ, 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>.
20. Aguado JI, Bátiz A, Quintana S. The stress in the hospital sanitary personnel. current statusMed Segur Trab (Internet). 2013;59(231):259–75.
21. 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.
22. Del Pozo Sosa G, Garcia Perez M, Leon Santana M, Lopez G, Ordoño V, Matas Aguilera C, Sebastian Marfil. 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.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [supplement8.doc](#)
- [supplement9.doc](#)
- [supplement10.doc](#)