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Mental Health Interventions And Behavioral Adjustment For College Students During The COVID- 19 Pandemic's

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Abstract:

Healthcare professionals were especially vulnerable to pandemic, both to become infected and to develop a psychological problem. The aim of this systematic review is to analyse the effectiveness of psychological interventions for college students professionals in reducing the experienced psychological impact. From the 405 identified studies, 10 were included in this review. Four databases were searched and the risk of bias of included studies was assessed. The studies considered were randomized controlled trials. The screening and selection process was conducted by two independent reviewers. All studies presented results related with depression, anxiety, and stress during pandemic. Six were delivered using new technologies. The most effective were two psychological interventions with frequent contact and feedback provided by a mental health professional. The psychological interventions compared with non-intervention groups presented more significant results than those compared with another intervention. The highlights of this systematic review were the urgency of designing effectiveness psychological interventions for healthcare professionals to reduce the emotional burden associate with this job. These interventions should be maintained over the time, supported by a professional and provided from the workplace. These proposals presented promising results but were more psychological resources than psychological interventions.

***Keywords**: COVID-19 pandemic, Randomized Controlled Trials (RCT), Healthcare, psychological impact, precarious conditions, emotional burden related, psychological treatment, Distress Mental health.*

Introduction:

Since December 2019, the novel coronavirus or COVID-19 has spread rapidly across the whole world, becoming a global pandemic on March 2020 according to the World Health Organization (WHO, 2020). New coronavirus infection has had a major impact on mental health. Population received an increasing amount of uncertain information about the disease (Torales et al., 2020). The immediate consequences were fear of uncertainty, panic, distress, a feeling of losing control, anger, frustration, and vulnerability (Bao et al., 2020; Brooks et al., 2020; Rajkumar, 2020). Accordingly, psychological problems like depression, anxiety and stress have increased during this period in general population (Salari

et al., 2020). Additionally, an increase of suicidal thoughts and behaviours have been observed in relation to the appearance of infectious diseases epidemics (Rodgers et al., 2021). Healthcare professionals were especially vulnerable to this health crisis, presenting 12 time more risk than general population to get infected (Nguyen et al., 2020). These workers had an essential role in the quality of healthcare system during the pandemic (Bao et al., 2020). Disease exposure, the lack of protection and the saturation of sanitary resources forced these professionals to work in precarious conditions (García-Iglesias et al., 2020; Vieta et al., 2020). These situations had a direct impact on the mental health of these workers and, consequently, an indirect effect on the well-functioning of the sanitary system (Shultz et al., 2016; Yang et al., 2020). COVID-19 pandemic increased the prevalence of psychological problems like anxiety, depression, stress, post-traumatic stress disorder (PTSD), insomnia, and burnout between healthcare professionals (Lazzerini & Putoto, 2020; Li et al., 2020; Vieta et al., 2020). According to these results, previous systematic reviews reported high levels of anxiety (Pan et al., 2020) and PTSD (Carmassi et al., 2020) for this population. Other stressful experiences were the grief for relatives and/or patients, self-blame for not being able to save them, and fear of getting sick and infecting their families (Wallace et al., 2020). Health crisis, such as COVID-19, have required the use of adaptative coping strategies. However, many healthcare professionals presented problems in dealing with the pandemic due to the uncertainty of the situation and the lack of knowledge about the disease. To cope with psychological distress health workers reported the use of exercise (44.9%), social connections (31.7%) and alcohol (26.3%) (Smallwood et al., 2021). New technologies, especially psychological wellbeing applications, were also a resource used by this population (Smallwood et al., 2021). Previous studies found an association between burnout in health workers and patient safety, COVID-19 represented an extreme situation with the presence of these two variables (Hall et al., 2016). For all these reasons, healthcare professionals should be considered as a population risk to suffer psychological problems, especially in a health crisis like COVID-19 pandemic. Accordingly, the creation of psychological programs adapted to their needs is an urgency. During the first year of the pandemic, 6.4% of adult population requested psychological attention in Spain (Confederación Salud Mental, 2021). Different resources like phone assistance with brief psychological intervention were available. During quarantine the number of calls was 15,170, 75.3% needed an intervention (Berdullas-Saunders et al., 2020). However, the evidence for specialized psychological programs for healthcare professionals was limited. Muller et al. (2020) presented a rapid systematic review at the beginning of the pandemic.

Results showed that the most frequent strategies and resources used by health workers were social/family support, lifestyle adjustments, mindfulness, or distraction. A minority of professionals asked psychological assistance (Muller et al., 2020). The design of mental health resources and interventions for healthcare professionals has become an urgency. This population needs easy access to psychological programs adapted to their characteristics to deal with psychological problems and the emotional burden related with the workplace, especially during health crisis (Mira et al., 2020). The main aim of this systematic review is to perform an update of the psychological interventions designed for healthcare professionals and delivered during pandemic and analyzed their effectiveness in reducing the psychological impact experienced by the participants.

Challenge:

As per Boniol, M., McIsaac, M., Xu, L., Wuliji, T., Diallo, K., & Campbell, J. (2019). Gender equity in the health workforce: Analysis of 104 countries. (No. WHO/HIS/HWF/Gender/WP1/2019.1). World Health Organization. The Population, Intervention, Comparator and Outcome framework was used to report the eligibility criteria of this systematic review (O'Connor et al., 2008). Population. Healthcare professionals who worked during the COVID-19 pandemic. Intervention. Psychological interventions, provided from de workplace, addressed to reduce the psychological impact of healthcare professionals who worked during the COVID-19 pandemic. Comparator: Any comparator, including pharmacological treatment, control group or no treatment group. Outcome. Validated questionnaires used to measure pre- and post-intervention comparisons in any variable related with mental health.

Objective:

To reduce distress associated with working with COVID-19 patients, several psychological intervention programmes for healthcare workers have been developed in Spain. We aimed to describe the main characteristics and components of these programmes for healthcare workers treating COVID-19 patients in Spanish hospitals.

Material and Methods:

An online survey was designed to evaluate the main characteristics of psychological intervention programmes for healthcare workers during the first wave of COVID-19 pandemic.

Results:

We received a total of 50 responses. We discarded duplicate responses (same hospital, n=10 responses) and those from other mental health services that did not fulfil the eligibility criteria (n=4, one response each from the following: primary care centre; health consortium; a programme not associated with the SNS; and one

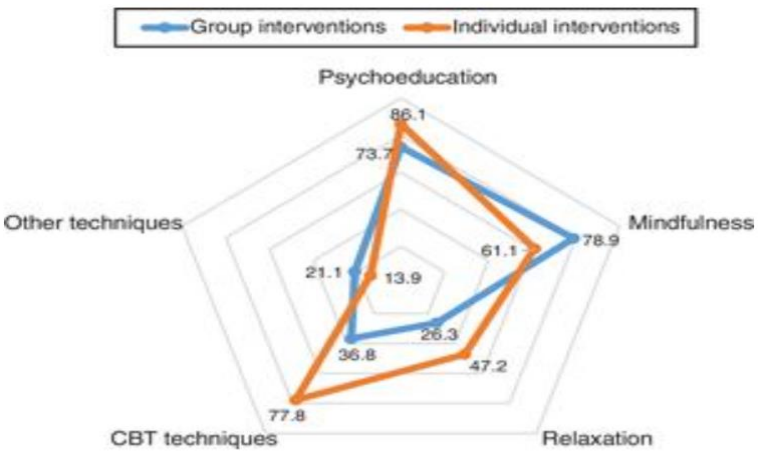
response without any information). Finally, mental health intervention programmes from 36 hospitals were considered valid for further analysis. Respondents were mainly members of the intervention teams (*n*=29; 80.6%) or coordinators of those teams (*n*=6; 16.7%). Most hospitals were based in the regions of Madrid (*n*=8; 22.2%), Barcelona (*n*=7; 19.4%), or Valencia (*n*=4; 11.1%). The other hospitals (*n*=17; 47.2%) were widely distributed around the country. The full list of participating hospitals is available in Appendix B. The median number of beds at the participating hospitals was 466 (interquartile range [IQR]=508). Thirty-four programmes were created in hospitals to care for their own staff, while the other two programmes were created by regional health systems to serve multiple hospitals. All the intervention programmes were created ad hoc to manage mental health issues in healthcare workers during the COVID-19 pandemic. The most common objectives of the programmes were as follows: (1) "to improve emotion regulation" (*n*=35; 97.2%), (2) "to reduce physiological arousal" (*n*=31; 86.1%), (3) "to improve the professionals' communication skills with their patients" (*n*=19; 52.8%), and (4) "to improve communication among the members of medical teams" (*n*=16; 44.4%). The median (IQR) time required to prepare the programmes, defined as the time elapsed between the start of clinical interventions and the first preparation meeting, was 5 (5) days. Note that two programmes began clinical interventions before the first team meeting and four began on the same day of the first team meeting. These programmes were created after a proposal made by mental health professionals (*n*=23; 63.9%), the director of mental health services (*n*=9; 25.0%), hospital management (*n*=3; 8.3%), and others (*n*=1; 2.8%). Psychological intervention teams had a median (IQR) of 10 (14) members. The teams were composed of clinical psychologists (50.1%), clinical psychology interns (18.1%), psychiatrists (15.6%), psychiatry interns (7.2%), and other staff (9.0%). Below Table 1 shows the professional profile categorized by hospital size. The presence of newly hired personnel (one site) or volunteers (five sites) was infrequent. More than half of the teams included professionals with specific training in emergencies and disaster situations (*n*=21; 58.3%). Most of the team leaders were clinical psychologists (*n*=19; 52.8%).

Staff members, working hours, and preparation time for the interventions, by hospital size (quartiles).

	≤298 beds(*n* = 9)	299–466 beds(*n* = 8)	467–806 beds(*n* = 8)	≥807 beds(*n* = 9)	Total hospitals(*n* = 34)	*H* (*df*)
Clinical psychologists, *n*	4 (1)	4 (2)	5 (4)	6 (2)	4 (4)	3.58 (3), *p* = .311
Psychiatrists, *n*	1 (1)	0 (2)	2 (4)	4 (5)	1 (4)	3.36 (3), *p* = .339
Clinical psychology interns, *n*	0 (2)	1 (2)	3 (3)	4 (6)	1 (4)	8.67 (3), *p* = .034
Psychiatry interns, *n*	0 (1)	0 (0)	1 (4)	2 (4)	0 (2)	9.78 (3), *p* = .020
Nurses, *n*	0 (1)	0 (0)	0 (0)	0 (2)	0 (0)	3.96 (3), *p* = .266
Other workers, *n*	1 (1)	0 (0)	1 (1)	0 (1)	0 (1)	6.95(3), *p* = .073
Total staff, *n*	7 (4)	8 (6)	11 (13)	22 (17)	10 (14)	13.61 (3), *p* = .003

Above Fig 1. Data are given as medians (IQR). Hospital size is categorized in quartiles. Kruskal–Walli's statistic (*H*) compares the differences among the four groups of hospitals: *df*, degrees of freedom.

Most intervention programmes (*n*=21; 58.3%) included in-person interventions while the remaining programmes (*n*=15; 41.7%) were performed exclusively online or by telephone. Only 11 programmes (30.6%) were manualized while 16 (44.4%) were supervised. Nineteen programmes (52.8%) included group interventions. Below Fig 2 shows the main components of the individual and group interventions. Multimedia materials (video, audio, or mobile phone application) were available at 15 sites (41.7%). Thirteen programmes (36.1%) included pharmacological interventions.



Above Figure 2, Radar chart representing the comparison of the main components of the programmes, as percentage of programmes delivering that component (vertical axis showing a 20% increase; CBT, cognitive-behavioural therapy).

All teams with in-person interventions used some type of protective gear (masks, gloves, gowns). However, performing in-person interventions was not associated with having received training for the correct use of PPE (*phi*=0.19; *p*=.257): about half of teams performing in-person interventions had received such training for the proper use of personal protection equipment (*n*=11). The interventions were available a median (IQR) of 11 (5) hours each day. Nineteen out of 36 programmes (data missing for one site) offered care from Monday to Friday while 17 out of 36 were available seven days per week (Monday to Sunday). Most of the intervention programmes were offered to most professional categories: physicians (*n*=35; data missing for one site; 100%), nurses (*n*=33; 94.3%); nursing assistants (*n*=30; 85.7%), and other staff members (*n*=29; 82.9%).

Discussion:

This is the first study to describe mental health interventions for healthcare workers in Spanish hospitals during the first wave of COVID-19 pandemic. Our results show that, prior to the national lockdown, several hospitals in Spain had developed some type of intervention to improve emotion regulation and/or to reduce anxiety/stress among hospital staff. These interventions were delivered both online and in-person, mostly using bottom-up schemas.

Studies conducted in China found that the most reported interventions were online or telephone-based.14,20 Similarly, in Spain, most of the hospitals surveyed offered these types of interventions. However, in contrast to China, a high proportion (58.3%) of the participating hospitals in Spain provided in-person psychological interventions, both individual and group. This is relevant given that recent research has shown that nurses and doctors are generally reluctant to participate in psychological interventions during the COVID-19 pandemic and almost half of them are not interested in engaging in any structured wellness resource, either because they felt well enough to work without them at this time or because they had other priorities (for example, improvements in workplace safety or resting periods). Moreover, other studies have shown that in-person psychological interventions are generally better accepted than online interventions and are likely to be preferred by healthcare workers during the COVID-19 pandemic. Consequently, it is important to offer in-person therapy options, which could potentially increase participation in those programmes. Nonetheless, Duan et

al. argue that the presence of mental health professionals in areas of the hospital with COVID-19 patients should be discouraged to minimize the risk of contagion. Although teams performing in-person interventions in Spain used the proper protection materials, a high proportion of them had not received the appropriate training in the use of these materials. Clearly, proper training in the use of PPE is essential and should be offered to all mental health teams. In terms of the content of the interventions evaluated in our study, we found that psychoeducation and mindfulness were highly prevalent, both for group and individual interventions. By contrast, the main approach for individual interventions was cognitive-behavioural therapy. Another aim of some of the interventions in Spanish hospitals was to improve communication within the medical team. Some organizations strongly recommend these type of intervention as they can reduce the anxiety associated with uncertainty and dysfunction in communication flows. The interventions in the present study were delivered mainly by mental health specialists, primarily clinical psychologists. This is important and a positive feature of these programmes, especially given that one of the main issues detected in China was the high number of volunteers delivering these interventions. Mental health professionals are preferable over volunteers as they guarantee higher professional skills, are better integrated within the health care system and ensure the continuity of care over the time. However, a wide range of different interventions was offered at these hospitals, and there was a notable lack of coordination among the institutions and no national guidelines were available. Better coordination among hospitals would likely improve the quality of the interventions, in part by ensuring that “best practices” are used. During the COVID-19 outbreak in China, it has been found that depression and anxiety levels among healthcare workers were higher in women, nurses, professionals working in a secondary hospital, and frontline workers (direct contact with patients). Most of the psychological interventions developed in Spanish hospitals covered all frontline workers (including nurses and doctors), thereby providing this population, which is at high risk of developing mental health issues, with the necessary tools to prevent or cope with the stress. Although there was a clear necessity during the pandemic to quickly develop and implement mental health programmes for healthcare workers, this has raised several issues. As our results show, some hospitals implemented these interventions with scant preparation, even commencing the interventions before conducting preparatory meetings. This implies that safety issues might have been overlooked (e.g., appropriate training in the use of PPE). The present study has several limitations. First, the study is based on a convenience sample. We did not systematically collect data from all

Spanish hospitals (about 492 public and semi-public hospitals). Thus, it is probable that some types of interventions were not considered. Moreover, the proportion of hospitals offering such psychological interventions for healthcare workers remains unknown. Furthermore, other programmes developed by different institutions (i.e. professional associations, non-governmental organizations) outside the SNS were not included. However, the main objective of the present study was to describe the characteristics of the interventions for healthcare workers, to inform decision making during the pandemic. It is likely that a more complex design would need more time and, consequently, cause an unwanted delay in access to information. Second, the study period is limited to the first wave of the pandemic in Spain, and some interventions may have been developed and implemented later to treat distress associated with a different phase of the pandemic. By contrast, the study has several important strengths. For example, all the data was directly provided by members of the teams involved in the interventions, thus increasing the validity of these data. Also, the rapid assessment of these programmes allows us to precisely describe the psychological interventions deployed during the peak of the pandemic. Future research should seek to more comprehensively evaluate the intervention programmes, including their acceptability, safety, efficacy, and effectiveness. According with a systematic review, no study has assessed the efficacy or effectiveness of stress reduction techniques for health care workers during pandemics. Only limited information about pilot interventions have been provided. For instance, Rodríguez-Vega et al. reported a mindfulness-based stress reduction intervention, supporting its utility, safety and feasibility. Furthermore, Blake et al. developed a digital learning package for healthcare workers in the United Kingdom, which included evidence-based guidance, support and signposting relating to psychological wellbeing. Besides usability, utility and user satisfaction with the content, little is known regarding the relative efficacy of different components and formats of the interventions. However, intervention programmes conducted in Spain included some recommendations for psychological interventions, like ensuring online or telephone interventions, promoting professionals' engagement through in-person interventions or improving communication within medical teams. It is important that future studies systematically assess the efficacy of psychological interventions and its modalities, components, and common factors, to identify those with better results in the context of a health emergency. A long-term, longitudinal approach is needed to assess the evolution of mental health of healthcare workers and the effects on mental health of potential risk factors for burnout. In addition, the development of electronic health technologies for psychological treatment and evidence-based self-help

interventions during pandemics is warranted.

Conclusion:

The response of mental health teams to the first wave of COVID-19 pandemic for college students and its hospitals included diverse psychological interventions for healthcare workers. These interventions may have enhanced emotion regulation skills among health care workers and helped to prevent the incidence of mental disorders. However, the rapid development of these interventions has raised questions about potential safety issues and about the scant prior preparation for a health emergency of this magnitude. In this regard, specific mental health intervention programmes should be developed for healthcare workers and included in national and international contingency plans for pandemics and other emergency situations.

The health international crisis around the world by COVID-19 outbreak has change healthcare system in every country. The results of this review, according with previous studies (Shanafelt et al., 2019; Søvold et al., 2021), reveal the urgency of designing quality psychological interventions for healthcare professionals. The poor working conditions have caused many psychological disorders in this community. Normally, these workers are in close contact with people struggling with difficult situations and the emotional burden is high. COVID-19 pandemic has enhanced these factors, increasing the psychological impact and the precarious conditions (García-Iglesias et al., 2020; Mira et al., 2020; Nguyen et al., 2020; Vieta et al., 2020). For these reasons, psychological well-being of health workers should be a global priority, as well as, providing comprehensive, high quality and personalized psychological interventions from the workplace and the institutions (Mira et al., 2020; Shanafelt et al., 2019; Søvold et al., 2021). In fact, psychological programs could increase the satisfaction with the workplace and, consequently, a better labour performance with less sick leaves (Yslado-Méndez et al., 2019). This psychological approach should be accompanied by an improvement of the labour conditions, reducing marathon days and stabilizing working conditions. This systematic review also presents some limitations. The small number of included studies and the time elapsed since the start of COVID-19 pandemic. Besides, all included studies are cross-sectional, longitudinal studies will be necessary to prove the long-term effectiveness of the proposed interventions. In fact, 2 years is a short period of time to performed psychological interventions and prove their effectiveness through RCT. Another limitation was heterogeneity presenting the outcomes through the different included studies. Further investigative research should be driven to supply these limitations.

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