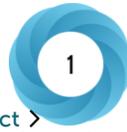


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ORIGINAL RESEARCH article

Front. Public Health, 19 May 2022

Sec. Public Mental Health

Volume 10 - 2022 |

<https://doi.org/10.3389/fpubh.2022.850376>

(https://doi.org/10.3389/fpubh.2022.850376)

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Anxiety and Coping Stress Strategies in Researchers During COVID-19 Pandemic

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The current COVID-19 pandemic has affected the whole world, leading to changes in one's personal and working life. Researchers have undergone extensive changes in their roles, mainly in the area of health care, with research into the virus now the priority.

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June 2021 and 11 August 2021. The questionnaire included depression, anxiety, and stress (DASS-21), fear of COVID-19 scale (FCV-19S), and coping inventory for stressful situations (CISS).

Results: The findings suggest being female and younger seem to be related to more significant fears. Singles and younger researchers showed higher values of stress, depression, and anxiety. Research areas, such as medical and health sciences, presented higher levels in the DASS-21 depression and stress scale ($p < 0.05$). Also, the results showed a moderate or moderate strong significant positive linear relationship between the scales ($p < 0.001$): DASS-21 stress, DASS-21 anxiety, and DASS-21 depression ($r > 0.70$); CISS-21 emotional-oriented with DASS-21 stress ($r = 0.683$), DASS-21 depression ($r = 0.622$), and DASS-21 anxiety ($r = 0.557$); and emotional fear and cognitive fear ($r = 0.652$).

Conclusion: The findings of this study support the growing concern for the psychological well-being of researchers and the need for intervention with more extensive and diverse studies.

Introduction

In December 2019, new pneumonia caused by a virus (SARS-CoV-2) of the coronavirus family emerged. It is thought to have originated in China, in Wuhan, and quickly spread worldwide (1–3). In March 2020, the World Health Organization (WHO) declared the existence of a pandemic situation. At that time, SARS-CoV-2 was already one of the biggest challenges to world health (2). The increasing number of infections and death related to the COVID-19 disease led to increased concern by health organizations, governments, and society.

These concerns have been substantially exacerbated by extensive media coverage and continuous social media (mis)information, factors that generate fear, anxiety, social panic, and suicide risk (4–6). The need to know more about the disease and the virus, the need for scientific evidence to make decisions, the constant search for strategies, and methodologies to combat the problem have caused science to evolve at an unprecedented pace, namely in the field of vaccine development (7, 8).

At this moment, society renewed recognition of the role of science in fighting the pandemic. Across the world, most governments repeated in most press conferences: “We are following the science” (9). This is one step in the recognition that science/scientific knowledge is necessary for the prevention and search for solutions when we face contemporary challenges. However, the crucial steps are funding/economic investment into research projects and hiring human resources (10–12).

In the most several areas, these professionals who work for science and the increase in knowledge also had to readap not only in personal terms but also at the work level. While some research work can be

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involves laboratory work or clinical research, for example, studies that aimed to evaluate adverse event profiles of drugs in advanced prostate cancer and which require recruitment of participants for evaluation (16), were very much affected because they had to be suspended (15). These are two simple examples of scientific work of extreme importance but using different research methodologies.

Scientists do distinct work ranging from research, planning experiments, collecting and analyzing data, writing papers, writing fundraising proposals, teaching, clinical practice, administrative, and editorial activities. Not surprisingly, many studies have already shown that most of the pandemic-related decisions have magnified disparities among these researchers (13, 17–19). For instance, the research work and the time devoted to it were massively affected during the pandemic. Many researchers had to readapt their schedules and commitments, and in some cases, change their working methods because the access to field/laboratory work was restricted by confinement measures (13, 20–22). Many clinical trials were suspended due to the need for social isolation and multiple research groups felt the need to change their research projects and/or develop new ones, focusing on strategies to respond to the pandemic (13, 20). Teleworking and supporting children and dependents were other necessary readjustments (15, 23–25).

Although the pandemic affected the researchers' work in general, some researchers were more affected than others depending on their research areas, careers, and gender. There are already some publications in this sense, which report that the areas of biological sciences, biochemistry, and chemistry were more affected compared to the areas of mathematics and computer sciences (13). Similarly, studies have shown that early-career researchers (13, 26, 27) were also more conditioned by the pandemic, as well as the female gender (28, 29).

These labor and personal struggles in several areas are factors that increase the level of stress and anxiety and impact mental health significantly. However, few studies have been carried out at the level of this professional class, to understand the impact of the pandemic on the researchers' mental health, with particular emphasis on the anxiety during the lockdown (30).

Several studies have been exploring the anxiety of health professionals (31–35), academics (2, 36, 37), and the general population (38, 39). The levels of depression and anxiety were significantly higher during the outbreak and there was a need to study this topic. However, the concern with researchers is scarce (40–42) and it is urgent to cover this gap. Some studies, just prior to COVID-19, have been reported that researchers present high levels of stress (40, 43, 44). This shows that this problem existed even before COVID-19 and needs to be addressed.

On the other hand, in the attempt to resilience this problem it is necessary to implement adequate prevention or rehabilitation strategies. It is important to know positive and protective strategies to deal with this problem. Several studies have been carried out to develop and/or apply strategies to fill this gap in the population in

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workers, such as providing the development of self-efficacy, resilience, promotion of social support, and guaranteeing quality and safe care (33, 45, 46).

Getting to know researchers better, motivating them, and promoting physical and mental well-being will bring benefits to their health, as well as to their role as researchers, contributing to the increase of scientific knowledge, fundamental for the improvement of the quality of life of our population. Thus, considering the health challenges for this understudied professional group, the aim of this study is to assess the levels of anxiety, depression, stress, fears, and coping strategies in Portuguese researchers during the COVID-19 pandemic. This knowledge is central to the development of intervention plans for these professionals, in the future.

Methods

Study Design and Participants

The target population was researchers working and living in Portugal. Inclusion criteria were to be a researcher in any scientific area and agree to participate in the online survey. This was a quantitative cross-sectional study that used a convenience sample ($n = 243$) of the Portuguese population recruited *via* e-mail (on professional networks). All participants gave their voluntary and informed consent, which was obtained electronically before recording any data from the participants.

Measures

Data Collection

From 1 June 2021 to 11 August 2021, survey data were collected through an online questionnaire. The survey was constituted of 60 questions that took around 10 min to be completed. The questionnaire covered socio-demographic and professional information (e.g., age, sex, marital status, academic qualifications, research area, and professional activity), health-related data (general health perception and history of COVID-19 diagnosis), depression anxiety stress scale (DASS-21), fear of COVID-19 scale (FCV-19S) and coping inventory for stressful situations (CISS-21). Before the application, the questionnaire was validated by a senior researcher's panel, and then, it was transposed to Qualtrics software for final validation.

The online platform Qualtrics™ software (Provo, UT, USA) was chosen because of the facilitation in the distribution and completion of surveys, according to the recommendations imposed on social distance. In addition, only the researchers directly involved in the study could access the data, thereby maintaining the confidentiality of research subjects and research data (47, 48).

This study was approved by the ethical committee, and data confidentiality was ensured by assigning a code to each participant. No identifiable data were collected from the participant.

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(49). The DASS-21 instrument comprises 7 items for each subscale. The responses were collected on a 4-point scale of severity/frequency that assesses the extent to which the individual experienced each state in the previous week.

Fear of COVID-19 Scale (FCV-19S)

The FCV-19S was developed with the intent to identify and early intervene, psychologically, in people with high values of fear of COVID-19 (50). Ahorsu et al. (50) have proposed this scale, with 7-items, that assesses distinct physiological reactions of fears related to COVID-19. In this study, we used the Portuguese version of the Coronavirus Anxiety Scale (CAS) (51).

Coping Inventory for Stressful Situations (CISS-21)

The CISS-21 was developed by (52) by a psychometrically valid and reliable self-reporting instrument to identify and assess coping skills (51, 53). There are two versions (21-items and 48-items), but the shorter version has been the most widely used (51, 53). In this specific case, we use the Portuguese version already validated by Pereira and Queirós (54).

Statistical Analysis

Descriptive statistics were used to describe the study sample. The Pearson linear correlation was used to assess the linear correlation between age and scale, as well as between scales. The Shapiro–Wilk test was used to assess normality. The Levene test was used to assess variance homogeneity. The *t*-test was used to assess significant differences in scales by gender or type of contract. The Wilcoxon Mann–Whitney was used when the normality assumption was violated. To compare the scales by marital status or research area, the analysis of variance was used: the *F* test when both normality and homoscedasticity assumptions were verified, the Kruskal–Wallis test when only normality assumption was violated, or the Games–Howell test when the assumption of homogeneity of variances was violated.

Multivariate linear regression analyses were performed using the scores of the questionnaires as dependent variables, and gender, age, marital status, type of contract, and research area as the exploratory variables. These models allowed us to assess associations and check for confounders. It was used the forward and backward methods to select the variables. Normality and homoscedasticity assumptions were checked.

R program version 4.0.4 (R Core Team, Austria) for Windows was used to perform the statistical analyses. A significance level of 0.05.

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Sociodemographic and Health Characteristics

The sample used consisted of 243 participants, 69.5% female. The participants' age ranged between 21 and 72, being an average age of 37.9 ± 9.6 years. When analyzing the professional activity, 40.8% presented a contract with the institution/center of research, 44.1% presented no contract (research fellowship), and 15.2% answered "other situation." The study included participants from various research areas, with the majority being in the "Natural and Agricultural Sciences" (33.7%) and the "Social Sciences" (21.8%).

Most of the participants perceive their health as good (67.1%) and 7.4% have been infected with COVID-19.

Table 1 shows the sociodemographic and health characteristics of the sample.

Table 1

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TABLE 1. Sociodemographic and health characteristics.

When the scales selected for this study were analyzed, the low values stand out for the cognitive fear scale [Med = 0, IQR = (0, 3)], DASS-21 depression [Med = 4, IQR = (2, 9)], and DASS-21 anxiety [Med = 3, IQR = (1, 6)] (**Figure 1**). In the CISS-21 task-oriented (18.13 ± 5.67) and CISS-21 avoidance (10.58 ± 5.10) scales, intermediate values predominate. In the CISS-21 emotional-oriented (13.47 ± 7.39), emotional fear (5.95 ± 3.98), and DASS-21 stress (8.16 ± 5.09) scales there is great heterogeneity in the values observed. On the CISS-21 emotional-oriented scale there appears to be a similar frequency of responses across the range of possible values (uniform distribution).

Figure 1

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FIGURE 1. Empirical distribution of scales and Pearson's linear correlation coefficient between the scales * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$.

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- DASS-21 stress, DASS-21 anxiety, and DASS-21 depression (all $r > 0.70$);
- CISS-21 emotional-oriented with DASS-21 stress ($r = 0.683$), DASS-21 depression ($r = 0.622$), and DASS-21 anxiety ($r = 0.557$),
- Emotional fear and cognitive fear ($r = 0.652$).

Analysis of Scale by Sociodemographic Characteristics

The differences between the scales and some variables, such as gender, age, professional activity, and research area, were studied.

Genders

Significant differences were only detected on the emotional fear scale between women and men ($W = 5,160$, $p = 0.030$); women [Med = 6, IQR = (3, 9)] had higher values than men [Med = 4.5, IQR = (2, 8)]. In the remaining scales, there were no significant differences between genders ($p > 0.05$).

Age

When age and scales were compared, there was a significant but weak negative linear relationship between age and the scales CISS-21 emotional-oriented, DASS-21 depression, DASS-21 anxiety, and DASS-21 stress (Table 2, $p < 0.001$). These data were indicators of the existence of a tendency for the higher values of these scales to be associated with younger researchers and for the lower values of these scales to be associated with older researchers.

Table 2

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TABLE 2. Pearson's correlation coefficient (r), and p -value (p), between age and scales.

The negative linear relationship between age and the cognitive fear and CISS-21 avoidance scales, although significant, is almost insignificant.

Marital Status

For the marital status analysis, the widowed and separated/divorced categories were joined, since there are only three widowers. We detected that cognitive fear, emotional-oriented CISS-21, and all the DASS-21 scales differ significantly between marital status (all $p < 0.05$, Table 3). Single people had higher values than married people on all these scales (all $p < 0.05$).

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TABLE 3. Median (1st quartile, 3rd quartile), or mean and standard deviation, for each scale by marital status of the researchers and p -value from analysis of variance [(¹)parametric ANOVA, (²)Kruskal–Wallis test, (³) Games–Howell test].

Type of Contract

No significant differences were found on any scale by type of contract of the researchers (all $p > 0.05$).

Research Area

There were significant differences in DASS-21 depression ($p = 0.020$) and DASS-21 stress ($p = 0.042$) scales between research areas (Figure 2). Researchers in the medical and health sciences had higher scores than those in the social sciences on the DASS-21 depression scale ($p < 0.1$). The multiple comparisons test did not detect which pairs of research areas significantly differed in the DASS-21 stress scale, but by the graphical analysis, researchers in the social sciences area seem to have lower values than those in other areas.

Figure 2

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FIGURE 2. Empirical distribution of DASS-21 depression and DASS-21 stress scales by research area of the researchers.

All the adjusted models for the several scores of the questionnaires allowed us to check the inexistence of confounders in most of the bivariate analyses presented in the previous sections on the emotional fear scale. However, the explanation power of the adjusted models was small (in all, $R^2_{Adj} < 0.2$). The adjusted models for scores in emotional fear and CISS task-oriented did not fit the data. Older researchers had significantly lower scores in cognitive fear, CISS avoidance, CISS emotional-oriented, DASS depression, DASS anxiety, and DASS stress. The multivariate models revealed that women had significantly lower scores than men only in DASS depression ($b = -0.362$, $p = 0.006$). Also, researchers in exact sciences ($b = -0.811$, $p = 0.021$) and in agriculture and natural sciences ($b = -0.585$, $p = 0.020$) had significantly lower scores

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This study seeks to understand the anxiety, stress, and depression researchers' perception during the pandemic period and the coping strategies that they were developed.

Sociodemographic and Professional Characteristics

Regarding sex, differences are only observed in the emotional fear scale where women have higher values than men. Another author concludes that the higher fear reported by female gender can be explained by their higher sensitivity to stress when compared to the male gender (55). However, in our study, there are no differences in anxiety, stress, and depression between the sexes. These results are not consistent with most studies that report that women have higher levels of stress, anxiety, and depression (33, 55–57). These results may be due to having a sample of only researchers who may have a different response to these variables. It is important to note that regarding gender balance, women tend to be overrepresented in this profession as well as among such frontline service workers (58).

Younger researchers showed higher values of stress, depression, anxiety, and fears related to COVID-19 when compared to older researchers. Studies in the general population support these results by confirming that younger age groups are more vulnerable to symptoms of stress, depression, and anxiety (59, 60). As well as, when analyzing the fear toward COVID-19, the older researchers showed lower levels (55). However, it may be that older people may consider that they have little to lose as they have already had relatively long lives and had a stable labor situation. For their part, the younger people are worried about the future consequences and economic challenges caused by the pandemic, as they are the most affected by their employment stability, may watch and listen to much more negative news on social media (2, 61, 62). Nevertheless, additional evidence is needed to examine such speculation.

Single participants had higher scores of stress, depression, and anxiety than those who are married. Other studies have obtained similar results (59). Studies suggested that being married can be a protective factor for stress and anxiety (63).

Researchers in the medical and health sciences have higher levels of depression than those in the social sciences. Although we do not have identical studies with researchers from different fields to compare these results, several studies indicate the high prevalence of stress, anxiety, and depression in health care workers (64). Medical and health sciences researchers have had to change their research projects to give priority to pandemic-related research. Also, being their field, they are more awake to the pandemic health consequences, so these factors may be contributing to higher levels of depression. Social science researchers also have lower stress scores than researchers from other areas. Perhaps researchers in the social sciences are more prepared for changes in society, since they study social and collective behaviors, and this is the reason for lower stress levels. However, more studies are needed to draw conclusions.

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with the highest mean (8.16 ± 5.09), followed by depression (6.01 ± 5.37), and anxiety (3.88 ± 4.09). These results are like a study in an Indian population with respect to the order of severity of the domains (65). However, the Indian study obtained higher values for the 31 researchers in the sample in all domains: stress (14.71 ± 9.89), depression (10.65 ± 8.72), and anxiety (9.81 ± 6.88).

Coping Stress Strategies

The results showed that there is a significantly positive and moderately linear relationship between the anxiety levels and emotional-oriented coping strategies, i.e., general researchers with low (/high) anxiety values also have low (/high) emotional-oriented coping strategies. However, there is no significant linear relationship between the anxiety levels, and the task-oriented and avoidance coping strategies. These results corroborate another study that showed that depressive symptoms were positively correlated with emotional coping (66). We also verified that the stress levels are significantly positively and moderately linearly related to the emotional-oriented coping strategies, but it is not linearly related to the task-oriented and avoidance coping strategies. The depression levels are significantly related in a positive and moderate linear fashion with the emotional-oriented coping strategies and in a very weak negative linear fashion with the task-oriented coping strategies, but it is not linearly related to the avoidance coping strategies.

The task-oriented coping strategies were not supported but the relationship between the use of the emotional-oriented coping strategies was found. Although some studies report that emotion-focused and problem-focused strategies play role in reducing and increasing mental health (67), the unexpected event of COVID-19 pandemic can be may have triggered a more intense emotional response, indicating the need for further studies on this pandemic. But, their use can be inappropriate (66).

In this study, we did not find the results shown in other studies that showed that people that experienced psychological distress who used more task coping strategies experienced low levels of depression, anxiety, and stress (68).

The cognitive and emotional fears of COVID-19 pandemic situations also influence coping strategies or defensive mechanisms (69). In Huang and collaborators' study, it was found that fears were significantly positively related to problem-focused coping and emotion-focused coping. Therefore, the more problem-focused coping, the more fear (46). When analyzing the FCV-19S scale the data by emotional fear scale showed significantly related in a very weak positive linear way with CISS-21 emotional-oriented, task-oriented, and avoidance domains. On the other hand, the cognitive fear scale is significantly related in a very weak positive linear fashion to the emotional-oriented and avoidance coping strategies. There is no significant linear relationship between cognitive fear and task-oriented coping strategies.

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which conditioned the monitoring of the effects and strategies adopted. Longitudinal studies are needed. Also, the methodology adopted, an online survey, may contribute to non-response bias in the study results. On the other hand, we do not know how many researchers there are in Portugal, because there are several contracting modalities, and many researchers are not in the career and presenting research grants (without contractual ties). So, it was not possible to calculate the sample size to ensure that the sample was representative.

Conclusion

The findings of this study support the growing concern for the psychological well-being of researchers and the need for intervention. Being a female seems to be related to greater fears. Research areas, such as medical and health sciences, presented higher depression and stress levels. Also, significant differences were found between depression and emotional-oriented coping strategies, and the type of contract. The anxiety, depression, and stress levels were significantly related positively to emotional-oriented coping strategies.

This study intended to assess the levels of anxiety, depression, stress, fears, and coping strategies in Portuguese researchers during the COVID-19 pandemic. There is a gap in the literature in terms of scientific studies on these professionals, and this knowledge is central to the development of intervention plans for these professionals, in the future. However, this study suggests more extensive and diverse studies on the improvement of mental health and the reduction of anxiety/depression and stress in researchers. It is fundamental to investigate and intervene to promote the health of these professionals and their work performance, highlighting the importance of coping strategies. It is important to prioritize essential competencies, set goals, and coping strategies that increase health and performance.

Data Availability Statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics Statement

The studies involving human participants were reviewed and approved by Comissão de Ética da Universidade de Évora. The patients/participants provided their written informed consent to participate in this study.

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PB, LP, and AP were responsible for the concept and design of the study, interpretation of results, writing, and critical review of the manuscript. PB and LP were responsible for data collection and analysis and writing—the original draft. PB, LP, and CF were responsible for the interpretation of the results. AA was responsible for statistical analysis. AP, PO-S, and ML were responsible for writing, reviewing, and editing the manuscript. All authors contributed to the article and approved the submitted version.

Funding

The present publication was funded by Fundação Ciência e Tecnologia, IP national support through CHRC (UIDP/04923/2020). This work was partially supported by CEDH, through the Project UIDB/04872/2020 of the Fundação para a Ciência e a Tecnologia, Portugal. Also, the CIMA was supported by the Fundação para a Ciência e a Tecnologia, project UID/04674/2020.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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References

1. Hui DS, Azhar EI, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health—The latest 2019 novel coronavirus outbreak in Wuhan, China. *Int J Infect Dis.* (2020) 91:264–6. doi: 10.1016/j.ijid.2020.01.009
[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/31953166/\)](https://pubmed.ncbi.nlm.nih.gov/31953166/) | [CrossRef Full Text \(https://doi.org/10.1016/j.ijid.2020.01.009\)](https://doi.org/10.1016/j.ijid.2020.01.009) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=DS+Hui&author=EI+Azhar&author=TA+Madani&author=F+Ntoumi&author=R+Kock&author=O+Dar+&publication_year=2020\)](http://scholar.google.com/scholar_lookup?author=DS+Hui&author=EI+Azhar&author=TA+Madani&author=F+Ntoumi&author=R+Kock&author=O+Dar+&publication_year=2020)
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[author=Y+Huang&author=N+Zhao+&publication_year=2020&title=Generalized+anxiety+disorder,+depressive+symptoms+and+sleep+quality+during+COVID-19+outbreak+in+China%3A+a+web-based+cross-sectional+survey&journal=Psychiatry+Res.&volume=288&pages=112954](http://scholar.google.com/scholar_lookup?author=Y+Huang&author=N+Zhao+&publication_year=2020&title=Generalized+anxiety+disorder,+depressive+symptoms+and+sleep+quality+during+COVID-19+outbreak+in+China%3A+a+web-based+cross-sectional+survey&journal=Psychiatry+Res.&volume=288&pages=112954))

3. Xiang Y-T, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*. (2020) 7:228–9. doi: 10.1016/S2215-0366(20)30046-8

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32032543\)](https://pubmed.ncbi.nlm.nih.gov/32032543) | [CrossRef Full Text \(https://doi.org/10.1016/S2215-0366\(20\)30046-8\)](#) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?author=Y+T+Xiang&author=Y+Yang&author=W+Li&author=L+Zhang&author=Q+Zhang&author=T+Cheung+&publication_year=2020&title=Timely+mental+health+care+for+the+2019+novel+coronavirus+outbreak+is+urgently+needed&journal=Lancet+Psychiatry.&volume=7&pages=228-9

[T+Xiang&author=Y+Yang&author=W+Li&author=L+Zhang&author=Q+Zhang&author=T+Cheung+&publication_year=2020&title=Timely+mental+health+care+for+the+2019+novel+coronavirus+outbreak+is+urgently+needed&journal=Lancet+Psychiatry.&volume=7&pages=228-9](http://scholar.google.com/scholar_lookup?author=Y+T+Xiang&author=Y+Yang&author=W+Li&author=L+Zhang&author=Q+Zhang&author=T+Cheung+&publication_year=2020&title=Timely+mental+health+care+for+the+2019+novel+coronavirus+outbreak+is+urgently+needed&journal=Lancet+Psychiatry.&volume=7&pages=228-9))

4. Batista P, Duque V, Luzio-Vaz A, Pereira A. Anxiety impact during COVID-19: a systematic review. *J Infect Dev Countries*. (2021) 15:320–5. doi: 10.3855/jidc.12730

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33839704\)](https://pubmed.ncbi.nlm.nih.gov/33839704) | [CrossRef Full Text \(https://doi.org/10.3855/jidc.12730\)](#) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=P+Batista&author=V+Duque&author=A+Luzio-Vaz&author=A+Pereira+&publication_year=2021&title=Anxiety+impact+during+COVID-19%3A+a+systematic+review&journal=J+Infect+Dev+Countries.&volume=15&pages=320-5)

[author=P+Batista&author=V+Duque&author=A+Luzio-Vaz&author=A+Pereira+&publication_year=2021&title=Anxiety+impact+during+COVID-19%3A+a+systematic+review&journal=J+Infect+Dev+Countries.&volume=15&pages=320-5](http://scholar.google.com/scholar_lookup?author=P+Batista&author=V+Duque&author=A+Luzio-Vaz&author=A+Pereira+&publication_year=2021&title=Anxiety+impact+during+COVID-19%3A+a+systematic+review&journal=J+Infect+Dev+Countries.&volume=15&pages=320-5))

5. Paredes MR, Apaolaza V, Fernandez-Robin C, Hartmann P, Yañez-Martinez D. The impact of the COVID-19 pandemic on subjective mental well-being: the interplay of perceived threat, future anxiety and resilience. *Pers Individ Dif*. (2021) 170:110455. doi: 10.1016/j.paid.2020.110455

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33071413\)](https://pubmed.ncbi.nlm.nih.gov/33071413) | [CrossRef Full Text \(https://doi.org/10.1016/j.paid.2020.110455\)](#) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=MR+Paredes&author=V+Apaolaza&author=C+Fernandez-Robin&author=P+Hartmann&author=D+Yañez-Martinez+&publication_year=2021&title=The+impact+of+the+COVID-19+pandemic+on+subjective+mental+well-being%3A+the+interplay+of+perceived+threat,+future+anxiety+and+resilience&journal=Pers+Individ+Dif.&volume=170&pages=110455)

[author=MR+Paredes&author=V+Apaolaza&author=C+Fernandez-Robin&author=P+Hartmann&author=D+Yañez-Martinez+&publication_year=2021&title=The+impact+of+the+COVID-19+pandemic+on+subjective+mental+well-being%3A+the+interplay+of+perceived+threat,+future+anxiety+and+resilience&journal=Pers+Individ+Dif.&volume=170&pages=110455](http://scholar.google.com/scholar_lookup?author=MR+Paredes&author=V+Apaolaza&author=C+Fernandez-Robin&author=P+Hartmann&author=D+Yañez-Martinez+&publication_year=2021&title=The+impact+of+the+COVID-19+pandemic+on+subjective+mental+well-being%3A+the+interplay+of+perceived+threat,+future+anxiety+and+resilience&journal=Pers+Individ+Dif.&volume=170&pages=110455))

6. Solano P, Ustulin M, Pizzorno E, Vichi M, Pompili M, Serafini G, et al. A Google-based approach for monitoring suicide risk. *Psychiatry Res*. (2016) 246:581–6. doi: 10.1016/j.psychres.2016.10.030

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/27837725\)](https://pubmed.ncbi.nlm.nih.gov/27837725) | [CrossRef Full Text \(https://doi.org/10.1016/j.psychres.2016.10.030\)](#) | [Download articles/10.3389/fpubh.2022.850376/pdf](#)

7. Crommelin DJ, Volkin DB, Hoogendoorn KH, Lubiniecki AS, Jiskoot W. The science is there: key considerations for stabilizing viral vector-based Covid-19 vaccines. *J Pharm Sci.* (2021) 110:627–34. doi: 10.1016/j.xphs.2020.11.015
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33242452\)](https://pubmed.ncbi.nlm.nih.gov/33242452) | [CrossRef Full Text \(https://doi.org/10.1016/j.xphs.2020.11.015\)](https://doi.org/10.1016/j.xphs.2020.11.015) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=DJ+Crommelin&author=DB+Volkin&author=KH+Hoogendoorn&author=AS+Lubiniecki&author=W+Jiskoot&publication_year=2021&title=The+science+is+there%3A+key+considerations+for+stabilizing+viral+vector-based+Covid-19+vaccines&journal=J+Pharm+Sci.&volume=110&pages=627-34\)](http://scholar.google.com/scholar_lookup?author=DJ+Crommelin&author=DB+Volkin&author=KH+Hoogendoorn&author=AS+Lubiniecki&author=W+Jiskoot&publication_year=2021&title=The+science+is+there%3A+key+considerations+for+stabilizing+viral+vector-based+Covid-19+vaccines&journal=J+Pharm+Sci.&volume=110&pages=627-34)
8. Li Y, Tenchov R, Smoot J, Liu C, Watkins S, Zhou Q, et al. Comprehensive review of the global efforts on COVID-19 vaccine development. *ACS Central Sci.* (2021) 7:512–33. doi: 10.1021/acscentsci.1c00120
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/34056083\)](https://pubmed.ncbi.nlm.nih.gov/34056083) | [CrossRef Full Text \(https://doi.org/10.1021/acscentsci.1c00120\)](https://doi.org/10.1021/acscentsci.1c00120) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=Y+Li&author=R+Tenchov&author=J+Smoot&author=C+Liu&author=S+Watkins&author=Q+Zhou&publication_year=2021&title=Comprehensive+review+of+the+global+efforts+on+COVID-19+vaccine+development&journal=ACS+Central+Sci.&volume=7&pages=512-33\)](http://scholar.google.com/scholar_lookup?author=Y+Li&author=R+Tenchov&author=J+Smoot&author=C+Liu&author=S+Watkins&author=Q+Zhou&publication_year=2021&title=Comprehensive+review+of+the+global+efforts+on+COVID-19+vaccine+development&journal=ACS+Central+Sci.&volume=7&pages=512-33)
9. Rix J. Making friends with scientists. *Br J Rev.* (2021) 32:27–32. doi: 10.1177/09564748211020947
- [CrossRef Full Text \(https://doi.org/10.1177/09564748211020947\)](https://doi.org/10.1177/09564748211020947) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=J+Rix&publication_year=2021&title=Making+friends+with+scientists&journal=Br+J+Rev.&volume=32&pages=27-32\)](http://scholar.google.com/scholar_lookup?author=J+Rix&publication_year=2021&title=Making+friends+with+scientists&journal=Br+J+Rev.&volume=32&pages=27-32)
10. Ulferts GW, Cannon NJ, Howard TL. The changing landscape for funding research and development. *Res High Educ J.* (2021) 40:1–19.
- [Google Scholar \(http://scholar.google.com/scholar_lookup?author=GW+Ulferts&author=NJ+Cannon&author=TL+Howard&publication_year=2021&title=The+changing+landscape+for+funding+research+and+development&journal=Res+High+Educ+J.&volume=40&pages=1-19\)](http://scholar.google.com/scholar_lookup?author=GW+Ulferts&author=NJ+Cannon&author=TL+Howard&publication_year=2021&title=The+changing+landscape+for+funding+research+and+development&journal=Res+High+Educ+J.&volume=40&pages=1-19)
11. Herschberg C, Benschop Y, van den Brink M. Precarious postdocs: a comparative study on recruitment and selection of early-career researchers. *Scand J Manag.* (2018) 34:303–10. doi: 10.1016/j.scaman.2018.10.001
- [CrossRef Full Text \(https://doi.org/10.1016/j.scaman.2018.10.001\)](https://doi.org/10.1016/j.scaman.2018.10.001) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=C+Herschberg&author=Y+Benschop&author=M+van+den+Brink&publication_year=2018&title=Precarious+postdocs%3A+a+comparative+study+on+recruitment+and+election+of+early-career+researchers&journal=Scand+J+Manag.&volume=34&pages=303-10\)](http://scholar.google.com/scholar_lookup?author=C+Herschberg&author=Y+Benschop&author=M+van+den+Brink&publication_year=2018&title=Precarious+postdocs%3A+a+comparative+study+on+recruitment+and+election+of+early-career+researchers&journal=Scand+J+Manag.&volume=34&pages=303-10)
12. Ghebreyesus TA. Safeguard research in the time of COVID-19. *Nature Med.* (2020) 26:443. doi: 10.1038/s41591-020-0850-0
- [Download \(articles/10.3389/fpubh.2022.850376/pdf\)](https://doi.org/10.1038/s41591-020-0850-0)

author=TA+Ghebreyesus+&publication_year=2020&title=Safeguard+research+in+the+time+of+COVID-19&journal=Nature+Med.&volume=26&pages=443)

13. Myers KR, Tham WY, Yin Y, Cohodes N, Thursby JG, Thursby MC, et al. Unequal effects of the COVID-19 pandemic on scientists. *Nat Hum Behav.* (2020) 4:880–3. doi: 10.1038/s41562-020-0921-y

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32669671/\)](https://pubmed.ncbi.nlm.nih.gov/32669671/) | [CrossRef Full Text \(https://doi.org/10.1038/s41562-020-0921-y\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](#)

author=KR+Myers&author=WY+Tham&author=Y+Yin&author=N+Cohodes&author=JG+Thursby&author=MC+Thursby+&publication_year=2020&title=Unequal+effects+of+the+COVID-19+pandemic+on+scientists&journal=Nat+Hum+Behav.&volume=4&pages=880-3)

14. Liang S, Wu X, Jin F. Gut-brain psychology: rethinking psychology from the microbiota–gut–brain axis. *Front Integr Neurosci.* (2018) 12:33. doi: 10.3389/fnint.2018.00033

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/30271330/\)](https://pubmed.ncbi.nlm.nih.gov/30271330/) | [CrossRef Full Text \(https://doi.org/10.3389/fnint.2018.00033\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](#)

author=S+Liang&author=X+Wu&author=F+Jin+&publication_year=2018&title=Gut-brain+psychology%3A+rethinking+psychology+from+the+microbiota–gut–brain+axis&journal=Front+Integr+Neurosci.&volume=12&pages=33)

15. Sohrabi C, Mathew G, Franchi T, Kerwan A, Griffin M, Soleil C, et al. Impact of the coronavirus (COVID-19) pandemic on scientific research and implications for clinical academic training – a review. *Int J Surg.* (2021) 86:57–63. doi: 10.1016/j.ijssu.2020.12.008

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/34537397/\)](https://pubmed.ncbi.nlm.nih.gov/34537397/) | [CrossRef Full Text \(https://doi.org/10.1016/j.ijssu.2020.12.008\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](#)

author=C+Sohrabi&author=G+Mathew&author=T+Franchi&author=A+Kerwan&author=M+Griffin&author=C+Soleil+&publication_year=2021&title=Impact+of+the+coronavirus+(COVID-19)+pandemic+on+scientific+research+and+implications+for+clinical+academic+training+–+a+review&journal=Int+J+Surg.&volume=86&pages=57-63)

16. Drago JZ, Gönen M, Thanarajasingam G, Sacks CA, Morris MJ, Kantoff PW, et al. Inferences about drug safety in phase iii trials in oncology: examples from advanced prostate cancer. *JNCI J Natl Cancer Inst.* (2020) 113:553–61. doi: 10.1093/jnci/djaa134

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32857839/\)](https://pubmed.ncbi.nlm.nih.gov/32857839/) | [CrossRef Full Text \(https://doi.org/10.1093/jnci/djaa134\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](#)

author=JZ+Drago&author=M+Gönen&author=G+Thanarajasingam&author=CA+Sacks&author=MJ+Morris&author=PW+Kantoff+&publication_year=2020&title=Inferences+about+drug+safety+in+phase+iii+trials+in+oncology%3A+examples+from+advanced+prostate+cancer&journal=JNCI+J+Natl+Cancer+Inst.&volume=113&pages=553-61)

17. O'Connor DB, Aggleton JP, Chakrabarti B, Cooper CL, Creswell C, Dunsmuir S, et al. Research priorities for the COVID-19 pandemic and beyond: a call to action for psychological science. *Br Psychol Soc.* (2020) 111:603–29. doi: 10.1111/bjop.12468

[Download\(/articles/10.3389/fpubh.2022.850376/pdf\)](#)

19+pandemic+and+beyond%3A+a+call+to+action+for+psychological+science&journal=Br+Psychol+Soc&volume=111&pages=603-29)

18. Porter SJ, Hook DW. *How COVID-19 Is Changing Research Culture*. London: Digital Science (2020).

[Google Scholar](http://scholar.google.com/scholar_lookup?author=SJ+Porter&author=DW+Hook+&title=How+COVID-19+Is+Changing+Research+Culture) (http://scholar.google.com/scholar_lookup?author=SJ+Porter&author=DW+Hook+&title=How+COVID-19+Is+Changing+Research+Culture)

19. Cui R, Ding H, Zhu F. Gender inequality in research productivity during the COVID-19 pandemic. *Manufactur Serv Operat Manag.* (2021) 24:707–726. doi: 10.2139/ssrn.3623492

[CrossRef Full Text](https://doi.org/10.2139/ssrn.3623492) (<https://doi.org/10.2139/ssrn.3623492>) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=R+Cui&author=H+Ding&author=F+Zhu+&publication_year=2021&title=Gender+inequality+in+research+productivity+during+the+COVID-19+pandemic&journal=Manufactur+Serv+Operat+Manag&volume=24&pages=707-726) (http://scholar.google.com/scholar_lookup?author=R+Cui&author=H+Ding&author=F+Zhu+&publication_year=2021&title=Gender+inequality+in+research+productivity+during+the+COVID-19+pandemic&journal=Manufactur+Serv+Operat+Manag&volume=24&pages=707-726)

20. Kubota T. *Lab Life at Stanford During the COVID-19 Pandemic*. Stanford News Service (2021). Available online at: <https://news.stanford.edu/2021/01/13/research-covid-19-pandemic/> (<https://news.stanford.edu/2021/01/13/research-covid-19-pandemic/>)

[Google Scholar](http://scholar.google.com/scholar_lookup?author=T+Kubota+&publication_year=2021&title=Stanford+News+Service&journal=Lab+Life+at+Stanford+During+the+COVID-19+Pandemic) (http://scholar.google.com/scholar_lookup?author=T+Kubota+&publication_year=2021&title=Stanford+News+Service&journal=Lab+Life+at+Stanford+During+the+COVID-19+Pandemic)

21. Omary MB, Eswaraka J, Kimball SD, Moghe PV, Panettieri RA, Scotto KW. The COVID-19 pandemic and research shutdown: staying safe and productive. *J Clin Invest.* (2020) 130:2745–8. doi: 10.1172/JCI138646

[PubMed Abstract](https://pubmed.ncbi.nlm.nih.gov/32243259) (<https://pubmed.ncbi.nlm.nih.gov/32243259>) | [CrossRef Full Text](https://doi.org/10.1172/JCI138646) (<https://doi.org/10.1172/JCI138646>)

22. Casadio M, Simon D. *Moving a Research Lab During the COVID-19 Pandemic*. New York: Rockefeller University Press (2020).

[PubMed Abstract](https://pubmed.ncbi.nlm.nih.gov/33332553) (<https://pubmed.ncbi.nlm.nih.gov/33332553>) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=M+Casadio&author=D+Simon+&publication_year=2020&title=Moving+a+Research+Lab+During+the+COVID-19+Pandemic) (http://scholar.google.com/scholar_lookup?author=M+Casadio&author=D+Simon+&publication_year=2020&title=Moving+a+Research+Lab+During+the+COVID-19+Pandemic)

23. Alon T, Doepke M, Olmstead-Rumsey J, Tertilt M. *The Impact of COVID-19 on Gender Equality*. National Bureau of Economic Research (2020).

24. Amano-Patiño N, Faraglia E, Giannitsarou C, Hasna Z. *Who Is Doing New Research in the Time of COVID-19? Not the Female Economists*. Publishing Measuring Success in Economics. London: Centre for Economic Policy Research. Available online at: <https://voxeu.org/article/who-doing-new-research-time-covid-19-not-female-economists> (<https://voxeu.org/article/who-doing-new-research-time-covid-19-not-female-economists>) (2020).

[Google Scholar](http://scholar.google.com/scholar_lookup?author=N+Amano-Patiño&author=E+Faraglia&author=C+Giannitsarou&author=Z+Hasna+&publication_year=2020&title=Who+Is+Doing+New+Research+in+the+Time+of+COVID-19+Not+the+Female+Economists) (http://scholar.google.com/scholar_lookup?author=N+Amano-Patiño&author=E+Faraglia&author=C+Giannitsarou&author=Z+Hasna+&publication_year=2020&title=Who+Is+Doing+New+Research+in+the+Time+of+COVID-19+Not+the+Female+Economists)

[Download/articles/10.3389/fpubh.2022.850376/pdf](https://doi.org/10.3389/fpubh.2022.850376)

- author=JO+Korbel&author=O+Stegle+&publication_year=2020&title=Effects+of+the+COVID-19+pandemic+on+life+scientists&journal=Genome+Biol&volume=21&pages=113)
26. Cheng C, Song S. How early-career researchers are navigating the Covid-19 pandemic. *Mol Plant*. (2020) 13:1229–30. doi: 10.1016/j.molp.2020.07.018
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32730995/\)](https://pubmed.ncbi.nlm.nih.gov/32730995/) | [CrossRef Full Text \(https://doi.org/10.1016/j.molp.2020.07.018\)](https://doi.org/10.1016/j.molp.2020.07.018) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=C+Cheng&author=S+Song+&publication_year=2020&title=How+early-career+researchers+are+navigating+the+Covid-19+pandemic&journal=Mol+Plant.&volume=13&pages=1229-30\)](http://scholar.google.com/scholar_lookup?author=C+Cheng&author=S+Song+&publication_year=2020&title=How+early-career+researchers+are+navigating+the+Covid-19+pandemic&journal=Mol+Plant.&volume=13&pages=1229-30)
27. Harrop C, Bal V, Carpenter K, Halladay A. A lost generation? The impact of the COVID-19 pandemic on early career ASD researchers. *Autism Res*. (2021) 14:1078–87. doi: 10.1002/aur.2503
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33759380/\)](https://pubmed.ncbi.nlm.nih.gov/33759380/) | [CrossRef Full Text \(https://doi.org/10.1002/aur.2503\)](https://doi.org/10.1002/aur.2503) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=C+Harrop&author=V+Bal&author=K+Carpenter&author=A+Halladay+&publication_year=2021&title=A+lost+generation%3F+The+impact+of+the+COVID-19+pandemic+on+early+career+ASD+researchers&journal=Autism+Res&volume=14&pages=1078-87\)](http://scholar.google.com/scholar_lookup?author=C+Harrop&author=V+Bal&author=K+Carpenter&author=A+Halladay+&publication_year=2021&title=A+lost+generation%3F+The+impact+of+the+COVID-19+pandemic+on+early+career+ASD+researchers&journal=Autism+Res&volume=14&pages=1078-87)
28. Gabster BP, van Daalen K, Dhatt R, Barry M. Challenges for the female academic during the COVID-19 pandemic. *Lancet*. (2020) 395:1968–70. doi: 10.1016/S0140-6736(20)31412-4
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32563275/\)](https://pubmed.ncbi.nlm.nih.gov/32563275/) | [CrossRef Full Text \(https://doi.org/10.1016/S0140-6736\(20\)31412-4\)](https://doi.org/10.1016/S0140-6736(20)31412-4) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=BP+Gabster&author=K+van+Daalen&author=R+Dhatt&author=M+Barry+&publication_year=2020&title=Challenges+for+the+female+academic+during+the+COVID-19+pandemic&journal=Lancet.&volume=395&pages=1968-70\)](http://scholar.google.com/scholar_lookup?author=BP+Gabster&author=K+van+Daalen&author=R+Dhatt&author=M+Barry+&publication_year=2020&title=Challenges+for+the+female+academic+during+the+COVID-19+pandemic&journal=Lancet.&volume=395&pages=1968-70)
29. Sarah K, Oceane S, Emily F, Carole F. Learning from lockdown—Assessing the positive and negative experiences, and coping strategies of researchers during the COVID-19 pandemic. *Appl Anim Behav Sci*. (2021) 236:105269. doi: 10.1016/j.applanim.2021.105269
- [CrossRef Full Text \(https://doi.org/10.1016/j.applanim.2021.105269\)](https://doi.org/10.1016/j.applanim.2021.105269) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=K+Sarah&author=S+Oceane&author=F+Emily&author=F+Carole+&publication_year=2021&title=Learning+from+lockdown-Assessing+the+positive+and+negative+experiences,+and+coping+strategies+of+researchers+during+the+COVID-19+pandemic&journal=Appl+Anim+Behav+Sci.&volume=236&pages=105269\)](http://scholar.google.com/scholar_lookup?author=K+Sarah&author=S+Oceane&author=F+Emily&author=F+Carole+&publication_year=2021&title=Learning+from+lockdown-Assessing+the+positive+and+negative+experiences,+and+coping+strategies+of+researchers+during+the+COVID-19+pandemic&journal=Appl+Anim+Behav+Sci.&volume=236&pages=105269)
30. Lee SA. Coronavirus Anxiety Scale: a brief mental health screener for COVID-19 related anxiety. *Death Stud*. (2020) 44:393–401. doi: 10.1080/07481187.2020.1748481
- [PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32299304/\)](https://pubmed.ncbi.nlm.nih.gov/32299304/) | [CrossRef Full Text \(https://doi.org/10.1080/07481187.2020.1748481\)](https://doi.org/10.1080/07481187.2020.1748481) | [Google Scholar \(http://scholar.google.com/scholar_lookup?article_id=10.3389/fpubh.2022.850376/pdf\)](http://scholar.google.com/scholar_lookup?article_id=10.3389/fpubh.2022.850376/pdf)

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33711026\)](https://pubmed.ncbi.nlm.nih.gov/33711026) | [CrossRef Full Text](#)

(<https://doi.org/10.1371/journal.pone.0247679>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=E+Alnazly&author=OM+Khraisat&author=AM+Al-

Bashaireh&author=CL+Bryant+&publication_year=2021&title=Anxiety,+depression,+stress,+fear+and+social+support+during+COVID-

19+pandemic+among+Jordanian+healthcare+workers&journal=PLoS+ONE.&volume=16&pages=e0247679)

32. Barzilay R, Moore TM, Greenberg DM, DiDomenico GE, Brown LA, White LK, et al. Resilience, COVID-19-related stress, anxiety and depression during the pandemic in a large population enriched for healthcare providers. *Transl Psychiatry*. (2020) 10:1–8. doi: 10.1038/s41398-020-00982-4

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32820171\)](https://pubmed.ncbi.nlm.nih.gov/32820171) | [CrossRef Full Text](#)

(<https://doi.org/10.1038/s41398-020-00982-4>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=R+Barzilay&author=TM+Moore&author=DM+Greenberg&author=GE+DiDomenico&author=LA+Brown&author=LK+White+&publication_year=2020&title=Resilience,+COVID-19-

related+stress,+anxiety+and+depression+during+the+pandemic+in+a+large+population+enriched+for+healthcare+providers&journal=Transl+Psychiatry.&volume=10&pages=1-8)

33. de Pinho LG, Sampaio F, Sequeira C, Teixeira L, Fonseca C, Lopes MJ. Portuguese nurses' stress, anxiety, and depression reduction strategies during the covid-19 outbreak. *Int J Environ Res Public Health*. (2021) 18:3490. doi: 10.3390/ijerph18073490

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33801740\)](https://pubmed.ncbi.nlm.nih.gov/33801740) | [CrossRef Full Text](#)

(<https://doi.org/10.3390/ijerph18073490>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=LG+de+Pinho&author=F+Sampaio&author=C+Sequeira&author=L+Teixeira&author=C+Fonseca&author=MJ+Lopes+&publication_year=2021&title=Portuguese+nurses'+stress,+anxiety,+and+depression+reduction+strategies+during+the+covid-

19+outbreak&journal=Int+J+Environ+Res+Public+Health.&volume=18&pages=3490)

34. Luceño-Moreno L, Talavera-Velasco B, García-Albuérne Y, Martín-García J. Symptoms of posttraumatic stress, anxiety, depression, levels of resilience and burnout in Spanish health personnel during the COVID-19 pandemic. *Int J Environ Res Public Health*. (2020) 17:5514. doi: 10.3390/ijerph17155514

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32751624\)](https://pubmed.ncbi.nlm.nih.gov/32751624) | [CrossRef Full Text](#)

(<https://doi.org/10.3390/ijerph17155514>) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?author=L+Luceño-](http://scholar.google.com/scholar_lookup?author=L+Luceño-Moreno&author=B+Talavera-Velasco&author=Y+García-Albuérne&author=J+Martín-García+&publication_year=2020&title=Symptoms+of+posttraumatic+stress,+anxiety,+depression,+levels+of+resilience+and+burnout+in+Spanish+health+personnel+during+the+COVID-19+pandemic&journal=Int+J+Environ+Res+Public+Health.&volume=17&pages=5514)

Moreno&author=B+Talavera-Velasco&author=Y+García-Albuérne&author=J+Martín-García+&publication_year=2020&title=Symptoms+of+posttraumatic+stress,+anxiety,+depression,+levels+of+resilience+and+burnout+in+Spanish+health+personnel+during+the+COVID-

19+pandemic&journal=Int+J+Environ+Res+Public+Health.&volume=17&pages=5514)

35. Savitsky B, Findling Y, Erel A, Henrich J. Downloaded from <https://doi.org/10.3389/fpubh.2022.850376/pdf> by students

author=B+Savitsky&author=Y+Findling&author=A+Ereli&author=T+Hendel&publication_year=2020&title=Anxiety+and+coping+strategies+among+nursing+students+during+the+covid-19+pandemic&journal=Nurse+Educ+Pract.&volume=46&pages=102809)

36. Rodríguez-Hidalgo AJ, Pantaleón Y, Dios I, Falla D. Fear of COVID-19, stress, and anxiety in university undergraduate students: a predictive model for depression. *Front Psychol.* (2020) 11:3041. doi: 10.3389/fpsyg.2020.591797

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33224080/\)](https://pubmed.ncbi.nlm.nih.gov/33224080/) | [CrossRef Full Text](#)

(<https://doi.org/10.3389/fpsyg.2020.591797>) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?author=AJ+Rodríguez-Hidalgo&author=Y+Pantaleón&author=I+Dios&author=D+Falla&publication_year=2020&title=Fear+of+COVID-](http://scholar.google.com/scholar_lookup?author=AJ+Rodríguez-Hidalgo&author=Y+Pantaleón&author=I+Dios&author=D+Falla&publication_year=2020&title=Fear+of+COVID-19,+stress,+and+anxiety+in+university+undergraduate+students%3A+a+predictive+model+for+depression&journal=Front+Psychol.&volume=11&pages=3041)

[19,+stress,+and+anxiety+in+university+undergraduate+students%3A+a+predictive+mode](http://scholar.google.com/scholar_lookup?author=AJ+Rodríguez-Hidalgo&author=Y+Pantaleón&author=I+Dios&author=D+Falla&publication_year=2020&title=Fear+of+COVID-19,+stress,+and+anxiety+in+university+undergraduate+students%3A+a+predictive+model+for+depression&journal=Front+Psychol.&volume=11&pages=3041)

[l+for+depression&journal=Front+Psychol.&volume=11&pages=3041](http://scholar.google.com/scholar_lookup?author=AJ+Rodríguez-Hidalgo&author=Y+Pantaleón&author=I+Dios&author=D+Falla&publication_year=2020&title=Fear+of+COVID-19,+stress,+and+anxiety+in+university+undergraduate+students%3A+a+predictive+model+for+depression&journal=Front+Psychol.&volume=11&pages=3041))

37. Rogowska AM, Kuśnierz C, Bokszczanin A. Examining anxiety, life satisfaction, general health, stress and coping styles during COVID-19 pandemic in Polish sample of university students. *Psychol Res Behav Manag.* (2020) 13:797. doi: 10.2147/PRBM.S266511

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33061695/\)](https://pubmed.ncbi.nlm.nih.gov/33061695/) | [CrossRef Full Text](#)

(<https://doi.org/10.2147/PRBM.S266511>) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=AM+Rogowska&author=C+Kuśnierz&author=A+Bokszczanin&publication_year=2020&title=Examining+anxiety,+life+satisfaction,+general+health,+stress+and+coping+styles+during+COVID-19+pandemic+in+Polish+sample+of+university+students&journal=Psychol+Res+Behav+Manag.&volume=13&pages=797)

[author=AM+Rogowska&author=C+Kuśnierz&author=A+Bokszczanin&publication_year=2020&title=Examining+anxiety,+life+satisfaction,+general+health,+stress+and+coping+st](http://scholar.google.com/scholar_lookup?author=AM+Rogowska&author=C+Kuśnierz&author=A+Bokszczanin&publication_year=2020&title=Examining+anxiety,+life+satisfaction,+general+health,+stress+and+coping+styles+during+COVID-19+pandemic+in+Polish+sample+of+university+students&journal=Psychol+Res+Behav+Manag.&volume=13&pages=797)

[yles+during+COVID-19+pandemic+in+Polish+sample+of+university+students&journal=Psychol+Res+Behav+Manag.&volume=13&pages=797](http://scholar.google.com/scholar_lookup?author=AM+Rogowska&author=C+Kuśnierz&author=A+Bokszczanin&publication_year=2020&title=Examining+anxiety,+life+satisfaction,+general+health,+stress+and+coping+styles+during+COVID-19+pandemic+in+Polish+sample+of+university+students&journal=Psychol+Res+Behav+Manag.&volume=13&pages=797))

38. da Silva FCT, Neto MLR. Psychological effects caused by the COVID-19 pandemic in health professionals: a systematic review with meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry.* (2020) 104:110062. doi: 10.1016/j.pnpbp.2020.110062

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32771337/\)](https://pubmed.ncbi.nlm.nih.gov/32771337/) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.pnpbp.2020.110062>) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=FCT+da+Silva&author=MLR+Neto&publication_year=2020&title=Psychological+effects+caused+by+the+COVID-19+pandemic+in+health+professionals%3A+a+systematic+review+with+meta-analysis&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=104&pages=110062)

[author=FCT+da+Silva&author=MLR+Neto&publication_year=2020&title=Psychological+effects+caused+by+the+COVID-](http://scholar.google.com/scholar_lookup?author=FCT+da+Silva&author=MLR+Neto&publication_year=2020&title=Psychological+effects+caused+by+the+COVID-19+pandemic+in+health+professionals%3A+a+systematic+review+with+meta-analysis&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=104&pages=110062)

[19+pandemic+in+health+professionals%3A+a+systematic+review+with+meta-](http://scholar.google.com/scholar_lookup?author=FCT+da+Silva&author=MLR+Neto&publication_year=2020&title=Psychological+effects+caused+by+the+COVID-19+pandemic+in+health+professionals%3A+a+systematic+review+with+meta-analysis&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=104&pages=110062)

[analysis&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=104&pages=110062](http://scholar.google.com/scholar_lookup?author=FCT+da+Silva&author=MLR+Neto&publication_year=2020&title=Psychological+effects+caused+by+the+COVID-19+pandemic+in+health+professionals%3A+a+systematic+review+with+meta-analysis&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=104&pages=110062))

39. Giusti EM, Pedrolì E, D'Aniello GE, Stramba Badiale C, Pietrabissa G, Manna C, et al. The psychological impact of the COVID-19 outbreak on health professionals: a cross-sectional study. *Front Psychol.* (2020) 11:1684. doi: 10.3389/fpsyg.2020.01684

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32754102/\)](https://pubmed.ncbi.nlm.nih.gov/32754102/) | [CrossRef Full Text](#)

(<https://doi.org/10.3389/fpsyg.2020.01684>) | [Google Scholar](#)

([http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psychological+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-sectional+study&journal=Front+Psychol.&volume=11&pages=1684)

[author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale](http://scholar.google.com/scholar_lookup?author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psychological+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-sectional+study&journal=Front+Psychol.&volume=11&pages=1684)

[&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psycholo](http://scholar.google.com/scholar_lookup?author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psychological+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-sectional+study&journal=Front+Psychol.&volume=11&pages=1684)

[gical+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-](http://scholar.google.com/scholar_lookup?author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psychological+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-sectional+study&journal=Front+Psychol.&volume=11&pages=1684)

[Download\(articles/10.3389/fpubh.2022.850376/pdf\)](http://scholar.google.com/scholar_lookup?author=EM+Giusti&author=E+Pedrolì&author=GE+D'Aniello&author=C+Stramba+Badiale&author=G+Pietrabissa&author=C+Manna&publication_year=2020&title=The+psychological+impact+of+the+COVID-19+outbreak+on+health+professionals%3A+a+cross-sectional+study&journal=Front+Psychol.&volume=11&pages=1684)

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32405151/\)](https://pubmed.ncbi.nlm.nih.gov/32405151/) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.bbi.2020.05.039>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=C+Chan&author=NE+Oey&author=E+Tan+&publication_year=2020&title=Mental+health+of+scientists+in+the+time+of+COVID-19&journal=Brain+Behav+Immunity&volume=88&pages=956)

41. Kumar S, Kodidela S, Kumar A, Gerth K, Zhi K. Intervention and improved well-being of basic science researchers during the COVID 19 era: a case study. *Front Psychol.* (2020) 11:574712. doi: 10.3389/fpsyg.2020.574712

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33240163/\)](https://pubmed.ncbi.nlm.nih.gov/33240163/) | [CrossRef Full Text](#)

(<https://doi.org/10.3389/fpsyg.2020.574712>)

42. Zhang X, Li X, Liao Z, Zhao M, Zhuang Q. Evaluation of psychological stress in scientific researchers during the 2019–2020 COVID-19 outbreak in China. *PeerJ.* (2020) 8:e9497. doi: 10.7717/peerj.9497

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32704451/\)](https://pubmed.ncbi.nlm.nih.gov/32704451/) | [CrossRef Full Text](#)

(<https://doi.org/10.7717/peerj.9497>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=X+Zhang&author=X+Li&author=Z+Liao&author=M+Zhao&author=Q+Zhuang+&publication_year=2020&title=Evaluation+of+psychological+stress+in+scientific+researchers+during+the+2019–2020+COVID-19+outbreak+in+China&journal=PeerJ.&volume=8&pages=e9497)

43. Camerlink I, Nielsen BL, Windschnurer I, Vigors B. Impacts of the COVID-19 pandemic on animal behaviour and welfare researchers. *Appl Anim Behav Sci.* (2021) 236:105255. doi: 10.1016/j.applanim.2021.105255

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33583984/\)](https://pubmed.ncbi.nlm.nih.gov/33583984/) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.applanim.2021.105255>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=I+Camerlink&author=BL+Nielsen&author=I+Windschnurer&author=B+Vigors+&publication_year=2021&title=Impacts+of+the+COVID-19+pandemic+on+animal+behaviour+and+welfare+researchers&journal=Appl+Anim+Behav+Sci.&volume=236&pages=105255)

44. Abbott A. Huge survey reveals pressure of scientists' lives. *Nature.* (2020) 577:460–1. doi: 10.1038/d41586-020-00101-9

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/31965094/\)](https://pubmed.ncbi.nlm.nih.gov/31965094/) | [CrossRef Full Text](#)

(<https://doi.org/10.1038/d41586-020-00101-9>)

45. Baloran ET. Knowledge, attitudes, anxiety, and coping strategies of students during COVID-19 pandemic. *J Loss Trauma.* (2020) 25:635–42. doi: 10.1080/15325024.2020.1769300

[CrossRef Full Text \(https://doi.org/10.1080/15325024.2020.1769300\)](https://doi.org/10.1080/15325024.2020.1769300) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=ET+Baloran+&publication_year=2020&title=Knowledge,+attitudes,+anxiety,+and+coping+strategies+of+students+during+COVID-19+pandemic&journal=J+Loss+Trauma.&volume=25&pages=635-42)

46. Huang L, Li W, Yu F, Li H, Yu J. [Download \(/articles/10.3389/fpubh.2022.850376/pdf\)](#)

author=L+Huang&author=W+Lei&author=F+Xu&author=H+Liu&author=L+Yu+&publication_year=2020&title=Emotional+responses+and+coping+strategies+in+nurses+and+nursing+students+during+Covid-19+outbreak%3A+a+comparative+study&journal=PLoS+ONE.&volume=15&pages=e0237303)

47. Bakhurji E, Scott T, Mangione T, Sohn W. Dentists' perspective about dental amalgam: current use and future direction. *J Public Health Dent.* (2017) 77:207–15. doi: 10.1111/jphd.12198

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/28070905/\)](https://pubmed.ncbi.nlm.nih.gov/28070905/) | [CrossRef Full Text \(https://doi.org/10.1111/jphd.12198\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=E+Bakhurji&author=T+Scott&author=T+Mangione&author=W+Sohn&publication_year=2017&title=Dentists'+perspective+about+dental+amalgam%3A+current+use+and+future+direction&journal=J+Public+Health+Dent.&volume=77&pages=207-15\)](http://scholar.google.com/scholar_lookup?author=E+Bakhurji&author=T+Scott&author=T+Mangione&author=W+Sohn&publication_year=2017&title=Dentists'+perspective+about+dental+amalgam%3A+current+use+and+future+direction&journal=J+Public+Health+Dent.&volume=77&pages=207-15)

48. Zolotov Y, Reznik A, Bender S, Isralowitz R. COVID-19 fear, mental health, and substance use among Israeli university students. *Int J Mental Health Addict.* (2020) 20:230–36. doi: 10.1007/s11469-020-00351-8

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32837432/\)](https://pubmed.ncbi.nlm.nih.gov/32837432/) | [CrossRef Full Text \(https://doi.org/10.1007/s11469-020-00351-8\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=Y+Zolotov&author=A+Reznik&author=S+Bender&author=R+Isralowitz&publication_year=2020&title=COVID-19+fear,+mental+health,+and+substance+use+among+Israeli+university+students&journal=Int+J+Mental+Health+Addict.&volume=20&pages=230-36\)](http://scholar.google.com/scholar_lookup?author=Y+Zolotov&author=A+Reznik&author=S+Bender&author=R+Isralowitz&publication_year=2020&title=COVID-19+fear,+mental+health,+and+substance+use+among+Israeli+university+students&journal=Int+J+Mental+Health+Addict.&volume=20&pages=230-36)

49. Pais-Ribeiro J, Honrado A, Leal I. Contribuição para o estudo da adaptação portuguesa das escalas de ansiedade, depressão e stress (EADS) de 21 itens de Lovibond e Lovibond [Contribution to the study of Portuguese adaptation of the 21 items depression, anxiety and stress scales (DASS) of Lovibond and Lovibond]. *Psicol Saúde Doenças.* (2004) 5:229–39.

50. Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. *Int J Mental Health Addict.* (2020) 18:1–9. doi: 10.1007/s11469-020-00270-8

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32226353/\)](https://pubmed.ncbi.nlm.nih.gov/32226353/) | [CrossRef Full Text \(https://doi.org/10.1007/s11469-020-00270-8\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=DK+Ahorsu&author=C+Y+Lin&author=V+Imani&author=M+Saffari&author=MD+Griffiths&author=AH+Pakpour+&publication_year=2020&title=The+fear+of+COVID-19+scale%3A+development+and+initial+validation&journal=Int+J+Mental+Health+Addict.&volume=18&pages=1-9\)](http://scholar.google.com/scholar_lookup?author=DK+Ahorsu&author=C+Y+Lin&author=V+Imani&author=M+Saffari&author=MD+Griffiths&author=AH+Pakpour+&publication_year=2020&title=The+fear+of+COVID-19+scale%3A+development+and+initial+validation&journal=Int+J+Mental+Health+Addict.&volume=18&pages=1-9)

51. Magano J, Vidal DG, Dinis MAP, Leite Â. Validation and psychometric properties of the Portuguese version of the Coronavirus Anxiety Scale (CAS) and fear of COVID-19 Scale (FCV-19S) and associations with travel, tourism and hospitality. *Int J Environ Res Public Health.* (2021) 18:427. doi: 10.3390/ijerph18020427

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33430397/\)](https://pubmed.ncbi.nlm.nih.gov/33430397/) | [CrossRef Full Text \(https://doi.org/10.3390/ijerph18020427\)](#) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=J+Magano&author=DG+Vidal&author=MAP+Dinis&author=A+Leite&publication_year=2021&title=Validation+and+psychometric+properties+of+the+Portuguese+version+of+the+Coronavirus+Anxiety+Scale+\(CAS\)+and+fear+of+COVID-19+Scale+\(FCV-19S\)+and+associations+with+travel,+tourism+and+hospitality.&journal=Int+J+Environ+Res+Public+Health.&volume=18&pages=427\)](http://scholar.google.com/scholar_lookup?author=J+Magano&author=DG+Vidal&author=MAP+Dinis&author=A+Leite&publication_year=2021&title=Validation+and+psychometric+properties+of+the+Portuguese+version+of+the+Coronavirus+Anxiety+Scale+(CAS)+and+fear+of+COVID-19+Scale+(FCV-19S)+and+associations+with+travel,+tourism+and+hospitality.&journal=Int+J+Environ+Res+Public+Health.&volume=18&pages=427)

52. Endler NS, Parker JDA. *Coping Inventory for Stressful Situations*. Toronto, ON: Multihealth Systems (1990).

[Google Scholar](http://scholar.google.com/scholar_lookup?author=NS+Endler&author=JDA+Parker&publication_year=1990&title=Coping+Inventory+for+Stressful+Situations) (http://scholar.google.com/scholar_lookup?author=NS+Endler&author=JDA+Parker&publication_year=1990&title=Coping+Inventory+for+Stressful+Situations)

53. Cohan SL, Jang KL, Stein MB. Confirmatory factor analysis of a short form of the coping inventory for stressful situations. *J Clin Psychol.* (2006) 62:273–83. doi: 10.1002/jclp.20211

[PubMed Abstract](https://pubmed.ncbi.nlm.nih.gov/16299755) (<https://pubmed.ncbi.nlm.nih.gov/16299755>) | [CrossRef Full Text](https://doi.org/10.1002/jclp.20211) (<https://doi.org/10.1002/jclp.20211>) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=SL+Cohan&author=KL+Jang&author=MB+Stein&publication_year=2006&title=Confirmatory+factor+analysis+of+a+short+form+of+the+coping+inventory+for+stressful+situations&journal=J+Clin+Psychol.&volume=62&pages=273-83)

(http://scholar.google.com/scholar_lookup?author=SL+Cohan&author=KL+Jang&author=MB+Stein&publication_year=2006&title=Confirmatory+factor+analysis+of+a+short+form+of+the+coping+inventory+for+stressful+situations&journal=J+Clin+Psychol.&volume=62&pages=273-83)

54. Pereira IB, Queirós C. Coping em trabalhadores e estudantes: análise fatorial exploratória do Coping Inventory for Stressful Situations= Coping among workers and students: exploratory factorial analysis of the Coping Inventory for Stressful Situations. *International Journal on Working Conditions.* (2016) 11:68–88.

[Google Scholar](http://scholar.google.com/scholar_lookup?author=IB+Pereira&author=C+Queirós&publication_year=2016&title=Coping+em+trabalhadores+e+estudantes%3A+análise+fatorial+exploratória+do+Coping+Inventory+for+Stressful+Situations=Coping+among+workers+and+students%3A+exploratory+factorial+analysis+of+the+Coping+Inventory+for+Stressful+Situations&journal=International+Journal+on+Working+Conditions&volume=11&pages=68-88) (http://scholar.google.com/scholar_lookup?author=IB+Pereira&author=C+Queirós&publication_year=2016&title=Coping+em+trabalhadores+e+estudantes%3A+análise+fatorial+exploratória+do+Coping+Inventory+for+Stressful+Situations=Coping+among+workers+and+students%3A+exploratory+factorial+analysis+of+the+Coping+Inventory+for+Stressful+Situations&journal=International+Journal+on+Working+Conditions&volume=11&pages=68-88)

55. Lin CY, Hou WL, Mamun MA, Aparecido da. Silva J, Broche-Pérez Y, Ullah I, et al. Fear of COVID-19 Scale (FCV-19S) across countries: measurement invariance issues. *Nurs Open.* (2021) 8:1892–908. doi: 10.1002/nop2.855

[PubMed Abstract](https://pubmed.ncbi.nlm.nih.gov/33745219) (<https://pubmed.ncbi.nlm.nih.gov/33745219>) | [CrossRef Full Text](https://doi.org/10.1002/nop2.855) (<https://doi.org/10.1002/nop2.855>) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=CY+Lin&author=WL+Hou&author=MA+Mamun&author=J+Aparecido+da.+Silva&author=Y+Broche-Pérez&author=I+Ullah&publication_year=2021&title=Fear+of+COVID-19+Scale+(FCV-19S)+across+countries%3A+measurement+invariance+issues&journal=Nurs+Open.&volume=8&pages=1892-908)

([http://scholar.google.com/scholar_lookup?author=CY+Lin&author=WL+Hou&author=MA+Mamun&author=J+Aparecido+da.+Silva&author=Y+Broche-Pérez&author=I+Ullah&publication_year=2021&title=Fear+of+COVID-19+Scale+\(FCV-19S\)+across+countries%3A+measurement+invariance+issues&journal=Nurs+Open.&volume=8&pages=1892-908](http://scholar.google.com/scholar_lookup?author=CY+Lin&author=WL+Hou&author=MA+Mamun&author=J+Aparecido+da.+Silva&author=Y+Broche-Pérez&author=I+Ullah&publication_year=2021&title=Fear+of+COVID-19+Scale+(FCV-19S)+across+countries%3A+measurement+invariance+issues&journal=Nurs+Open.&volume=8&pages=1892-908))

56. Luo M, Guo L, Yu M, Jiang W, Wang H. The psychological and mental impact of coronavirus disease 2019 (COVID-19) on medical staff and general public—a systematic review and meta-analysis. *Psychiatry Res.* (2020) 291:113190. doi: 10.1016/j.psychres.2020.113190

[PubMed Abstract](https://pubmed.ncbi.nlm.nih.gov/32563745) (<https://pubmed.ncbi.nlm.nih.gov/32563745>) | [CrossRef Full Text](https://doi.org/10.1016/j.psychres.2020.113190) (<https://doi.org/10.1016/j.psychres.2020.113190>) | [Google Scholar](http://scholar.google.com/scholar_lookup?author=M+Luo&author=L+Guo&author=M+Yu&author=W+Jiang&author=H+Wang&publication_year=2020&title=The+psychological+and+mental+impact+of+coronavirus+disease+2019+(COVID-19)+on+medical+staff+and+general+public)

([http://scholar.google.com/scholar_lookup?author=M+Luo&author=L+Guo&author=M+Yu&author=W+Jiang&author=H+Wang&publication_year=2020&title=The+psychological+and+mental+impact+of+coronavirus+disease+2019+\(COVID-19\)+on+medical+staff+and+general+public](http://scholar.google.com/scholar_lookup?author=M+Luo&author=L+Guo&author=M+Yu&author=W+Jiang&author=H+Wang&publication_year=2020&title=The+psychological+and+mental+impact+of+coronavirus+disease+2019+(COVID-19)+on+medical+staff+and+general+public))

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(<https://doi.org/10.3390/ijerph18041910>) | [Google Scholar](#)

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Lima+&publication_year=2021&title=Protective+elements+of+mental+health+status+during+the+COVID-

19+outbreak+in+the+Portuguese+population&journal=Int+J+Environ+Res+Public+Health.&volume=18&pages=1910)

58. Penfold R, Magee L. Gender balance in an unprecedented time. *Fut Healthc J.* (2020) 7:212. doi: 10.7861/fhj.2020-0029

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33094230\)](https://pubmed.ncbi.nlm.nih.gov/33094230) | [CrossRef Full Text](#)

(<https://doi.org/10.7861/fhj.2020-0029>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=R+Penfold&author=L+Magee+&publication_year=2020&title=Gender+balance+in+an+unprecedented+time&journal=Fut+Healthc+J.&volume=7&pages=212)

59. Elbay RY, Kurtulmuş A, Arpacioğlu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. *Psychiatry Res.* (2020) 290:113130. doi: 10.1016/j.psychres.2020.113130

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32497969\)](https://pubmed.ncbi.nlm.nih.gov/32497969) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.psychres.2020.113130>) | [Google Scholar](#)

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19+pandemics&journal=Psychiatry+Res.&volume=290&pages=113130)

60. Varma P, Junge M, Meaklim H, Jackson ML. Younger people are more vulnerable to stress, anxiety and depression during COVID-19 pandemic: a global cross-sectional survey. *Prog Neuropsychopharmacol Biol Psychiatry.* (2021) 109:110236. doi: 10.1016/j.pnpbp.2020.110236

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33373680\)](https://pubmed.ncbi.nlm.nih.gov/33373680) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.pnpbp.2020.110236>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup?

author=P+Varma&author=M+Junge&author=H+Meaklim&author=ML+Jackson+&publication_year=2021&title=Younger+people+are+more+vulnerable+to+stress,+anxiety+and+depression+during+COVID-19+pandemic%3A+a+global+cross-sectional+survey&journal=Prog+Neuropsychopharmacol+Biol+Psychiatry.&volume=109&pages=110236)

61. Ahmed MZ, Ahmed O, Aibao Z, Hanbin S, Siyu L, Ahmad A. Epidemic of COVID-19 in China and associated psychological problems. *Asian J Psychiatr.* (2020) 51:102092. doi: 10.1016/j.ajp.2020.102092

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32315963\)](https://pubmed.ncbi.nlm.nih.gov/32315963) | [CrossRef Full Text](#)

(<https://doi.org/10.1016/j.ajp.2020.102092>) | [Google Scholar](#)

(http://scholar.google.com/scholar_lookup? [Download/articles/10.3389/fpubh.2022.850376/pdf](https://doi.org/10.3389/fpubh.2022.850376/pdf))

62. Rahman MA, Hoque N, Alif SM, Salehin M, Islam SMS, Banik B, et al. Factors associated with psychological distress, fear and coping strategies during the COVID-19 pandemic in Australia. *Global Health*. (2020) 16:95. doi: 10.1186/s12992-020-00624-w
[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33032629/\)](https://pubmed.ncbi.nlm.nih.gov/33032629/) | [CrossRef Full Text \(https://doi.org/10.1186/s12992-020-00624-w\)](https://doi.org/10.1186/s12992-020-00624-w) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=MA+Rahman&author=N+Hoque&author=SM+Alif&author=M+Salehin&author=SM+S+Islam&author=B+Banik+&publication_year=2020&title=Factors+associated+with+psychological+distress,+fear+and+coping+strategies+during+the+COVID-19+pandemic+in+Australia&journal=Global+Health.&volume=16&pages=95\)](http://scholar.google.com/scholar_lookup?author=MA+Rahman&author=N+Hoque&author=SM+Alif&author=M+Salehin&author=SM+S+Islam&author=B+Banik+&publication_year=2020&title=Factors+associated+with+psychological+distress,+fear+and+coping+strategies+during+the+COVID-19+pandemic+in+Australia&journal=Global+Health.&volume=16&pages=95)
63. Ta VP, Gesselman AN, Perry BL, Fisher HE, Garcia JR. Stress of singlehood: marital status, domain-specific stress, and anxiety in a national US sample. *J Soc Clin Psychol*. (2017) 36:461–85. doi: 10.1521/jscp.2017.36.6.461
[CrossRef Full Text \(https://doi.org/10.1521/jscp.2017.36.6.461\)](https://doi.org/10.1521/jscp.2017.36.6.461) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=VP+Ta&author=AN+Gesselman&author=BL+Perry&author=HE+Fisher&author=JR+Garcia+&publication_year=2017&title=Stress+of+singlehood%3A+marital+status,+domain-specific+stress,+and+anxiety+in+a+national+US+sample&journal=J+Soc+Clin+Psychol.&volume=36&pages=461-85\)](http://scholar.google.com/scholar_lookup?author=VP+Ta&author=AN+Gesselman&author=BL+Perry&author=HE+Fisher&author=JR+Garcia+&publication_year=2017&title=Stress+of+singlehood%3A+marital+status,+domain-specific+stress,+and+anxiety+in+a+national+US+sample&journal=J+Soc+Clin+Psychol.&volume=36&pages=461-85)
64. Li Y, Scherer N, Felix L, Kuper H. Prevalence of depression, anxiety and post-traumatic stress disorder in health care workers during the COVID-19 pandemic: a systematic review and meta-analysis. *PLoS ONE*. (2021) 16:e0246454. doi: 10.1371/journal.pone.0246454
[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/33690641/\)](https://pubmed.ncbi.nlm.nih.gov/33690641/) | [CrossRef Full Text \(https://doi.org/10.1371/journal.pone.0246454\)](https://doi.org/10.1371/journal.pone.0246454) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=Y+Li&author=N+Scherer&author=L+Felix&author=H+Kuper+&publication_year=2021&title=Prevalence+of+depression,+anxiety+and+post-traumatic+stress+disorder+in+health+care+workers+during+the+COVID-19+pandemic%3A+a+systematic+review+and+meta-analysis&journal=PLoS+ONE.&volume=16&pages=e0246454\)](http://scholar.google.com/scholar_lookup?author=Y+Li&author=N+Scherer&author=L+Felix&author=H+Kuper+&publication_year=2021&title=Prevalence+of+depression,+anxiety+and+post-traumatic+stress+disorder+in+health+care+workers+during+the+COVID-19+pandemic%3A+a+systematic+review+and+meta-analysis&journal=PLoS+ONE.&volume=16&pages=e0246454)
65. Rehman U, Shahnawaz MG, Khan NH, Kharshiing KD, Khursheed M, Gupta K, et al. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Ment Health J*. (2021) 57:42–8. doi: 10.1007/s10597-020-00664-x
[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/32577997/\)](https://pubmed.ncbi.nlm.nih.gov/32577997/) | [CrossRef Full Text \(https://doi.org/10.1007/s10597-020-00664-x\)](https://doi.org/10.1007/s10597-020-00664-x) | [Google Scholar \(http://scholar.google.com/scholar_lookup?author=U+Rehman&author=MG+Shahnawaz&author=NH+Khan&author=KD+Kharshiing&author=M+Khursheed&author=K+Gupta+&publication_year=2021&title=Depression,+anxiety+and+stress+among+Indians+in+times+of+Covid-19+lockdown&journal=Community+Ment+Health+J.&volume=57&pages=42-8\)](http://scholar.google.com/scholar_lookup?author=U+Rehman&author=MG+Shahnawaz&author=NH+Khan&author=KD+Kharshiing&author=M+Khursheed&author=K+Gupta+&publication_year=2021&title=Depression,+anxiety+and+stress+among+Indians+in+times+of+Covid-19+lockdown&journal=Community+Ment+Health+J.&volume=57&pages=42-8)
66. Mariani R, Renzi A, Di Trani M, Trabucchi G, Danskin K, Tambelli R. The impact of coping strategies and perceived family support on depressive and anxious symptomatology during the coronavirus pandemic (COVID-19). *Front Psychol*. (2022) 13:850376. doi: 10.3389/fpsyg.2022.850376
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67. Rahnema M, Shahdadi H, Bagheri S, Moghadam MP, Absalan A. The relationship between anxiety and coping strategies in family caregivers of patients with trauma. *J Clin Diagn Res.* (2017) 11:IC06–9. doi: 10.7860/JCDR/2017/25951.9673

[PubMed Abstract \(https://pubmed.ncbi.nlm.nih.gov/28571166/\)](https://pubmed.ncbi.nlm.nih.gov/28571166/) | [CrossRef Full Text \(https://doi.org/10.7860/JCDR/2017/25951.9673\)](https://doi.org/10.7860/JCDR/2017/25951.9673) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=M+Rahnema&author=H+Shahdadi&author=S+Bagheri&author=MP+Moghadam&author=A+Absalan&publication_year=2017&title=The+relationship+between+anxiety+and+coping+strategies+in+family+caregivers+of+patients+with+trauma&journal=J+Clin+Diagn+Res.&volume=11&pages=IC06-9)

[author=M+Rahnema&author=H+Shahdadi&author=S+Bagheri&author=MP+Moghadam&author=A+Absalan&publication_year=2017&title=The+relationship+between+anxiety+and+coping+strategies+in+family+caregivers+of+patients+with+trauma&journal=J+Clin+Diagn+Res.&volume=11&pages=IC06-9\)](http://scholar.google.com/scholar_lookup?author=M+Rahnema&author=H+Shahdadi&author=S+Bagheri&author=MP+Moghadam&author=A+Absalan&publication_year=2017&title=The+relationship+between+anxiety+and+coping+strategies+in+family+caregivers+of+patients+with+trauma&journal=J+Clin+Diagn+Res.&volume=11&pages=IC06-9)

68. Olabisi OI, Ola O, Bolaji A, Azeez FO, Azeez O, Olabisi TE. Depression, anxiety, stress and coping strategies among family members of patients admitted in intensive care unit in Nigeria. *Int J Africa Nurs Sci.* (2020) 13:100223. doi: 10.1016/j.ijans.2020.100223

[CrossRef Full Text \(https://doi.org/10.1016/j.ijans.2020.100223\)](https://doi.org/10.1016/j.ijans.2020.100223) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=OI+Olabisi&author=O+Ola&author=A+Bolaji&author=FO+Azeez&author=O+Azeez&author=TE+Olabisi&publication_year=2020&title=Depression,+anxiety,+stress+and+coping+strategies+among+family+members+of+patients+admitted+in+intensive+care+unit+in+Nigeria&journal=Int+J+Africa+Nurs+Sci.&volume=13&pages=100223)

[author=OI+Olabisi&author=O+Ola&author=A+Bolaji&author=FO+Azeez&author=O+Azeez&author=TE+Olabisi&publication_year=2020&title=Depression,+anxiety,+stress+and+coping+strategies+among+family+members+of+patients+admitted+in+intensive+care+unit+in+Nigeria&journal=Int+J+Africa+Nurs+Sci.&volume=13&pages=100223\)](http://scholar.google.com/scholar_lookup?author=OI+Olabisi&author=O+Ola&author=A+Bolaji&author=FO+Azeez&author=O+Azeez&author=TE+Olabisi&publication_year=2020&title=Depression,+anxiety,+stress+and+coping+strategies+among+family+members+of+patients+admitted+in+intensive+care+unit+in+Nigeria&journal=Int+J+Africa+Nurs+Sci.&volume=13&pages=100223)

69. Dagli R. Fear and anxiety-coping strategies during COVID-19 pandemic in lockdown. *J Int Oral Health.* (2020) 12:187–8. doi: 10.4103/JIOH.JIOH_133_2

[CrossRef Full Text \(https://doi.org/10.4103/JIOH.JIOH_133_2\)](https://doi.org/10.4103/JIOH.JIOH_133_2) | [Google Scholar \(http://scholar.google.com/scholar_lookup?](http://scholar.google.com/scholar_lookup?author=R+Dagli&publication_year=2020&title=Fear+and+anxiety-coping+strategies+during+COVID-19+pandemic+in+lockdown&journal=J+Int+Oral+Health.&volume=12&pages=187-8)

[author=R+Dagli&publication_year=2020&title=Fear+and+anxiety-coping+strategies+during+COVID-19+pandemic+in+lockdown&journal=J+Int+Oral+Health.&volume=12&pages=187-8\)](http://scholar.google.com/scholar_lookup?author=R+Dagli&publication_year=2020&title=Fear+and+anxiety-coping+strategies+during+COVID-19+pandemic+in+lockdown&journal=J+Int+Oral+Health.&volume=12&pages=187-8)

Keywords: COVID-19, researchers, anxiety, depression, stress, fear, coping strategies

Citation: Batista P, Afonso A, Lopes M, Fonseca C, Oliveira-Silva P, Pereira A and Pinho L (2022) Anxiety and Coping Stress Strategies in Researchers During COVID-19 Pandemic. *Front. Public Health* 10:850376. doi: 10.3389/fpubh.2022.850376

Received: 07 January 2022; **Accepted:** 30 March 2022;

Published: 19 May 2022.

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