



## Stress in palliative care nursing staff while coping with COVID-19

Estresse da equipe de enfermagem em cuidados paliativos no enfrentamento da COVID-19

Estrés del equipo de enfermería de cuidados paliativos en el enfrentamiento a la COVID-19

Daianny Arrais de Oliveira da Cunha<sup>1,2</sup>  <https://orcid.org/0000-0003-2109-319X>Patrícia dos Santos Claro Fuly<sup>2</sup>  <https://orcid.org/0000-0002-0644-6447>Alex Sandro de Azeredo Siqueira<sup>1</sup>  <https://orcid.org/0000-0002-6678-4499>Fernanda Barcellos Santiago<sup>1</sup>  <https://orcid.org/0000-0001-7067-7234>Endi Evelin Ferraz Kirby<sup>1</sup>  <https://orcid.org/0000-0002-6250-3186>Vanessa dos Santos Beserra<sup>1</sup>  <https://orcid.org/0000-0001-9841-0021>Luciene Miguel Lima Neves<sup>1</sup>  <https://orcid.org/0000-0001-7881-9233>

## How to cite:

Cunha DA, Fuly PS, Siqueira AS, Santiago FB, Kirby EE, Beserra VS, et al. Stress in palliative care nursing staff while coping with COVID-19. Acta Paul Enferm. 2021;34:eAPE001915.

## DOI

<http://dx.doi.org/10.37689/acta-ape/2021A0001915>



## Keywords

Occupational stress; Nursing team; Palliative care; COVID-19; Pandemics

## Descritores

Estresse ocupacional; Equipe de enfermagem; Cuidados paliativos; COVID-19; Pandemias

## Descriptores

Estrés ocupacional; Equipo de enfermería; Cuidados paliativos; COVID-19; Pandemias

## Submitted

July 22, 2020

## Accepted

July 26, 2021

## Corresponding author

Daianny Arrais de Oliveira da Cunha  
E-mail: daoliveira@inca.gov.br

## Abstract

**Objective:** To identify the prevalence of occupational stress among nursing professionals working in palliative care during the SARS-CoV-2 pandemic, and associated sociodemographic and occupational factors.

**Methods:** This was a cross-sectional study with a quantitative approach, conducted in an exclusive oncologic palliative care unit of a public oncology hospital of national reference. Data collection was performed between April and May of 2020, using two instruments. The Poisson regression model with robust variance was used for data analysis.

**Results:** The sample was composed of 71 professionals, working with patients suspected of or with a confirmed diagnosis of COVID-19. The medium/high level of stress outcome was prevalent in 42.2% of professionals, with higher prevalence among nurses (65.0%), who worked during the day shift (55.2%) and who had worked for more than eight years in palliative care (45.1%). Only the variables "position" and "living alone" showed a significant association with medium/high stress.

**Conclusion:** According the results, institutions must develop psychological and occupational interventions that can reduce the mental impact generated by nursing work during COVID-19. Increased stress was found among nurses, as they are involved in care and bureaucratic issues, which adds to their responsibility to the team, and among professionals who lived alone, due to impact generated by isolation and lack of close family support.

## Resumo

**Objetivo:** Identificar a prevalência do estresse ocupacional dos profissionais de enfermagem que atuam em cuidados paliativos, durante a pandemia pelo SARS-CoV-2 e fatores sociodemográficos e ocupacionais associados.

**Métodos:** Trata-se de um estudo transversal, de abordagem quantitativa, realizado em uma unidade de atendimento a pacientes em cuidados paliativos oncológicos exclusivos, de um hospital oncológico público de referência nacional. A coleta de dados foi realizada entre os meses de abril e maio de 2020, utilizando dois instrumentos. Na análise dos dados foi utilizado o modelo de regressão de Poisson, com variância robusta.

**Resultados:** A amostra foi composta por 71 profissionais, que atuaram no atendimento à pacientes suspeitos ou com diagnóstico confirmado de COVID-19. O desfecho médio/alto nível de estresse foi prevalente em 42,2% dos profissionais, com maior predominância entre enfermeiros (65,0%), que exercem suas atividades no período diarista/diurno (55,2%) e que atuam há mais de oito anos em cuidados paliativos (45,1%). Apenas as variáveis "cargo" e "morar sozinho" apresentaram associação significativa ao estresse médio/alto.

<sup>1</sup>National Institute of Cancer - Instituto Nacional de Câncer, Rio de Janeiro, RJ, Brazil.

<sup>2</sup>Aurora de Afonso Costa School of Nursing, Universidade Federal Fluminense, Niterói, RJ, Brazil.

Conflicts of interest: Nothing to declare

**Conclusão:** Diante dos resultados é importante que as instituições busquem medidas por meio de intervenções psicológicas e ocupacionais que possam reduzir os impactos mentais gerados pela atuação durante a COVID-19. Sugere-se maior estresse entre os enfermeiros, pois se envolvem em questões assistenciais e burocráticas, o que aumenta sua responsabilidade perante a equipe, e aos profissionais que residem sozinhos devido aos impactos gerados pelo isolamento e falta de apoio familiar próximo.

## Resumen

**Objetivo:** Identificar la prevalencia del estrés laboral de los profesionales de enfermería que actúan en cuidados paliativos, durante la pandemia del SARS-CoV-2 y factores sociodemográficos y laborales asociados.

**Métodos:** Se trata de un estudio transversal, de enfoque cuantitativo, realizado en una unidad de atención a pacientes en cuidados paliativos oncológicos exclusivos, de un hospital oncológico público de referencia nacional. La recopilación de datos fue realizada entre los meses de abril y mayo de 2020, mediante la utilización de dos instrumentos. En el análisis de los datos se utilizó el modelo de regresión de Poisson, con varianza robusta.

**Resultados:** La muestra estuvo compuesta por 71 profesionales que actuaban en la atención a pacientes con sospecha o diagnóstico confirmado de COVID-19. El resultado de nivel de estrés medio/alto fue prevalente en el 42,2 % de los profesionales, con una mayor predominancia entre enfermeros (65,0 %), que ejercen sus actividades en el período diurno (55,2 %) y que actúan hace más de ocho años en cuidados paliativos (45,1 %). Solamente las variables "carga" y "vivir solo" presentaron una asociación significativa con el estrés medio/alto.

**Conclusión:** Ante los resultados obtenidos, es importante que las instituciones busquen medidas a través de intervenciones psicológicas y laborales para reducir los impactos mentales generados por el trabajo durante la COVID-19. Se sugiere que existe mayor estrés entre los enfermeros, ya que están involucrados en cuestiones asistenciales y burocráticas, lo que aumenta su responsabilidad ante el equipo, y los profesionales que viven solos debido a los impactos generados por el aislamiento y la falta de apoyo familiar cercano.

## Introduction

A new infectious disease caused by a coronavirus (SARS-CoV-2), later named COVID-19, with characteristics of exponential contagion emerged in December of 2019. It was declared a pandemic by the World Health Organization (WHO) the following month.<sup>(1)</sup>

A total of 1,500,302 confirmed cases worldwide and 535,759 deaths were reported by the WHO in July 7, 2020. In Brazil, 1,603,055 cases were confirmed, and a total of 64,867 deaths from COVID-19 were found.<sup>(2)</sup>

Studies related to previous epidemics,<sup>(3,4)</sup> such as the Severe Acute Respiratory Syndrome (SARS) in 2003, and the H1N1 influenza in 2009, reported a significant psychological impact on the community related to fear and panic associated with the disease. Health professionals stated extreme vulnerability, somatic and cognitive symptoms of anxiety, and uncertainty about the risks to which they were exposed, especially those that were life-threatening.<sup>(5)</sup>

Other factors are associated with increased stress and fatigue, physical and mental, such as the use of personal protective equipment for long periods resulting in breathing difficulties, and limited access to bathrooms and water. In addition, excessive information and media reports were considered potential stressors.<sup>(6)</sup>

A recent study conducted in a Chinese hospital, which is a reference for care provision to those infected by COVID-19, revealed a high incidence of anxiety and stress disorders among the healthcare team, with a higher incidence among nurses than among physicians (26.8% vs. 14.2%).<sup>(7)</sup>

Health professionals who work in palliative care, and experience painful end-of-life processes of physical and existential suffering, may experience exacerbated symptoms of mental distress. This is especially true when the very philosophy that underlies their professional performance is compromised, such as the social isolation required during this period, which generates a rupture in the relationship between the interdisciplinary team, patients, and families.<sup>(8)</sup>

The reality indicates an important limit in the perspective of personnel management in palliative care, because of the restricted number of professionals confronting greater demands generated by patients during the pandemic. The necessary changes in palliative care performance, the increase in demand for these services, and the overload of professionals are factors that may infer increased stress in these professionals.<sup>(9)</sup>

The increasing demand imposed by the pandemic on the palliative care setting, and the gap in knowledge about the stress of professionals facing the SARS-CoV-2 pandemic, lead to the following

questions: What is the prevalence of medium/high levels of stress among nursing professionals working in palliative care during the new coronavirus pandemic? What factors are associated with the highest risk for elevated levels of occupational stress during the pandemic?

Therefore, this study aimed to identify the prevalence of occupational stress among nursing professionals working in palliative care during the SARS-CoV-2 pandemic, and associated sociodemographic and occupational factors.

## Methods

This was a qualitative, cross-sectional study, guided by Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).<sup>(10)</sup> It was conducted in a public hospital that is a national reference in cancer prevention, control, and treatment and that has an exclusive unit for the care of patients in oncologic palliative care.

A non-probability convenience sampling process was used. All nursing team members who worked in the hospital areas and in the emergency department, caring for patients suspected of COVID-19 were eligible. Professionals who were not working due to some kind of leave were excluded.

Data collection was performed between April and May of 2020, using two instruments. The first was a questionnaire with sociodemographic and occupational data, and the second was the Work Stress Scale (WSS), composed of 23 items that form a single factor or score. The items were analyzed according to a five-point Likert-type agreement scale (1-strongly disagree to 5-strongly agree), where the overall scores range from 23 to 115 points.<sup>(11)</sup>

A cutoff point of 2.5 was adopted to analyze the mean scores. Scores below a mean of 2.5 were related to low stress levels, a mean value equal to 2.5 corresponds to medium or considerable stress level, and a mean above 2.5 indicates a high stress level.<sup>(11)</sup>

The outcome variable (dependent) investigated in the study was exposure to occupational stress (0-Low; 1-Medium/High), and the independent variables (predictors) were separated into two groups:

sociodemographic characteristics (sex, age, race/skin color, level of education, marital status, living with someone, number of children, religion, remuneration, other source of income, and other employment relationships), and occupational characteristics (position occupied, work shift, length of working in palliative care).

All analyses were performed using Stata 15.0 software (Stata Corporation, College Station, USA). Data were transferred to a database using Microsoft Excel® software, and data analysis was completed using descriptive statistics. Categorical variables were analyzed using absolute and relative frequencies, and continuous variables using mean and standard deviation. Thereafter, the prevalence of occupational stress was calculated.

The association between the predictor variables and the outcome was verified by means of prevalence ratios, and their respective 95% confidence intervals, using the Poisson regression model with robust variance. Throughout the analysis, *p* values < 0.05 were considered statistically significant.

The research project was approved by the Research Ethics Committee of the National Cancer Institute (Instituto Nacional de Câncer José Alencar Gomes da Silva-(INCA), opinion number 3.992.180, and each participant signed the Terms of Free and Informed Consent form. The study met the ethical standards of Resolution 466/12,<sup>(12)</sup> which provides for ethical aspects of research involving human beings (CAAE: 30684120.0.0000.5274).

## Results

According to the study criteria and sample composition (*n*=71), female participants (80.6%) predominated, with a mean age of 40.5 years ( $\pm 7.13$ ), ranging from 28 to 54 years, married (69.0%), and brown skin color (49.3%). Only 2.8% lived alone and 19.7% were childless.

Among the 79 professionals who met the inclusion criteria, eight (10%) refused to participate, thus the sample consisted of 71 (89.8%) professionals.

The sample was composed mostly of nursing technicians (71.8%), with monthly income between nine and 12 times the minimum wage (53.5%), who had no other employment relationship (59.2%). The mean time of experience in palliative care was 10.2 years ( $\pm 4.63$ ), with higher education (39.4%), and those who worked during the day shift predominated (40.8%).

The outcome of medium/high level of stress was prevalent in 42.2% of professionals. Higher level of stress was prevalent among female professionals (45.6%), and those who: were under 40 years of age (43.9%), self-declared non-white (46.7%), had a post-graduate degree (51.8%), were single, divorced or widowed (50.0%), lived alone (100.0%), were childless (42.9%), practiced some religion (44.8%), had a monthly income between nine and 12 minimum times the wage (47.4%), had another source of income (50.0%), and did not have additional employment relationships (42.9%).

In the bivariate analysis (adjusted prevalence ratio), a high level of stress was found for professionals who were living alone ( $p=0.004$ ) and who had completed post-graduate education ( $p=0.24$ ) (Table 1).

The highest level of stress was predominant among nurses (65.0%) who worked the day shift (55.2%) and had worked in palliative care for more than eight years (45.1%). Bivariate analysis showed a higher level of stress among the nurse professionals ( $p=0.01$ ) who worked the day shift ( $p=0.09$ ) (Table 2).

According to the WSS data, adequacy was performed considering the dimensions to which each item of the scale is related. They were then divided according to the scores that presented the outcome of interest (1=medium/high stress level), in decreasing score levels. The dimensions that scored the highest number of items related to the outcome were "autonomy and control" and "roles and work environment". Table 3 presents the items with mean values for high stress level. Considering the means obtained, the occupational scenario presented a mean of 2.51 ( $\pm 0.75$ ), characterizing a high level of occupational stress.

**Table 1.** Prevalence and prevalence ratio of stress according to sociodemographic characteristics

Variables	Prevalence	PR <sub>c</sub> (CI <sub>95%</sub> )	p-value	PR <sub>a</sub> <sup>*</sup> (CI <sub>95%</sub> )	p-value
Sex					
Male	28.6	1	-	-	-
Female	45.6	1.60 (0.66 - 3.85)	0.30	-	-
Age group (years)					
< 40	43.9	1.10 (0.62 - 1.93)	0.75	-	-
$\geq 40$	40.0	1	-	-	-
Race/skin color					
White	34.6	1	-	-	-
Non-white	46.7	1.35 (0.73 - 2.50)	0.34	-	-
Level of education					
High school	37.5	1.05 (0.47 - 2.36)	0.91	-	-
College	35.7	1	-	-	-
Postgraduate	51.8	1.45 (0.78 - 2.70)	0.24	-	-
Marital status					
Married	38.8	1	-	-	-
Not married	50.0	1.29 (0.74 - 2.23)	0.36	-	-
Living with someone					
Yes	40.6	1	-	-	-
No	100	2.46 (1.85 - 3.28)	< 0.001	2.12 (1.28 - 3.54)	0.004
Children					
Yes	42.1	1	-	-	-
No	42.9	1.02 (0.51 - 2.01)	0.96	-	-
Religion					
Yes	44.8	1.46 (0.61 - 3.48)	0.40	-	-
No	30.8	1	-	-	-
Remuneration (MW)					
6 - 9	42.1	1.47 (0.55 - 3.96)	0.44	-	-
9 - 12	47.4	1.66 (0.67 - 4.08)	0.27	-	-
> 12	28.6	1	-	-	-
Other source of income					
Yes	50.0	1.26 (0.71 - 2.24)	0.43	-	-
No	39.6	1	-	-	-
Other employment relationship					
Yes	41.4	1	-	-	-
No	42.9	1.04 (0.59 - 1.81)	0.90	-	-
Prevalence	42.2	30.6 - 54.6	-		

PR<sub>c</sub> - crude prevalence ratio; PR<sub>a</sub> - adjusted prevalence ratio; CI - confidence interval; MW - Minimum wage

**Table 2.** Prevalence and prevalence ratio of stress according to occupational characteristics

Variables	Prevalence	PR <sub>c</sub> (CI <sub>95%</sub> )	p-value	PR* <sub>a</sub> (CI <sub>95%</sub> )	p-value
Position occupied					
Nurse	65.0	1.95 (1.17 - 3.24)	0.01	1.89 (1.14 - 3.13)	0.01
Nursing technician	33.3	1	-	-	-
Work shift					
Days	55.2	1.93 (0.91 - 4.12)	0.09	-	-
Nights	28.6	1	-	-	-
Day/Night Rotation	38.1	1.33 (0.56 - 3.20)	0.519	-	-
Experience in palliative care (in years)					
< 8	35.0	1	-	-	-
> 8	45.1	1.29 (0.66 - 2.53)	0.46	-	-

RPC - crude prevalence ratio; RPa - adjusted prevalence ratio; CI - confidence interval; Final model = living with someone + position occupied

**Table 3.** Mean of the scores obtained for medium/high level of work stress according to the dimensions of the Work Stress Scale

Variables of the Work Stress Scale	Score (x/standard deviation)
Autonomy and Control Dimension	
1 - The manner in which tasks are distributed in my area has made me nervous.	3.0(±1.1)
22 - Insufficient time to perform my workload makes me nervous.	2.8(±1.3)
2 - The type of control that exists in my workplace makes me angry.	2.8(±1.0)
13 - I have felt irritated by the deficiency in the training for professional capacitation.	2.7(±1.2)
3 - Lack of autonomy in performing my work has been stressful.	2.6(±1.2)
Roles and Work Environment Dimension	
9 - I feel irritated by having to perform tasks that are beyond my ability.	3.2(±1.3)
10 - I feel upset for having to perform tasks that are beyond my ability.	3.2(±1.2)
5 - I feel irritated with the deficiency in the dissemination of information about service decisions.	3.1(±1.1)
19 - Lack of understanding about what my responsibilities are in this work has caused me irritation.	2.6(±1.2)
Relationship with the Boss Dimension	
12 - I am irritated by discrimination/ favoritism in my work environment.	3.1(±1.1)
15 - I am irritated by being under-valued by my superior	2.6(±1.3)
Growth and Appreciation Dimension	
16 - Few perspectives for career growth have made me anxious.	2.7(±1.3)

## Discussion

Nursing professionals may experience high levels of stress because they are directly responsible for patient care, management of the hospital sector, and also the administrative and bureaucratic activities of different levels of complexity.<sup>(13)</sup> Nursing is considered one of the professions most exposed to the risk of physical and mental illness in institutions, due to confronting inadequate working conditions, work overload due to inadequate staffing, an unhealthy environment, and repetitive activities.<sup>(14)</sup>

An important issue refers to the occupational stress specific to professionals who work in oncology and, more specifically, in palliative care. Caring for patients with a bad prognosis, with no possibility of cure, who present symptoms that are difficult to control due to the very evolution of the disease, and facing the active process of death of patients and validating their own awareness of mortality, are elements that make these professionals vulnerable to the development of occupational stress, followed by several types of psychological suffering.<sup>(15)</sup>

Some studies have shown the importance of professionals who work in palliative care in the midst of major disasters and epidemics/pandemics, such as the one currently experienced. However, no studies assessing the mental health of these professionals while confronting COVID-19 were found.<sup>(16)</sup>

Evaluating the scenario of the SARS period, in 2003, a study identified that 89% of health care workers who were in high-risk situations, that is, on the front line of care, reported psychological symptoms, among which was occupational stress. This study concluded that the occupational environment was characterized for high level of occupational stress, and medium/high stress was prevalent in 42.2% of the participants.<sup>(17)</sup>

A recent North American study<sup>(18)</sup> showed that more than half of the healthcare professionals (57.0%) tested positive for acute stress (with the possibility of presenting symptoms of post-traumatic stress disorder). The larger number of participants (n=657) in the study and the number of instruments used may justify the higher prevalence of stress.

A Brazilian study, prior to the pandemic, evaluated 105 professionals who worked in palliative care, and found moderate/high stress levels in 41.9% of the investigated professionals. These findings suggest that professionals who care for these patients experience higher chances of developing occupational stress.<sup>(19)</sup>

Stress was prevalent among female professionals under 40 years of age, which is similar to a Chinese study that evaluated 1257 professionals, where stress was prevalent in 71.5% of the participants, and higher in nurses than physicians (36.2% vs 33.0%).<sup>(20)</sup> In addition, women tend to have greater

body focus and awareness of physical and psychological symptoms than men.<sup>(21)</sup>

As our study focused specifically on the nursing team, a higher prevalence was found among nurses when compared to nursing technicians (65.0% vs 33.3%,  $p=0.01$ ). This difference was similar to that found in a study conducted in southeastern Brazil<sup>(22)</sup> (83.3% vs 69.0%,  $p=0.16$ ), which assessed 124 professionals, however using a collection tool that analyzed stress at different levels than that used in the present study. The level of responsibilities required from nurses considering their care and managerial tasks may justify such a finding.

Besides the position they occupied (nurses and nursing technicians), professionals who lived alone showed significant stress compared to those who lived with someone (100.0% vs 40.6%), however, only two participants were in the group that lived alone, which may characterize important bias.

Considering the scores obtained from the WSS, it was found that the dimensions with the most items scored were for the “autonomy and control” and “roles and work environment” outcomes. The psychological commitment of health professionals in the face of an epidemic can be complex. Sources of distress may include feelings of vulnerability or loss of control, concerns about their own health and that of their family members, the spread of the virus, changes in work routine, and the need for isolation.<sup>(23)</sup>

Based on the data reported, it is understood that stress is a psychological alteration that directly impacts the daily life of nursing professionals who work in palliative care. In periods of crisis such as the pandemic that broke out at the end of 2019, the mental health of these professionals may be seriously compromised, possibly causing other mental and physical symptoms.<sup>(24)</sup> Therefore, institutional strategies can contribute to the mental health balance of professionals who are on the front line of care, offering mechanisms for the maintenance of basic human needs.<sup>(25)</sup>

As this was a cross-sectional study design, data make it impossible to evaluate causality, as well as to continue monitoring the studied phenomenon. Moreover, since convenience sampling was used, it may not represent reality.

## Conclusion

The results of this study demonstrate that institutions should provide psychological interventions that can reduce the mental impacts generated by working during COVID-19. The strengthening of education, sufficient number of nursing professionals, adequate rest time, prompt updating of the most recent information, and the encouragement for professionals to share clinical experiences and feelings can help in reducing the rates of post-traumatic stress disorder, as experienced in other epidemics. There is evidence of greater stress among nurses, who are involved in not only care but also bureaucratic issues which increase their responsibility to the team. This is especially true for professionals who live alone because of the impacts generated by isolation and lack of close family support. This study was conducted during the very beginning of the outbreak of COVID-19 in Brazil, when knowledge about the pandemic was limited and information was changing very quickly. Furthermore, a new investigation combining other instruments will be conducted, aiming at a better understanding of the psychosocial impact that affects nursing professionals working in palliative care during COVID-19.

## Collaborations

Cunha DAO, Fuly PSC, Siqueira ASA, Santiago FB, Kirby EEF, Beserra VS & Neves LML contributed to the study design, data analysis and interpretation, article writing, relevant critical review of the intellectual content, and approval of the final version to be published.

## References

1. World Health Organization (WHO). WHO announces COVID-19 outbreak a pandemic. Genève: WHO; 2020 [cited 2020 July 7]. Available from: <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>
2. World Health Organization (WHO). Coronavirus disease (COVID-19) situation reports. Genève: WHO; 2020 [cited 2020 July 7]. Available from: [www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports](http://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports)

3. Chong MY, Wang WC, Hsieh WC, Lee CY, Chiu NM, Yeh WC, et al. Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. *Br J Psychiatry*. 2004;185:127-33.
4. Goulia P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. *BMC Infect Dis*. 2010;10:322.
5. Tsamakidis K, Rizos E, Manolis AJ, Chaidou S, Kypouropoulos S, Spartalis E, et al. COVID-19 pandemic and its impact on mental health of healthcare professionals. *Exp Ther Med*. 2020;19(6):3451-3.
6. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. *Lancet Psychiatry*. 2020;7(4):e15-e16. Erratum in: *Lancet Psychiatry*. 2020;7(5):e27.
7. Huang JZ, Han MF, Luo TD, Ren AK, Zhou XP. [Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19]. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi*. 2020;38(3):192-195. Chinese.
8. Shalev D, Nakagawa S, Stroeh OM, Arbuckle MR, Rendleman R, Blinderman CD, et al. The creation of a psychiatry-palliative care liaison team: using psychiatrists to extend palliative care delivery and access during the COVID-19 crisis. *J Pain Symptom Manage*. 2020;60(3):e12-e16.
9. Vergano M, Bertolini G, Giannini A, Gristina GR, Livigni S, Mistraretti G, et al. Clinical ethics recommendations for the allocation of intensive care treatments in exceptional, resource-limited circumstances: the Italian perspective during the COVID-19 epidemic [Editorial]. *Crit Care*. 2020;24(1):165.
10. Cheng A, Kessler D, Mackinnon R, Chang TP, Nadkarni VM, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Egger M, Auerbach M; International Network for Simulation-based Pediatric Innovation, Research, and Education (INSPIRE) Reporting Guidelines Investigators. Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements. *Simul Healthc*. 2016;11(4):238-48.
11. Paschoal T, Tamayo A. Validação da Escala de Estresse no Trabalho. *Estudos Psicol*. 2004;9(1):45-52.
12. Brasil. Ministério da Saúde. Conselho Nacional de Saúde. Resolução 466/12. Trata de pesquisas em seres humanos e atualiza a resolução 196. Brasília (DF): Ministério da Saúde; 2012 [citado 2012 Jun 13]. Disponível: <http://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>
13. Scholze AR, Martins JT, Robazzi ML, Haddad MC, Galdino MJ, Ribeiro RP. Occupational stress and associated factors among nurses at public hospitals. *Cogitare Enferm*. 2017;22(3):e50238.
14. Cacciari P, Hadadd MC, Vannuchi MT, Dalmas JC. Estado de saúde de trabalhadores de enfermagem em readequação e readaptação funcional. *Rev Bras Enferm*. 2013;66(6):860-5.
15. Santos NA, Gomes SV, Rodrigues CM, Santos J, Passos JP. Estratégias de enfrentamento utilizadas pelos enfermeiros em cuidados paliativos oncológicos: revisão integrativa. *Cogitare Enferm*. 2016;21(3):1-7.
16. Rodin G, Zimmermann C, Rodin D, Al-Awamer A, Sullivan R, Chamberlain C. COVID-19, palliative care and public health. *Eur J Cancer*. 2020;136:95-8.
17. Chua SE, Cheung V, Cheung C, McAlonan GM, Wong JW, Cheung EP, et al. Psychological effects of the SARS outbreak in Hong Kong on high-risk health care workers. *Can J Psychiatry*. 2004;49(6):391-3.
18. Shechter A, Diaz F, Moise N, Anstey DE, Ye S, Agarwal S, et al. Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *Gen Hosp Psychiatry*. 2020;66:1-8.
19. Santos NA, Santos J, Silva V, Passos J. Estresse ocupacional na assistência de cuidados paliativos em oncologia. *Cogitare Enferm*. 2017;22(4):1-10.
20. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 2020;3(3):e203976.
21. Jahrami H, BaHammam AS, AlGahtani H, Ebrahim A, Faris M, AlEid K, et al. The examination of sleep quality for frontline healthcare workers during the outbreak of COVID-19. *Sleep Breath*. 2021;25(1):503-11.
22. Santana LC, Ferreira LA, Santana LP. Estresse ocupacional em profissionais de enfermagem de um hospital universitário. *Rev Bras Enferm*. 2020;73(2):e20180997.
23. Wong TW, Yau JK, Chan CL, Kwong RS, Ho SM, Lau CC, et al. The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. *Eur J Emerg Med*. 2005;12(1):13-8.
24. Chew NW, Lee GK, Tan BY, Jing M, Goh Y, Ngiam NJ, et al. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav Immun*. 2020;88:559-65.
25. Gonzalez A, Cervoni C, Lochner M, Marangio J, Stanley C, Marriott S. Supporting health care workers during the COVID-19 pandemic: Mental health support initiatives and lessons learned from an academic medical center. *Psychol Trauma*. 2020;12(S1):S168-S170.