Resilience, depression and self-efficacy among Brazilian nursing professionals during the COVID-19 pandemic

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Abstract *This aim of this study was to analyze levels of resilience, depression and self-efficacy among Brazilian nursing professionals during the COVID-19 pandemic. We conducted an analytical cross-sectional study between October and December 2020. Student's t test, analysis of variance and multiple linear regression were used to investigate the impact of two main factors (Resilience and Self-efficacy) on depression. A total of 8,792 nursing professionals participated in the study; 5,124 (58.8%) had low levels of resilience. The mean overall score for Depression was 0.74, ranging from 0.59 to 0.80, while the mean overall score for Self-efficacy was 0.68, ranging from 0.56 to 0.80. The variable that had the strongest impact on depression levels was Resilience, explaining 6.6% of the outcome (p < 0.001, AdjustedR2 = 0.066). In general, respondents had low levels of resilience and self-efficacy and showed high mean depression scores. Level of resilience had an impact on depression. The findings reveal an urgent need for actions to promote the psychological health of nursing professionals working in crisis situations such as pandemics.*
Key words: *Psychological resilience, Depression, Self-efficacy, Nursing professionals, COVID-19*

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Introduction

High job stress levels can lead to job dissatisfaction, anxiety, depression and burnout among clinical nurses, affecting the sustainability of nursing teams and the physical and mental health of nurses[1-3]. Resilience is key to dealing with adversity in the workplace.

Resilience is the interaction between individual and environmental attributes (family, social, cultural) that determine an individual's ability to cope with adverse conditions[4]. Several different disciplines (psychology, psychopathology, sociology and psychiatry, among others) have contributed to the development of the concept of resilience, meaning that it requires a multisectoral approach, which has become increasingly important in contexts of social, political and economic adversities, like those experienced during the COVID-19 pandemic.

Various studies have shown that the mental and psychological health of health professionals deteriorated during the pandemic, with high rates of prevalence of anxiety, burnout, depression and psychological distress[5,6]. Studies conducted during outbreaks of other diseases, such as SARS, Ebola and MERS-CoV, have emphasized that psychological resilience, coping behaviors and social support play a protective role against the stress of caring for infected patients, especially among nursing staff[7,8].

Resilience is therefore a protective factor for the physical and mental well-being of nursing professionals. Nursing can be a stressful profession, especially when dealing with the pressures of social and ethical contexts in constant transformation, which can have a negative effect on both nursing professionals and patients[9,10].

Understanding resilience among nursing professionals is therefore extremely important. Despite the large number of studies on the topic, there is no broadly accepted definition of resilience in the nursing literature, only agreement that it is vital in enabling nurses to cope with workplace stress and pressures[9,11].

Resilience encompasses different modes of resistance to stress, while coping refers to the ability to deal with stress and promote positive adaptation. Coping therefore occurs at a given moment and resilience takes place over time[12]. Self-efficacy is the belief in one's capacity to organize and carry out a given course of action and is a central element of an individual's motivation and resistance to pressures from the surrounding environment. Hence the concepts of resilience

and self-efficacy are related to coping with economic, social and job changes involving context, culture and collective responsibility[13,14].

Nursing professionals with high levels of self-efficacy and resilience are less likely to develop mental disorders such as depression and burnout. In addition, more resilient nursing professionals have higher levels of well-being in the workplace and everyday life. The aim of this study was to analyze levels of resilience, depression and self-efficacy among nursing professionals in Brazil during the COVID-19 pandemic.

Method

Study design

We conducted a cross-sectional analytical study with nursing professionals working in all regions of Brazil. The data were collected between October and December 2020 using an online questionnaire.

Population

The following individuals were considered eligible: nursing professionals (nurses, nursing technicians and auxiliary nurses) working directly in care delivery during the six months prior to data collection in different public and private care settings across all states and regions in Brazil.

Data collection

The data were collected using an online questionnaire created on SurveyMonkey. The link was made available on social media platforms, including Facebook, Twitter, Instagram, WhatsApp, and via *email. The form containing the questionnaire was made up of two parts: an informed consent form and survey form.*

Data collection instruments

Three instruments were used for data collection: a sociodemographic questionnaire; the Brief Resilient Coping Scale; and the General Health Questionnaire (GHQ-12). The sociodemographic variables were as follows: profession (nurse/nursing technician/auxiliary nurse); sex (male/female); age group (18-30 years, 31-50 years and 51 and over); region (Northeast, North, Midwest, Southeast and South); skin color (white, black, brown, yellow); marital status (married/

stable union, single/divorced and widowed); COVID-19 diagnosis (yes/no); and worked in a campaign hospital during the pandemic (yes/no).

The Portuguese version of the Brief Resilient Coping Scale consists of four items with a 5-point Likert response scale: 5) Almost always, 4) Very often, 3) Often, 2) Occasionally, 1) Almost never. A score of less than 13 indicates low resilience and a score of more than 17 indicates strong resilience[15].

The General Health Questionnaire (GHQ-12) is used to assess health-related factors. Applied to different populations and contexts, the questionnaire originated from a 60-item instrument[16]. The 12-item version of the instrument is widely used today[17]. For the purposes of the present study, we explored the factorial structure of the GHQ-12, extracting two oblique factors: depression and self-efficacy. The items are answered using the following 4-point Likert scale: 0) Not at all; 1) No more than usual; 2) More than usual; and 3) Much more than usual. Factor 1 (depression) comprised items 2, 5, 6, 9, 10 and 11, while Factor 2 (self-efficacy) consisted of items 1, 3, 4, 7, 8 and 12. The factorial structure identified for the present study is similar to that extracted from a sample of school teachers[17].

Data analysis

The data were analyzed using descriptive statistics. The scores of the depression and self-efficacy scales were assessed using exploratory factor analysis of the GHQ-12 to calculate weighted means. The score of the resilience scale was calculated using the simple means of the scale items.

Student's t-test and analysis of variance (ANOVA) were used to compare resilience, depression and anxiety scores with sociodemographic variables, COVID-19 diagnosis and working in a campaign hospital during the pandemic. The data were analyzed using SPSS version 20.0.

A multiple linear regression analysis (forward method) was performed to determine the impact of the two main factors (resilience and self-efficacy) on depression. Resilience and self-efficacy were the independent variables and depression was the dependent variable. We also calculated R^2, adjusted R^2 and change in R^2. A 95% confidence interval was adopted for all analyses.

Ethical aspects

The project was approved by the ethics committee of the Ribeirão Preto Nursing School, University of São Paulo (code number 4.258.366). The study was conducted in accordance with the ethical norms and standards for research involving human subjects set out in resolutions 466/2012 and 510/2016. All participants signed an online informed consent form.

Results

A total of 8,792 nursing professionals participated in the study, including 5,767 nurses (65.6%). Most of the respondents (7,437 or 84.6%) were female and from the Northeast (2,643 or 30.1%), as shown in Table 1.

Over half of the respondents (5,124 or 58.8%) obtained low overall scores for resilience. The mean overall score for "depression" was 0.74, with scores ranging from 0.59 to 0.80. The mean overall score for "self-efficacy" was 0.68, with scores ranging from 0.56 to 0.80.

The results show statistically significant differences in resilience scores for the following variables: profession (p <0.001); sex (p = 0.003); age group (p<0.001); region (p < 0.001); marital status (p = 0.029); and worked in a campaign hospital (p < 0.001).

Statistically significant differences in depression scores were found for the following variables: profession (p <0.001); sex (p < 0.001); age group (p = 0.01); region (p = 0.012); and marital status (p < 0.001).

Statistically significant differences in self-efficacy scores were observed for the following variables: profession (p < 0.001); marital status (p < 0.001); and worked in a campaign hospital (p = 0.01).

The findings also show that men obtained a higher resilience score than women (M = 12.43; SD = 3.25 versus M = 12.11; SD = 3.30; t(8790) = 3.28, p < 0.001). Depression scores were also higher among men than in women (M = 0.748; SD = 0.021 versus M = 0.746; SD = 0.019; t(8813) = 3.10, p = 0.002), as shown in Table 2.

Statistically significant differences in resilience scores were found between professions (nurse, nursing technician and auxiliary nurse, p < 0.001). The difference between nurses (M = 12.06; SD = 3.27) and nursing technicians (M = 12.33; SD =3.33) was statistically significant (p = 0.002); however, the differences in means

Table 1. Characterization of Brazilian nursing professionals. Brazil, 2021 (n = 8,792).

Variables	n	%
Profession		
Nurse	5767	65.6
Nursing technician	2842	32.3
Auxiliary nurse	183	2.1
Sex		
Male	1355	15.4
Female	7437	84.6
Age group (years)		
18-30	7991	90.9
31-50	796	9.1
51 and over	5	0.1
Region		
Northeast	2643	30.1
North	1328	15.1
Midwest	1578	17.9
Southeast	2460	28.0
South	783	8.9
Skin color		
White	3943	44.8
Black	806	9.2
Brown	3917	44.6
Yellow	126	1.4
Marital status		
Married/stable union	4594	52.3
Single/divorced	4148	47.2
Widowed	50	0.6
COVID-19 diagnosis		
No	5807	66.0
Yes	2985	34.0
Worked in campaign hospital		
No	6089	69.3
Yes	2703	30.7

Source: Authors.

between auxiliary nurses and nurses and nursing technicians were not statistically significant. Statistically significant differences in depression scores were found between professions (nurse, nursing technician and auxiliary nurse, $p < 0.001$). The differences between nurses (M = 0.745; SD = 0.019) and nursing technicians (M = 0.749; SD = 0.020) and between nurses and auxiliary nurses (M = 0.748; SD = 0.021) were statistically significant ($p < 0.001$). Statistically significant differences in self-efficacy scores were found between professions (nurse, nursing technician and auxiliary nurse, $p < 0.001$). The differences between nurses (M = 0.683; SD = 0.023) and nursing technicians (M = 0.680; SD = 0.021)

and nurses and auxiliary nurses (M = 0.678; SD = 0.024) were statistically significant ($p < 0.001$).

The results show statistically significant differences in resilience scores between ages and across regions (18-30 years, 31-60 years, 61 years and over, $p < 0.001$; North, Northeast, Midwest, Southeast and South, $p < 0.001$). The differences in means between the Northeast (M = 12.27; SD = 3.33) and Southeast (M = 11.98; SD = 3,29) ($p = 0.01$), North and Southeast ($p = 0.003$) and North and Southeast ($p = 0.001$) were statistically significant. Statistically significant differences in resilience scores were also found between marital status groups (married/stable union, single/divorced, widowed, $p = 0.029$).

Nursing professionals who worked in a campaign hospital during the pandemic obtained higher resilience and self-efficacy scores than those who did not (M = 12.32; SD = 3.30 versus M = 12.07; SD = 3.29; t(8813) = 3.29, $p < 0.001$ and M = 0.683; SD = 0.023 versus M = 0.681; SD = 0.022; t(8813) = 2.56, $p = 0.01$), as shown in Table 2.

The findings show that the two main factors (resilience and self-efficacy) had a statistically significant impact on depression (F(2.8789) = 317.031, $p < 0.001$; $_{adjusted}R^2 = 0.067$). Table 3 shows the coefficients of the significant predictors, revealing that the variable with the strongest impact on depression was Resilience, explaining 6.6% of the outcome.

Discussion

In general, the respondents had low levels of resilience and self-efficacy and high mean depression scores. Men obtained significantly higher mean resilience scores than women, while nurses showed higher levels of resilience than nursing technicians. Finally, nursing professionals who worked in a campaign hospital during the COVID-19 pandemic obtained significantly higher Resilience scores than those who did not.

To speak of the positive impacts of the COVID-19 pandemic would be to disregard the deaths that occurred[18]. However, despite the chaotic situations experienced during the pandemic, such as the shortage of ICU beds, personal protective equipment and qualified professionals, nursing professionals in Brazil were committed to tackling the crisis, especially those working on the frontline.

The international literature presents evidence of the general relationship between level

Table 2. Mean resilience, depression and self-efficacy scores according to demographic variables, profession, COVID-19 diagnosis and working in a campaign hospital. Brazil, 2021 (n = 8,792).

Variables		Resilience			Depression			Self-efficacy		
	n	Mean	Standard deviation (SD)	P	Mean	Standard deviation (SD)	p	Mean	Standard deviation	p
Profession										
Nurse	5.767	12,06	3,27	< 0,001**	0,745	0,019	< 0,001**	0,683	0,023	< 0,001**
Nursing technician	2.842	12,33	3,32		0,749	0,020		0,680	0,021	
Auxiliary nurse	183	12,44	3,21		0,748	0,021		0,678	0,024	
Sex										
Male	1.355	12,43	3,25	< 0,001*	0,748	0,021	0,003*	0,682	0,020	0,92*
Female	7.437	12,11	3,29		0,746	0,019		0,682	0,023	
Age group (years)										
18-30	7.991	12,09	3,29	< 0,001*	0,746	0,019	0,01**	0,682	0,022	0,62**
31-50	796	12,86	3,20		0,748	0,020		0,682	0,022	
51 and over	5	14,80	1,64		0,734	0,014		0,672	0,020	
Region										
Northeast	2.643	12,27	3,33	< 0,001**	0,747	0,019	0,012**	0,682	0,022	0,369**
North	1.328	12,40	3,34		0,746	0,019		0,681	0,021	
Midwest	1.578	12,11	3,26		0,746	0,020		0,682	0,022	
Southeast	2.460	11,98	3,29		0,745	0,020		0,682	0,023	
South	783	12,02	3,06		0,746	0,019		0,681	0,021	
Skin color										
White	3.943	12,07	3,26	0,1**	0,746	0,019	0,22**	0,682	0,023	0,28
Black	806	12,35	3,37		0,745	0,020		0,682	0,021	
Brown	3.917	12,20	3,31		0,746	0,020		0,682	0,022	
Yellow	126	12,26	2,86		0,745	0,018		0,679	0,023	
Marital status										
Married/stable union	4.594	12,22	3,27	0,029**	0,747	0,019	< 0,001**	0,681	0,022	< 0,001**
Single/divorced	4.148	12,08	3,30		0,745	0,020		0,683	0,023	
Widowed	50	12,98	3,13		0,746	0,019		0,680	0,020	
COVID-19 diagnosis										
No	5.807	12,12	3,29	0,15*	0,746	0,19	0,97*	0,682	0,022	0,44*
Yes	2.985	12,23	3,28		0,746	0,19		0,682	0,022	
Working in a campaign hospital										
No	6.089	12,08	3,29	< 0,001*	0,746	0,19	0,62*	0,681	0,022	0,01*
Yes	2.703	12,33	3,39		0,746	0,20		0,683	0,023	

* = Student's t-test. ** = ANOVA.

Source: Authors.

of resilience and gender. A study with Spanish university students using the Connor-Davidson Resilience Scale showed that male students obtained higher scores for the factors optimism and adaptation to stressful situations[19]. Other studies have also reported significant differences between genders[20-22]. With regard to profession, the present study revealed that nurses obtained high-er resilience scores than nursing technicians. A study investigating psychosocial stress and resilience among nursing professionals in the South of Brazil did not find any statistically significant differences in resilience scores between professions[23]. Further research should be conducted to elucidate this question, because both professionals with secondary education level and higher

education qualifications may have low levels of resilience.

Nursing professionals in Brazil are divided into categories and poorer working conditions in *lower-skilled* categories may influence the mental health of workers. A study with nursing technicians in three of Brazil's regions showed that poor working conditions, such as low pay, overwork and psychic burdens, are frequent among this category[24]. Another study found that approximately half of nursing technicians had mental disorders associated with financial and work issues[25]. These issues were aggravated by the pandemic, which led to changes in the dynamics of everyday work.

Our findings regarding professionals working in campaign hospitals are inconsistent with the literature, with a study investigating resilience showing that health professionals working with the diagnosis and treatment of people with COVID-19 were more vulnerable to mental illness[26]. Adverse situations involving exposure to health risks can trigger high levels of stress and symptoms of mental illness. However, it is important to consider that campaign hospitals were better equipped than other health facilities during the first months of the pandemic, which may have influenced nursing professionals' perceptions of the safety of working on the frontline.

Our findings reveal statistically significant differences in self-efficacy for the variables profession and working in a campaign hospital during the COVID-19 pandemic, with nurses obtaining higher scores than nursing technicians and auxiliary nurses and nursing professionals who worked in campaign hospitals obtaining higher scores than those who did not. Nursing professionals obtained generally low overall scores for self-efficacy. Similar results were found in a study in Italy, which showed that nurses had low self-efficacy and that female nurses were more likely to have low self-efficacy than male nurses[27]. A study with nurses in Wuhan showed

that self-efficacy was one of the main factors affecting anxiety among nurses[28].

Studies investigating self-efficacy among nursing teams during the COVID-19 pandemic are scarce in both the national and international literature. However, based on Bandura's[29] definition of self-efficacy – a person's belief in their ability to perform a task – it is possible that the differences between nurses, nursing technicians and auxiliary nurses may be partially related to the activities performed by nurses, such as leading nursing staff and the management of nursing and health services. In addition, authors have suggested that a belief in one's own ability can influence other indicators such as resilience[30].

It is important to implement interventions designed to develop and maintain high levels of self-efficacy among nursing professionals, especially during times of pandemic. A study with Jordanian nurses showed that coping self-efficacy was a protective factor against psychological distress during the COVID-19 pandemic[31]. The authors suggested the implementation of stress-reduction strategies and referral to psychological services aimed at reducing mental distress among nursing professionals experiencing stress due to the pressure of a heavy workload or exposure to risk.

The data presented show that nurses had a significantly higher mean depression score than nursing technicians and auxiliary nurses and that resilience and self-efficacy had a significant influence on depression, with the former explaining 6.6% of the outcome.

Clinical nurses face situations that negatively affect their physical and mental health on a daily basis. They face high levels of workplace stress, which negatively affect care delivery[9,10]. The low levels of resilience observed in the present study influence the mental health of nursing professionals. The pandemic aggravated obstacles to care, negatively impacting nursing professionals. Actions are therefore needed to promote the physical and psychological well-being of professionals working in exceptional situations. Studies have shown that resilience plays an important role in promoting the mental health of people in times of pandemic[32].

Resilience plays a fundamental role in coping with unexpected situations among nursing professionals. However, these factors should not be analyzed in an isolated manner. It is important to understand the circumstances under which these professionals work and think critically beyond the pandemic as an isolated conditioning factor.

Table 3. Predictors of depression. Brazil, 2021 (n = 8,792).

Predictors	Standardized beta coefficient	*t*	Sig.	Adjusted^{R2}	R2*
(Constant)	-			-	-
Resilience	0.254	24.642	0.000	0.066	-
Self-efficacy	-0.036	-3.458	0.001	0.067	0.001

*Change in R2

Source: Authors.

From this perspective, an international review covering four countries highlighted that organizational support and participation in policy and procedure development resulted in higher resilience scores among nurses[33]. Further research with nursing professionals in Brazil is therefore needed to investigate factors related to the involvement of nursing teams in management decision-making and the formulation of nursing care policies.

Our findings regarding symptoms of mental disorders are similar to those of a study conducted in the Northeast of Brazil, which found that symptoms of depression and anxiety were more frequent among professionals working in services with inadequate working conditions[34]. The international literature has documented high levels of depression among health professionals who worked in care services during the COVID-19 pandemic[35,36].

A systematic literature review found that the pooled prevalence of depression among nurses working during the COVID-19 pandemic was 35%, which is consistent with the results of the present study[37]. The findings in the literature and the results of the present study suggest an urgent need for actions to address the difficulties experienced by nursing professionals during crisis situations like pandemics. Urgent measures are needed to promote self-care focusing on protective factors for the mental and physical health of nursing professionals.

Good occupational protection practices and the provision of personal protective equipment were found to be protective factors against depression among pediatric nurses in China[38]. The COVID-19 pandemic has brought the academic and public discussion of the psychological problems faced by nursing professionals when subjected to unexpected care situations center stage.

The promotion of the psychological and physical health of nursing professionals is increasingly urgent in the face of crisis situations such as pandemics. The government and *professional bodies should develop actions to* better equip workers to cope with similar situations in the future. Under adequate working conditions, nurses should be prepared to lead a multiprofessional team without adversely affecting their own general health.

The main contributions of this study can be summarized as follows: 1) Low levels of resilience contribute to higher levels of depression, which is important for discussions about the elaboration of public policies designed to improve levels of resilience among nursing professionals, especially those working during unexpected events such as pandemics; and 2) the results encompass the three categories of nursing professionals (nurses, nursing technicians and auxiliary nurses) working during the pandemic in all of Brazil's regions, contributing to a better understanding of issues related to the mental health of nurses in Brazil.

Conclusion

Our findings show that the COVID-19 pandemic had psychological impacts on nursing professionals working in health services during the crisis. The respondents obtained generally low scores for resilience and self-efficacy, aspects that are considered protective factors against depression, and level of resilience had an impact on depression. In general, respondents showed low levels of resilience and self-efficacy and high scores for depression. These findings reveal an urgent need for actions to promote the psychological health of nursing professionals working in crisis situations such as pandemics.

Collaborations

LRM Sousa, PHT Leoni, RAG Carvalho, CAA Ventura, ACO Silva, RK Reis and E Gir contributed to study conception and design, data analysis and interpretation, and the drafting and critical revision of this article, and approved the final version to be published.

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References

1. Van Bogaert P, Adriaenssens J, Dilles T, Martens D, Van Rompaey B, Timmermans O. Impact of role-, joband organizational characteristics on nursing unit managers' work related stress and well-being. *J Adv Nurs* 2014; 70(11):2622-2633.

2. Hayes B, Douglas C, Bonner A. Work environment, job satisfaction, stress and burnout among haemodialysis nurses. *J Nurs Manag* 2015; 23(5):588-598.

3. Guo YF, Cross W, Plummer V, Lam L, Luo YH, Zhang JP. Exploring resilience in Chinese nurses: a cross-sectional study. *J Nurs Manag* 2017; 25(3):223-230.

4. Gurgel LEA, Gonçalves PLENTZ, Méa RD, Joly MCRA, Reppo CT. Avaliação da resiliência em adultos e idosos: revisão de instrumento. *Estud Psicol* 2013; 30(4):487-496.

5. Chew QH, Chia FA, Ng WK, Lee WCI, Tan PLL, Wong CS, Puah SH, Shelat VG, Seah ED, Huey CWT, Phua EJ, Sim K. Perceived stress, stigma, traumatic stress levels and coping responses amongst residents in training across multiple specialties during CO-VID-19 pandemic – a longitudinal study. *Int J Environ Res Public Health* 2020; 17(18):6572.

6. Shechter A, Diaz F, Moise N, Anstey DE, Ye S, Agarwal S, Birk JL, Brodie D, Cannone DE, Chang B, Claassen J, Cornelius T, Derby L, Dong M, Givens RC, Hochman B, Homma S, Kronish IM, Lee SAJ, Manzano W, Mayer LES, McMurry CL, Moitra V, Pham P, Rabbani L, Rivera RR, Schwartz A, Schwartz JE, Shapiro PA, Shaw K, Sullivan AM, Vose C, Wasson L, Edmondson D, Abdalla M. 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.

7. Baduge MSP, Morphet J, Moss C. Emergency nurses' and department preparedness for an ebola outbreak: a (narrative) literature review. *Int Emerg Nurs* 2018; 38:41-49.

8. De Brier N, Stroobants S, Vandekerckhove P, De Buck, E. Factors affecting mental health of health care workers during coronavirus disease outbreaks (SARS, MERS & COVID-19): a rapid systematic review. *PLoS One* 2020; 15(12):e0244052.

9. Hegney D, Rees CS, Eley R, Osseiran-Morrison R, Francis K. The contribution of individual psychological resilience in determining the professional quality of life of Australian nurses. *Front Psychol* 2015; 6:1613.

10. Rushton CH, Batcheller J, Schroeder K, Donohue P. Burnout and resilience among nurses practicing in high-intensity settings. *Am J Crit Care* 2015; 24(5):412-420.

11. Hart PL, Brannan JD, De Chesnay M. Resilience in nurses: an integrative review. *J Nurs Manag* 2014; 22(6):720-734.

12. Sinclair VG, Wallston KA. The development and psychometric evaluation of brief resilient coping scale. *Assessment* 2004; 11(1):94-101.

13. Barreira DD, Nakamura AP. Resiliência e a autoeficácia percebida: articulação entre conceitos. *Aletheia* 2006; 23:75-80.

14. Fontes AP, Azzi RG. Crenças de autoeficácia e resiliência: apontamentos da literatura sociocognitiva. *Estud Psicol* 2012; 29(1):105-114.

15. Ribeiro JLP, Morais R. Adaptação portuguesa da escala breve de *coping* resiliente. *Psicol Saude Doenças* 2010; 11(1):5-13.

16. Goldberg DP. *The detection of psychiatric illness by questionnaire*. Londres: Oxford University Press; 1972.

17. Damásio BF, Machado WL, Silva JP. Estrutura fatorial do Questionário de Saúde Geral (QSG-12) em uma amostra de professores escolares. *Aval Psicol* 2011; 10(1):99-105.

18. Hallal PC. Resistência e resiliência em tempos de pandemia. *Cien Saude Colet* 2020; 25(9):3342.

19. Mata SR, Martínez AM, Ortega FZ, Cuberos RC, Molero PP, Valero GG. Capacidad de resiliencia según tendencia religiosa y género en universitarios. *REDIE* 2019; 21:e15.

20. Fínez MJ, Morán MC. La resiliencia y su relación con salud y ansiedad en Estudiantes españoles. Una nueva visión de la Psicología: Psicología Positiva. *Int J Develop Educ Psychol* 2015; 1(1):409-416.

21. Gil I, Orbea JM, Axpe I. Aproximación al perfil resiliente de los/as futuros/as educadores/as sociales. *Rev Int Cien Soci* 2012; 1(1):1-15.

22. Zurita Y, Castro M, Linares M, Chacón R. Resiliencia un elemento de prevención en actividad física. *Sportis* 2017; 3(1):564-576.

23. Macedo ABT, Antoniolli L, Dornelles TM, Hansel LA, Tavares JP, Souza SBCD. Estresse psicossocial e resiliência: um estudo em profissionais da enfermagem. *Rev Enferm UFSM* 2020; 10(25):e25.

24. Scherer MDDA, Oliveira NAD, Pires DEPD, Trindade LDL, Gonçalves ASR, Vieira M. Aumento das cargas de trabalho em técnicos de enfermagem na atenção primária à saúde no Brasil. *Trab Educ Saude* 2016, 14(Supl. 1):89-104.

25. Santos FFD, Brito MFSF, Pinho LD, Cunha FO, Rodrigues Neto JF, Fonseca ADG, Silva CSDO. Transtornos mentais comuns em técnicos de Enfermagem de um hospital universitário. *Rev Bras Enferm* 2020; 73(1):e20180513.

26. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Hu S. Factors associated with mental health outcomes among health care workers exposed to Coronavirus Disease 2019. *JAMA Netw Open* 2020; 3(3):e203976.

27. Simonetti V, Durante A, Ambrosca R, Arcadi P, Graziano G, Pucciarelli G, Simeone S, Vellone E, Alvaro R, Cicolini. Anxiety, sleep disorders and self-efficacy among nurses during COVID-19 pandemic: a large cross-sectional study. *J Clin Nurs* 2021; 30(9-10):1360-1371.

28. Mo Y, Deng L, Zhang L, Lang Q, Pang H, Liao C, Wang N, Tao P, Huang H. Anxiety of Nurses to support Wuhan in fighting against COVID-19 Epidemic and its Correlation With Work Stress and Self-efficacy. *J Clin Nurs* 2021; 30(3-4):397-405.

29. Bandura A. A teoria da aprendizagem social de Bandura. In: Bandura A. *Teorias do desenvolvimento: conceitos e aplicações*. [s.l.]:[s.n]; 1992. p. 175-192.

30. Ibiapina ISM, Santos Junior RD, Grandizoli MV, Garcia VCB. Autoeficácia e indicadores de ansiedade e depressão em pacientes com câncer. *Psicol Hosp* 2018; 16(1):2-17.

31. Shahrour G, Dardas LA. Acute stress disorder, coping self-efficacy and subsequent psychological distress among nurses amid COVID-19. *J Nurs Manag* 2020; 28(7):1686-1695.

32. Gonçalves MP, Freires LA, Tavares JET, Vilar R, Gouveia VV. Fear of COVID and trait anxiety: mediation of resilience in university students. *Psicol Teor Prat* 2021; 23(1):1-16.

33. Jo S, Kurt S, Bennett JA, Mayer K, Pituch KA, Simpson V, Reifsnider E. Nurses' resilience in the face of coronavirus (COVID-19): an international view. *Nurs Health Sci* 2021; 23(3):646-657.

34. Santos KMRD, Galvão MHR, Gomes SM, Souza TAD, Medeiros ADA, Barbosa IR. Depressão e ansiedade em profissionais de enfermagem durante a pandemia da covid-19. *Esc Anna Nery* 2021; 25(esp.):e20200370.

35. Aly HM, Nemr NA, Kishk RM, bakr Elsaid NMA. Stress, anxiety and depression among healthcare workers facing COVID-19 pandemic in Egypt: a cross-sectional online-based study. *BMJ Open* 2021; 11(4):e045281.

36. Sahebi A, Nejati B, Moayedi S, Yousefi K, Torres M, Golitaleb M. The prevalence of anxiety and depression among healthcare workers during the COVID-19 pandemic: an umbrella review of meta-analyses. *Prog Neuropsychopharmacol Biol Psychiatry* 2021; 107:110247.

37. Al Maqbali M, Al Sinani M, Al-Lenjawi B. Prevalence of stress, depression, anxiety and sleep disturbance among nurses during the COVID-19 pandemic: a systematic review and meta-analysis. *J Psychosom Res* 2020; 141:110343.

38. Zheng R, Zhou Y, Qiu M, Yan Y, Yue J, Yu L, Lei X, Tu D, Hu Y. Prevalence and associated factors of depression, anxiety, and stress among Hubei pediatric nurses during COVID-19 pandemic. *Compr Psychiatry* 2021; 104:152217.