# CUIDADO É FUNDAMENTAL

# FACTORS ASSOCIATED WITH STRESS, ANXIETY AND DEPRESSION IN INTENSIVE CARE NURSING IN THE CONTEXT OF THE COVID-19 PANDEMIC

*Fatores associados ao estresse, ansiedade e depressão na enfermagem intensivista no contexto da pandemia de COVID-19*

*Factores asociados al estrés, la ansiedad y la depresión en la enfermería de cuidados intensivos en el contexto de la pandemia del COVID-19*

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**ABSTRACT**

**Objective:** to describe, through the literature, the factors associated with stress, anxiety and depression in nursing professionals working in the care of critically ill patients affected by COVID-19. **Method:** integrative literature review carried out in the information resources PubMed, Cochrane, LILACS, BDENF, and SciELO using the descriptors: COVID-19; Intensive care units; Mental health; Anxiety; Nursing, with articles published between 2020 and 2021. **Results:** 10 complete studies were selected for interpretive analysis. Factors such as lack of knowledge about the disease, work overload, lack of personal protective equipment, among others, were identified as the main factors associated with the development and elevation of anxiety, stress and depression in nursing professionals working in the care of critically ill patients infected by COVID-19. **Conclusion:** it became evident that nursing professionals experienced significant psychological suffering caused by the COVID-19 pandemic. And that these sufferings last both in your work environment and in your personal life.

**DESCRIPTORS:** COVID-19; Intensive care units; Mental health; Anxiety; Nursing.

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**RESUMO**

**Objetivo:** descrever por meio da literatura, os fatores associados ao estresse, ansiedade e depressão em profissionais de enfermagem atuantes nos cuidados a pacientes graves acometidos pela COVID-19. **Método:** revisão integrativa da literatura realizada nos recursos informacionais PubMed, Cochrane, LILACS, BDENF, e SciELO utilizando os descritores: COVID-19; Unidades de terapia intensiva; Saúde mental; Ansiedade; Enfermagem, com artigos publicados entre 2020 e 2021. **Resultados:** foram selecionados 10 estudos completos para análise interpretativa. Fatores como o desconhecimento da doença, sobrecarga de trabalho, falta de equipamentos de proteção individual dentre outros, foram identificados como principais fatores associados ao desenvolvimento e elevação de ansiedade estresse e depressão em profissionais de enfermagem atuantes nos cuidados aos pacientes graves infectados pela COVID-19. **Conclusão:** evidenciou-se que os profissionais de enfermagem experimentaram sofrimento psicológico significativo causado pela pandemia de COVID-19. E que esses sofrimentos, perduram tanto em seu ambiente de trabalho quanto em sua vida pessoal.

**DESCRITORES:** COVID-19; Unidades de terapia intensiva; Saúde mental; Ansiedade; Enfermagem.


**RESUMEN**

**Objetivo:** describir, a través de la literatura, los factores asociados al estrés, la ansiedad y la depresión en profesionales de enfermería que trabajan en la atención de pacientes críticos afectados por COVID-19. **Método:** revisión integradora de la literatura realizada en los recursos de información PubMed, Cochrane, LILACS, BDENF y SciELO utilizando los descriptores: COVID-19; Unidades de cuidados intensivos; Salud mental; Ansiedad; Enfermería, con artículos publicados entre 2020 y 2021. **Resultados:** Se seleccionaron 10 estudios completos para análisis interpretativo. Factores como el desconocimiento de la enfermedad, la sobrecarga laboral, la falta de equipo de protección personal, entre otros, fueron identificados como los principales factores asociados al desarrollo y elevación de la ansiedad, el estrés y la depresión en los profesionales de enfermería que laboran en el cuidado de enfermos críticos. pacientes infectados por COVID-19. **Conclusión:** se hizo evidente que los profesionales de enfermería experimentaron un importante sufrimiento psicológico causado por la pandemia de COVID-19. Y que estos sufrimientos perduran tanto en tu entorno laboral como en tu vida personal.

**DESCRIPTORES:** COVID-19; Unidades de cuidados intensivos; Salud mental; Ansiedad; Enfermería.

## INTRODUCTION

According to Resolution No. 7 of 2010 of the Ministry of Health, an intensive care unit (ICU) is an area assigned for the hospitalization of critically ill patients, who require professional and specialized care in an uninterrupted manner, primary technologies for diagnosis, characteristic materials, continuous monitoring, and treatment.[1]

In this environment, intensive care is directed to the recovery of patients in an appropriate environment within the necessary time, where the professional must be trained to perform complex activities with theoretical basis, leadership, responsibility and practice. Due to the anticipation of emergencies, technical complexity and the demanding conditions of critically ill patients, stressful situations are many in the ICU, thus characterizing the intensivist work by high pressure and emotional instability for both the professional and the patient and his family.[2]

In the current context, it is noteworthy that the incidence of stress, anxiety, depression and Burnout Syndrome (BS) in health professionals has increased considerably when compared to the last 3 years. This is justified by the fact that the pandemic of COVID-19, provides situations that drive psychological and psychosocial changes of these professionals working in the care of patients infected with COVID-19, such as uncertainty about the disease, work overload due to the withdrawal of infected professionals, crisis in the supply of materials and personal protective equipment (PPE) among others.

This complex viral disease that affects vital organs such as lungs, heart, kidneys, liver, and brain, had its local epidemic confirmed in Wuhan, China in the year 2019. However, due to its high infectivity and high pathogenicity, it quickly spread to several countries, calling it no longer an epidemic but a pandemic due to SARS-COV-2 virus or simply COVID-19 pandemic.[3]

After its advance, the rate of ICU admissions increased exponentially. And due to its unfamiliarity with the correct therapy, it considerably increased the incidence of complications and mortality of patients in the ICU environment. Given this pandemic scenario, the health systems of all affected countries were overloaded, leading several of these systems to collapse, thus contributing to high rates of stress, anxiety, depression, and SB among health professionals, among them the nursing team.[4]

As the largest team that is always at the bedside, due to the progressive increase in the number of confirmed and suspected cases, the nursing team suffers from an intense workload, lack of Personal Protective Equipment (PPE) and supplies, absenteeism, and emotional distress, especially due to the increase in the number of deaths. These factors may contribute to the burden of stress, anxiety, depression and SB professionals, who perform direct care being twenty-four hours with critical patients.[5]

This study is justified due to the need to understand the psychological aspects that nursing professionals experience in response to the COVID-19 pandemic in order to understand the pressures placed on them. However, this study started from

the following guiding question: What are the main factors associated with stress, anxiety, and depression in nursing professionals working in direct care of critically ill patients affected by COVID-19?

Thus, this study aimed to describe through literature the factors associated with stress, anxiety, and depression in nursing professionals working in the care of critically ill patients affected by COVID-19.

## METHOD

This was an integrative literature review study with the purpose of systematizing the factors associated with stress, anxiety and depression in nursing professionals working in direct care of critically ill patients infected with COVID-19. Therefore, to carry out this study, the following steps were taken: definition of the theme, identification of the research question; definition of eligibility criteria; database search; selection of selected studies; elaboration of the data collection instrument, extraction of the results by means of fiching, organization of the data in a proper table; analysis and discussion of the results.

In order to build a complete search, a strategy based on the PICO elements was defined, which is an acronym for Patient; Intervention; Comparison; Outcome.

The search for the studies was performed in two distinct moments. In a first moment, the search was made by one of the authors. After the selection of the studies, a second search was made by a second author, a specialist in the research area, in order to confirm the selected studies and guarantee a better selection.

The search and selection, occurred through the following databases: Medline Public/Public (PUBMED); Cochrane Library, Latin American and Caribbean Literature on Health Sciences (LILACS), Nursing Database (BDENF) and Scientific Electronic Library Online (SciELO). For the search and selection, the following descriptors were used: COVID-19; Intensive Care Units; Mental Health; Anxiety; Nursing. These descriptors were combined with each other using the Boolean terms AND, OR and NOT, which provided a more detailed search.

The method of study eligibility was carried out in three phases: Thematic, Abstract, and Full Articles. The inclusion criteria for this study consisted of: articles available in full that portrayed the proposed theme, observational, descriptive and intervention studies, that referred to nursing care to patients with COVID 19, published in English, Portuguese or Spanish between 2020 and 2021, that had nursing professionals as participants and that answered the proposed objective. We did not consider abstracts, theses and dissertations, articles that were not available in full, that did not mention nursing professionals as participants in the study, that evaded the subject of COVID 19, and that did not answer the proposed objective. The results of the search and selection of studies are presented in chart 1.

Data extraction consisted of reading the full text of the selected articles, summarizing the main ideas and results, and then digitizing and organizing the main results in a Microsoft Office Excel (2019) spreadsheet, where items such as authors and

**Chart 1** - Flowchart of the study selection process.

| Total studies identified with the descriptors (N: 1352) |
|:---:|
| PUBMED: 1240 |
| SCIELO: 50 |
| COCHARANE LIBRARY: 36 |
| LILACS: 15 |
| BDENF: 11 |
| **SELECTION** |
| **No. of studies excluded (N: 1200)** |
| No relation to the theme: 600 |
| Do not evaluate the objective: 600 |
| **ELIGIBILITY** |
| **Eligible articles (N: 152)** |
| Excluded by duplication: 68 |
| Excluded for not focusing the objective: 26 |
| Excluded due to unavailability: 48 |
| **INCLUSION** |
| **Analyzed articles included (N: 10)** |
| PUBMED: 3 |
| SCIELO: 2 |
| COCHARINE LIBRARY: 0 |
| LILACS: 5 |
| BDENF: 0 |

**Source:** Prepared by the author.

year of publication, design of the selected studies, number and characterization of participants, and the main factors associated with the development or increase of psychological changes such as anxiety, stress, and depression in professionals working in the care of critically ill patients who were victims of COVID-19 were addressed. After data collection, the analysis, presentation, and discussion of the results found were performed.

## RESULTS

In an initial screening, 1352 articles were identified. After applying the filters (original articles), 1200 articles were identified. After applying the second filter (published between 2020 and 2021), a total of 152 articles were identified. These were submitted to a title and abstract reading, which resulted in a total

of 36 articles. After the complete reading of these 36 articles, a total of 10 articles were selected to be part of the research corpus. These articles were evaluated in detail, and their characteristics and main findings are described in Table 1.

In order to organize the studied publications, they were arranged in a table, containing data such as author and year of publication, delineation of the articles and main factors associated to the emergence or increase of stress, anxiety and depression in the nursing team acting in the care of critically ill patients victims of COVID 19. The information was organized in descending order by year of publication (Table 1).

It was found that there was a higher occurrence of publication of articles with the proposed theme in 2021, with 70 (70%) of the total articles included in the study, 30 (30%) were from the year 2020. According to the nature of the studies it was found that 70 (70%) are cross-sectional studies, 20 (20%) is convergent

**Table 1.** Main factors associated with stress anxiety and depression in nursing staff, described in the selected literature; 2021.

| Author, year. | Method | N | Factors associated with stress, anxiety, depression |
|---|---|---|---|
| **Zheng R. et al., 2021.[2]** | Cross-sectional study. | **N=617.** EN=617. | Working in isolations with patients suspected, or confirmed to have detected COVID-19. Direct contact with body fluids or blood of these patients. |
| **Han, L. et al. 2020.[6]** | Cross-sectional study. | **N=22.034** EN=22.034. | Addressing the COVID-19 outbreak, demographic background, psychosocial and work-related factors. |
| **Crowe, S. et al., 2021.[7]** | Convergent mixed-method study. | **N=124.** EN=124. | Rapidly changing policy and information, oppressive and unclear communication, meeting patient needs in new ways, managing personal life in the midst of a pandemic. |
| **Dal Bosco, E. B., et al., 2020.[8]** | Cross-sectional observational study. | **N=88.** EN=31. TE=44. PA=13. | Work overload, daily exposure and direct care of patients with COVID 19, care of critically ill patients. |
| **Santos, K. M. R., et al., 2021.[9]** | Sectional study of the web survey type. | **N=490.** EN=292. TE=198. | Working in private employment, having Burnout symptoms, being a professional in services with no structure for the pandemic, having public or private employment. |
| **Freitas, R. F., et al., 2020.[10]** | This is a descriptive, cross-sectional study with a quantitative approach. | **N=94.** TE=94. | Rigid workload, overtime work, having more than one employment relationship, and behavioral factors. |
| **Horta, R. L.; et al., 2021.[11]** | Cross-sectional study. | **N=123.** PE=94. DA=29. | Stress, fear, insecurity, high workload. |
| **Heesakkers H., et al., 2021.[12]** | Cross-sectional study. | **N=726.** EN=726. | Fear of infecting relatives, working in a university hospital, not enough coworkers. |
| **Gil, M. T. G., et al., 2021.[13]** | Cross-sectional study. | **N=557.** EN=557. | Work overload, fear of contamination and its consequences, high rates of nursing patients. |
| **Lima, C. T.; Santana, N. C. M.; 2021.[14]** | Descriptive exploratory, qualitative study. | **N=6.** EN=6. | Excessive workload, more than one job, little appreciation, no growth perspective, negative reflexes on personal life, they don't participate in training. |

Legends: **(N)**=number of study participants, **(EN)**=Nurses, **(TE)**=Nursing Technicians and/or Nursing Assistants, **(PE)**=Nursing Professionals, **(PA)**=Administrative Professionals, **(DA)**=Other Areas.

study of mixed method, 10 (10%) is field research, descriptive and exploratory of qualitative approach.

When analyzing the triggering factors of emotional exhaustion and other emotional factors involving health professionals, among them the nursing team, it was verified in 2 studies, a rate higher than 40 (40%) of the interviewees.[14,13]

Regarding the factors associated with stress, anxiety and depression in the nursing team working with critically ill patients in the context of the pandemic of COVID-19, the studies evidenced multicausality for its development. However, some factors were highlighted in this context, such as work overload, absenteeism and uncertainty about the disease and exposure to the virus. These factors manifested themselves with more intensity during the pandemic, both individually and collectively among the professionals.

## DISCUSSION

Since the end of 2019, the daily routine of the intensive care nursing team, which was already intense and stressful due to the excessive number of critically ill patients in the ICU, high workload and low wages, They saw this daily routine become more intense and stressful with the beginning of the epidemic of the COVID-19, which soon became the now called "Pandemic of COVID-19", since this pandemic provided painful measures of protection and isolation, constant deaths, exposure to the virus and the uncertainty of how to deal and fight this virus.

COVID-19, a disease caused by the new coronavirus, is a respiratory viral infection that affects epithelial, alveolar, and endothelial cells leading to viral changes causing acute respiratory distress syndrome (SARS) in the most severe cases. SARS is caused by an acute inflammatory response in the alveoli, which impairs gas exchange between oxygen and carbon dioxide and is observed by severe respiratory distress and low blood oxygen saturation.[15]

The mortality among nursing professionals in Brazil during the pandemic on November 6, 2021 was in a total of 869 deaths, where 830 are confirmed cases of COVID-19, 39 are suspected cases, of this number of deaths 68.12% were female. The apex occurred on March 02, 2021 with a development of 46 nursing deaths. A total of 58,971 cases of COVID-19 were reported in nursing professionals with a lethality rate at 2.64%.[16]

In the work environment it is possible to observe as potential stressors in health professionals the stress of work overload, lack of medication and PPE, long working hours, exposure to the virus, the increase of confirmed or suspected cases, fear of getting infected, fear of death, feeling of helplessness, irritable behaviors, among other feelings that generate stress, anger, and even depression.[17]

Studies compared three groups of nurses working in a community hospital during the SARS outbreak. These groups comprised those who naturally worked in units at high risk of SARS exposure, those who were automatically recruited to high-risk units because of staffing needs, and those who worked in units with little risk of SARS exposure. The analysis showed that both groups of nurses working in the high-risk groups experienced higher degrees of anxiety, depression, hostility, and somatization when related to the low-risk group, with the recruited group experiencing the most severe distress on average.[6]

A meta-analysis, when evaluating 12 studies, indicated a prevalence of anxiety among nursing workers between 22.6% and 36.3%. Another study conducted in China indicates a 41.1% rate of anxiety among nurses working in the care of patients victims of COVID-19, a fact considered higher than society in general, taking into account the psychological well-being of nurses suffering from emotional stress, high-risk circumstances, and unfavorable experiences. Both studies, point out that nursing workers identified with anxiety, in their majority, are professionals working in critical sectors, and who were in the front line in the care of severe patients victims of COVID-19.[6,8]

Another important factor to be highlighted is the fact that the workplaces of these professionals are closed environments, of high complexity, with severe and unstable patients with high risk of death. These factors were also associated with increased anxiety rates among nursing professionals. Thus, studies indicate that a large part of health care workers are at risk of developing post-traumatic stress disorder (PTSD) and post-traumatic stress signs and symptoms (PTSS) after coronavirus outbreaks, due to the degree of exposure, occupational functions, years of work practice, marital status, and previous mental disorders were presented as risk factors related to PTSD and/or PTSS.[2,8]

During the COVID-19 pandemic, in addition to affecting the development of mental illnesses, work activities and working conditions are potential sources of exposure to the virus, in addition there is a lack of training and even insufficient or unavailable protective equipment. Most professionals consider work overload and conflicts between personal values and work values as factors that generate pressure at work. One of the factors is that professionals take on too much responsibility, a fact shown in the study in which the prevalence of SB increases with age.[10]

However, frontline professionals showed more frequent signs of fatigue and SB at different stages of the pandemic. Providing emotional support, different scale rests, and adjustments to daily activities and physical spaces were the results of this study that confirmed indications of care that needs to be provided for the care team.[11]

There is a clear imbalance between workload and human resources that was evidenced with the care of patients with COVID-19. One study points out that workload increased by 33%, evidenced by the Nursing Activities Score (NAS) scale with an average score of 84 points exceeding the normal value of 63 points. This is due to the higher demands of complex critical unit activities for patients with COVID-19, which rely on mechanical ventilation, extracorporeal life support, prone position maneuvers with an intubated patient, paramentation, and PPE de-parenting. This increase in NASS score is also associated with emotional distress and development of mental illness.[13]

Thus, increased emotional fatigue occurs due to the inability to meet the psychological, social, and emotional needs of patients and their families. A fact demonstrated in the study in which frontline nurses are a group that can present more frequent and intense symptoms of anxiety, depression, insomnia, and psychological stress.[13]

Workers are subject to certain disorders associated with stress and Burnout due to factors such as: work overload, low pay, physical risks, hostile conduct, high standards of unreliability, strikes, idleness, absenteeism, huge turnover of workers, high rates of illness, lack of confidence, and lack of respect. In this way, health professionals are affected in their family, social, and work relationships, where many present emotional fatigue, anxiety, and irritability, resulting mainly in health problems.[14]

However, it is of utmost relevance to consider these causes in order to program efficient actions to minimize the risk of psychological suffering. Family and social support, support from managers and colleagues, training, and positive coping mechanisms are exposed as reasons that health professionals obtain as prevention against these disorders.[2]

## CONCLUSION

Based on the results of this study, and supported by the related literature, it is concluded that nursing professionals experienced significant psychological distress related to the current COVID-19 pandemic. And that these psychological sufferings and distress endure in both their work environment and personal lives, ultimately driving an emotional imbalance.

It was found that in the context of COVID-19, an exponential rise in the rates of stress, anxiety, and depression in frontline nursing professionals fighting COVID-19. These rates were associated with factors that have existed in the context of intensive care nursing for several years, but which were more emphasized in the context of the COVID-19 pandemic.

Among some associated factors, the studies pointed out the work overload, the lack of knowledge about the disease and uncertainties about how to fight it, reduced dimensioning, lack of correct EPIS for the professionals' protection, the high rate of deaths, severity of patients contaminated by COVID-19 admitted to critical care units, among others.

In this sense, it is necessary to develop an occupational health plan for health professionals working in the care of critically ill patients contaminated by COVID-19, in order to minimize anxiety, stress and even depression in these professionals, promoting better mental health and consequently a better quality of life at work, better quality of care and reduction of absenteeism rates in the workplace.

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