

## Burnout syndrome in nursing professionals caring for patients with COVID-19

### Burnout Syndrome en los profesionales de enfermería en atención a pacientes con COVID-19

### Síndrome de burnout em profissionais de enfermagem que prestam cuidados a doentes com COVID-19

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### Abstract

**Introduction:** In 2019, a new disease associated with COVID-19 originated in Wuhan, causing severe acute respiratory syndrome. Due to the high spread of the virus, the increasing number of cases and deaths in the world has impacted the mental health of nursing, being a risk of developing burnout syndrome. **Objective:** To determine the association of burnout syndrome with sociodemographic and occupational characteristics in nursing professionals who provide care to patients with COVID-19. **Methodology:** Descriptive, cross-sectional study in 73 nurses, selected by non-probabilistic sampling. A sociodemographic and occupational data questionnaire and the Maslach Burnout Inventory questionnaire were applied. Participants were informed about the objective of the study and the informed consent was requested. Data were analyzed using descriptive and inferential statistics with Pearson's Chi-square test. **Results:** 74% were female, mean age was 26.0 years, SD=4.9, 37% worked the night shift. 61.6% showed signs of burnout syndrome ranging from low to high grade. There was a prevalence of 4.1% of high burnout syndrome, 15.1% of a moderate burnout syndrome, 42.5% of a low burnout syndrome and 38.4% no signs of burnout syndrome. No association was found between burnout syndrome and sociodemographic characteristics ( $p > 0.05$ ). **Conclusions:** Effective interventions to improve mental health are needed to alleviate nurse burnout and workplace stressors.

**Key words:** Psychological Exhaustion; Emotional Exhaustion; Burnout; Psychic Exhaustion; Nursing Personnel (DeCS).

### Resumen

**Introducción:** En el año 2019, en Wuhan se origina una nueva enfermedad asociada al COVID-19, causante del síndrome respiratorio agudo grave. Debido a la alta propagación del virus, el número de casos en aumento y muertes en el mundo ha impactado en la salud mental del personal de enfermería siendo un riesgo para desarrollar Burnout Syndrome. **Objetivo:** Determinar la asociación del Burnout Syndrome con las características sociodemográficas y laborales en los profesionales de enfermería que brindan atención a pacientes con COVID-19. **Metodología:** Estudio descriptivo, transversal en 73 enfermeros y enfermeras, seleccionados por muestreo no probabilístico. Se aplicó cédula de datos sociodemográficos y laborales y cuestionario Maslach Burnout Inventory, previa información del estudio y solicitud de consentimiento informado. Los datos se analizaron mediante estadística descriptiva e inferencial con prueba Chi cuadrado de Pearson. **Resultados:** El 74% correspondió al sexo femenino, la media de edad fue 26.0 años, DE=4.9, un 37% laboraba en turno nocturno. El 61.6% presentó indicios del Burnout Syndrome que iba desde un grado bajo hasta alto. Se encontró una prevalencia del 4.1% del Burnout Syndrome en grado alto, un 15.1% en grado moderado, un 42.5% en grado bajo y sin indicios un 38.4%. No se encontró asociación entre el Burnout Syndrome y las características sociodemográficas con  $p > 0.05$ . **Conclusiones:** Se necesitan intervenciones efectivas para mejorar la salud mental a fin de aliviar el agotamiento del profesional de enfermería y los factores estresantes en el lugar de trabajo.

**Palabras clave:** Agotamiento Psicológico; Agotamiento Emocional; Burnout; Agotamiento Psíquico; Personal de Enfermería (DeCS).

### Abstrato

**Introdução:** Em 2019, uma nova doença associada à COVID-19 teve origem em Wuhan, causando uma síndrome respiratória aguda grave. Devido à elevada propagação do vírus, o número crescente de casos e mortes no mundo tem tido impacto na saúde mental da enfermagem, sendo um risco de desenvolvimento da síndrome de burnout. **Objetivo:** Determinar a associação da síndrome de burnout com características sociodemográficas e ocupacionais em profissionais de enfermagem que prestam cuidados a doentes com



COVID-19. **Metodologia:** Estudo descritivo, transversal em 73 enfermeiros e enfermeiras, selecionados por amostragem não probabilística. Foram aplicados o cartão de dados sociodemográficos e ocupacionais e o questionário Maslach Burnout Inventory. Os participantes foram informados sobre o objetivo do estudo e foi solicitado o consentimento informado. Os dados foram analisados por meio de estatística descritiva e inferencial com o teste qui-quadrado de Pearson. **Resultados:** 74% eram do sexo feminino, com idade média de 26,0 anos, DE=4,9, 37% trabalhavam no turno da noite. 61,6% apresentaram sinais de síndrome de burnout, variando de baixo a alto grau. Houve uma prevalência de 4,1% de síndrome de burnout alto, 15,1% de síndrome de burnout moderado, 42,5% de síndrome de burnout baixo e 38,4% sem sinais de síndrome de burnout. Não foi encontrada associação entre a síndrome de burnout e as características sociodemográficas ( $p > 0,05$ ). **Conclusões:** São necessárias intervenções eficazes para melhorar a saúde mental, a fim de atenuar o esgotamento dos enfermeiros e os factores de stress no local de trabalho.

**Palavras-chave:** Exaustão Psicológica; Exaustão Emocional; Burnout; Exaustão Psíquica; Pessoal de Enfermagem (DeCS).

## Introduction

In 2019, in Wuhan, China, a new disease called COVID-19 associated with the SARS-CoV-2 virus, causing severe acute respiratory syndrome, characterized by direct contagion developing severe pneumonia, originated and due to its rapid spread in the world is considered a pandemic by the World Health Organization (WHO) on March 11, 2020 <sup>(1)</sup>. According to the WHO situation report of October 4, 2021, 219,446,675 confirmed cases and 4,547,782 deaths have been reported worldwide.

In Mexico, as of October 27, 2021, 4,014,005 confirmed cases and 300,746 deaths had been reported <sup>(2)</sup>, of these cases 283,122 were confirmed cases in health care personnel including nurses, physicians, dentists, chemists, or other health care workers. The mean age of the cases was 37 years and the most affected age group was 30-34 years, with a higher prevalence in the female sex of 62.7% <sup>(3)</sup>. Of the total accumulated cases in health personnel in Mexico according to profession, by October 25, 2021, 38.9% corresponded to nurses, 32% to other health workers, 25.3% to medical personnel, 2% to chemists and 1.8% to dentists <sup>(3)</sup>. Reporting 4,517 confirmed deaths among health personnel, the state of Nuevo León, Mexico ranked seventh with nearly 200 deaths at the national level, where 19% of the deaths registered corresponded to nursing personnel <sup>(3)</sup>.



The high prevalence of the disease, the number of cases and deaths in the world due to a relatively new disease can have a negative influence on the mental health of health personnel. Currently, health sciences is one of the areas where workers are more likely to present emotional exhaustion, especially nursing staff being more vulnerable to develop what is known as Burnout Syndrome (BS) <sup>(4,5)</sup>. This is usually due to work overload, long working hours, risk of exposure to disease, organizational factors, among others, but these had a major impact during a pandemic such as that caused by COVID-19, as such, nurses were one of the most important pillars of health care organizations during this pandemic and any failure would have irreversible consequences given their fundamental role in front-line patient care. Therefore, close attention should be paid to factors that may cause a negative effect on the job performance of nurses caring for patients diagnosed with COVID-19 <sup>(6-10)</sup>. BS is a response to chronic occupational stress characterized by negative attitudes and feelings in the work context, including the professional role. It is considered an occupational risk factor because it affects the quality of life, mental health and can endanger the lives of health personnel, whose main features are emotional exhaustion, depersonalization and decreased personal performance <sup>(11)</sup>. In 2000, the WHO recognized SB as an occupational risk because it produces dysfunctional behaviors, poor physical and mental health, stress, anxiety, depression, leading to absenteeism, among other problems <sup>(12, 13)</sup>.

Some studies have found that about 76% of health professionals have presented a high level of emotional exhaustion, depersonalization and a low rate of personal fulfillment <sup>(13)</sup>. Moreover, statistically significant associations have been observed between emotional exhaustion and age. Thus, as age increases, the emotional exhaustion score decreases <sup>(14)</sup>. However, in Mexico it has been found that 62.2% of health personnel, both physicians and nurses, have emotional exhaustion, 57.8% have depersonalization and 40% have personal fulfillment <sup>(15)</sup>. Unlike other professions, SB is more noticeable in nursing staff because they are more exposed to stressors such as constant direct contact with patients, which can lead to the



development of SB problems; such as weakness, insomnia, intestinal problems, headaches, hostility, irritability and depression contributing to reduced quality of care <sup>(16, 17)</sup>.

These data can be explained by the fact that in COVID-19 patient care areas, nurses make the first contact with people suspected of having the disease, makes the first contact with people suspected of having the disease, facing the uncertainty of not knowing if the person is positive, manifesting emotional tension, work overload, physical exhaustion that may be caused by the worsening of the patient's severity, the care of colleagues at risk of severity and death, lack of personal protective equipment, materials and professional resources <sup>(18)</sup>. In addition, there were fears related to the lack of knowledge about the clinical course and treatment of infected persons and the high possibility of infecting their own families, friends and coworkers <sup>(19)</sup>.

Therefore, it is important to approach the study of BS as a social problem because of the high level of exposure to this disease, with differences between populations and few studies in middle-income countries such as Mexico, due to long working hours using personal protective equipment and a high level of demand, increasing the risk of having emotionally exhausted nursing staff, which is the worst scenario to face the pandemic <sup>(15, 20)</sup>. This study will contribute to the nursing profession for the development and incorporation of possible indicators that support the early detection of BS and the real problems faced by nurses in their professional practice, as well as the creation of new strategies and work methods that help to reduce the risk of developing BS with the aim of improving the mental health of nursing staff and, therefore, improving the care provided to patients. Accordingly, the aim of the present study was to determine the association of BS with sociodemographic and occupational characteristics in nursing professionals who provide care to patients with COVID-19.

## **Methodology**

The present study was a cross-sectional descriptive study seeking the association between BS and sociodemographic and occupational characteristics in nursing professionals who provide care to patients



with COVID-19. The population of interest consisted of a sample of 73 nursing professionals who provided care to patients with COVID-19 in the municipality of Sabinas Hidalgo, Mexico in a second-level general hospital between July and December 2021. The sampling was non-probabilistic, census type, and a non-response rate of 8.6% was obtained.

Inclusion criteria included nursing professionals who provided care to patients with COVID-19 and who had more than 6 months of work experience; nursing professionals who for personal reasons decided not to participate in the study and/or who had left the data collection form incomplete were excluded.

A sociodemographic data questionnaire was applied that included age, sex, marital status and work characteristics such as degree of study, seniority, work shift, and the Maslach Burnout Inventory (MBI) questionnaire, which aims to measure the frequency and intensity with which burnout is suffered, consists of 22 items with Likert-type responses on the feelings and attitudes of the professional in his or her work. It consists of 3 subscales: a) Exhaustion or emotional exhaustion subscale, assesses the experience of being emotionally exhausted by the demands of work, consists of 9 questions (1, 2, 3, 6, 8, 13, 14, 16, 20) with a maximum score of 54 and a minimum of 0, and the higher the score in this subscale, the higher the emotional exhaustion and the higher the level of burnout, b) Depersonalization subscale, assesses the degree to which each person recognizes attitudes of coldness and detachment, it is made up of 5 items (5, 10, 11, 15, 22) with a maximum score of 30 and a minimum score of 0, the higher the score in this subscale, the higher the depersonalization and the higher the level of burnout, c) Personal fulfillment subscale, evaluates the feelings of personal fulfillment at work, it is composed of 8 items (4, 7, 9, 12, 17, 18, 19, 21), maximum score 48 and a minimum of 0, and the higher the score of this subscale the higher the personal fulfillment, in this case the score is inverse to the degree of burnout, this means that the lower the score the more affected the subject is. Where high scores in the first two subscales and low scores in the third define the BS. The three subscales have an internal consistency determined by a Cronbach's Alpha measurement of 0.65 in Mexican population <sup>(21)</sup>, the one reported in this study was 0.71 considered acceptable <sup>(22)</sup>.



The study was authorized by the management and the Teaching and Quality Department of the selected hospital and the Research Ethics and Research Committees with official letter F-HGSH-INV-005-21, in addition, the study complied with the provisions of the regulations of the General Health Law on Health Research in its Second Title Chapter I, III and V <sup>(23)</sup>. For data collection, personnel were invited to participate through a digital survey elaborated in Microsoft Forms, after voluntary acceptance of participation and reading the informed consent, respecting anonymity, the direct link to the survey was given to be answered outside working hours to avoid rejection at the time of application, with an approximate duration of 30 minutes. The data were analyzed with the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive and inferential statistics with Pearson's Chi-square test were used to examine the association between the study variables.

## **Results**

Seventy-four percent of the participants were female, the ages ranged from 20 to 36 years, the mean age was 26.0 years (Mdn = 25, SD = 4.86). The 53.4% were single, with respect to work characteristics, the majority worked the night shift (37%) and the last degree was a bachelor's degree (68.5%), the range of years of work seniority was from 6 months to 3 years with a mean of 1.56 years (Mdn = 1.5, SD = 0.71), (Table 1).

Of the study sample, 53.4% presented high values of burnout, 24.7% in depersonalization, and 6.8% presented low values of personal fulfillment (Table 2).



Table 1. Socio-demographic and labor characteristics, 2022. (n = 73)

| Sociodemographic characteristics | f  | %    |
|----------------------------------|----|------|
| Sex                              |    |      |
| Female                           | 54 | 74   |
| Male                             | 19 | 26   |
| Marital status                   |    |      |
| Married                          | 22 | 30.1 |
| Common-law marriage              | 10 | 13.7 |
| Single                           | 39 | 53.4 |
| Divorced                         | 2  | 2.7  |
| Labor characteristics            |    |      |
| Labor shift                      |    |      |
| Day                              | 23 | 31.5 |
| Evening                          | 14 | 19.2 |
| Night                            | 27 | 37.0 |
| Special                          | 9  | 12.3 |
| Schooling level                  |    |      |
| Technician                       | 21 | 28.8 |
| Bachelor's degree                | 50 | 68.5 |
| Master's degree                  | 1  | 1.4  |
| PhD                              | 1  | 1.4  |

Source: Own development.

Table 2. Aspects of the Burnout Syndrome (Burnout, Depersonalization and Self-Realization), 2022. (n = 73)

| Aspects           | Low |      | Medium |      | High |      |
|-------------------|-----|------|--------|------|------|------|
|                   | f   | %    | f      | %    | f    | %    |
| Burnout           | 18  | 24.7 | 16     | 21.9 | 39   | 53.4 |
| Depersonalization | 35  | 47.9 | 20     | 27.4 | 18   | 24.7 |
| Self-Realization  | 5   | 6.8  | 11     | 15.1 | 57   | 78.1 |

Source: Own development

According to depersonalization, those who were divorced and married presented higher values, these differences were statistically significant ( $X^2= 11.116$ ,  $p=0.034$ ). The evening shift presented lower values in personal fulfillment than the rest of the work shifts ( $X^2= 13.425$ ,  $p=0.037$ ). The sociodemographic variables (sex and age) and schooling were not statistically significantly associated to burnout, depersonalization and personal fulfillment ( $p>0.05$ ).

Of the sample, 61.6% showed signs of BS ranging from low to high degree. The percentage of prevalence of BS was 4.1% of high degree, 15.1% of moderate degree, 42.5% of low degree, and 38.4% with no signs.



The prevalences with the highest prevalence of BS according to sociodemographic characteristics were male sex with 68.4%, married (72.7%) and divorced (100%); with respect to work characteristics, the shift with the highest prevalence was the evening shift (71.4%) followed by night shift (66.7%); nevertheless, no statistically significant association was found in any of the sociodemographic and work variables with BS ( $p > 0.05$ ), (Table 3).

Table 3. Association between Burnout Syndrome and the sociodemographic and labor characteristics of the study sample, 2022. (n = 73)

| Sociodemographic and labor characteristics |                   | n  | Burnout Syndrome |      |                 |      |                    |      |                  |      |                          |      | X <sup>2</sup> (p) |
|--|-------------------|----|------------------|------|-----------------|------|--------------------|------|------------------|------|--------------------------|------|--------------------|
|  |                   |    | No indications   |      | Low indications |      | Medium indications |      | High indications |      | With indications (Total) |      |                    |
|  |                   |    | f                | %    | f               | %    | f                  | %    | f                | %    | f                        | %    |                    |
| Sex  | Female            | 54 | 22               | 40.7 | 21              | 38.9 | 8                  | 14.8 | 3                | 5.6  | 32                       | 59.3 | 1.99<br>(.965)     |
|  | Male              | 19 | 6                | 31.6 | 10              | 52.6 | 3                  | 15.8 | 0                | 0    | 13                       | 68.4 |                    |
| Marital status                             | Married           | 22 | 6                | 27.6 | 11              | 50.0 | 4                  | 18.2 | 1                | 4.5  | 16                       | 72.7 | 15.51<br>(.078)    |
|  | Common-law        | 10 | 5                | 50.0 | 3               | 30.0 | 2                  | 20.0 | 0                | 0    | 5                        | 50   |                    |
|  | Single            | 39 | 17               | 43.6 | 17              | 43.6 | 3                  | 7.7  | 2                | 5.1  | 22                       | 56.4 |                    |
| Shift                                      | Divorced          | 2  | 0                | 0    | 0               | 0    | 2                  | 100  | 0                | 0    | 2                        | 100  | 5.384<br>(.558)    |
|  | Day               | 23 | 11               | 47.8 | 8               | 34.8 | 4                  | 17.4 | 0                | 0    | 12                       | 52.2 |                    |
|  | Evening           | 14 | 4                | 28.6 | 6               | 42.9 | 3                  | 21.4 | 1                | 7.1  | 10                       | 71.4 |                    |
|  | Night             | 27 | 9                | 33.3 | 14              | 51.9 | 3                  | 11.1 | 1                | 3.7  | 18                       | 66.7 |                    |
| Schooling                                  | Special           | 9  | 4                | 44.4 | 3               | 33.3 | 1                  | 11.1 | 1                | 11.1 | 5                        | 55.5 | 13.07<br>(.169)    |
|  | Technician        | 21 | 7                | 33.3 | 13              | 61.9 | 1                  | 4.8  | 0                | 0    | 14                       | 66.7 |                    |
|  | Bachelor's degree | 50 | 21               | 42.0 | 17              | 34.0 | 9                  | 18.0 | 3                | 6.0  | 29                       | 58   |                    |
|  | Master's degree   | 1  | 0                | 0    | 1               | 100  | 0                  | 0    | 0                | 0    | 1                        | 100  |                    |
|  | PhD               | 1  | 0                | 0    | 0               | 0    | 1                  | 100  | 0                | 0    | 1                        | 100  |                    |

Source: Own development

## Discussion

Based on the objective of determining the association of BS with sociodemographic and occupational characteristics in nursing professionals who provide care to patients with COVID-19, it was found that the highest proportion of participants were female, a similar figure in most studies where between 54 and 86% have been reported <sup>(24, 26-28, 31-35)</sup> and the predominant marital status was single, similar to other studies where figures between 52 and 78% are reported <sup>(35, 36)</sup>. This is perhaps due to the fact that the nursing



profession has been historically linked since its birth to the female gender and still prevails in greater numbers among professionals <sup>(29)</sup>, as for marital status the similarities could be linked to the sociodemographic and personal characteristics of the professionals who participated in the study since the mean age was 26 years as well as in the related studies between 24 and 36 years <sup>(24, 26-28, 31-37)</sup>, considered an age at which, in some countries people are still single.

Regarding the work shift, the shifts with the highest participation in the study were night and day shifts, with almost one third of the sample each; the results reported by other studies regarding the prevalence of the nursing professional in the work shifts varied <sup>(31-37)</sup>. It is possible that factors related to the sampling process and selection of the sample, as well as the characteristics of each health institution in the distribution of human resources in each shift, had an influence.

According to schooling, most participants had a bachelor's degree; other studies reported a higher prevalence in nursing technicians <sup>(35)</sup> and intensive care unit specialists <sup>(32, 37)</sup>. These differences may be attributed to the inclusion criteria of each of the studies, as well as to the COVID area where the measurement instrument was applied: emergency, hospitalization and intensive care unit. The results of the present study reported a length of service of 1.56 years; another study reported a similar figure <sup>(28)</sup>, because both studies were conducted in newly hired nurses for the COVID-19 pandemic.

With respect to SB subscales (burnout, depersonalization and self-fulfillment) in the present study high burnout was found in slightly more of the sample, other studies found higher prevalences with figures from 58 to 72.4% <sup>(24, 28, 35, 37)</sup> and other lower prevalences from 9 to 43% <sup>(27, 30, 31, 32)</sup>. This is possibly due to work demands, the increasing workload causing an increase in pending tasks and inability or difficulty to perform them adequately, as well as to the fact that the studies that reported high prevalences were carried out in nursing professionals working in critical areas such as emergency and intensive care units, where work demands are probably greater.



Nursing personnel showed high depersonalization in slightly more than a quarter, similar results were evidenced in other studies where they reported figures ranging from 25 to 38% <sup>(24, 27, 31, 34)</sup>. Other studies reported higher figures of 50 to 77% <sup>(28, 30, 35, 37)</sup>. This is due to the fact that when emotional exhaustion occurs, it has an impact, generating a negative, insensitive or excessively apathetic response to work activities or to the patients under their responsibility <sup>(20, 30)</sup>.

Regarding high personal accomplishment, high percentages were found in almost four quarters of the nursing staff, with most studies finding low prevalences ranging from 10 to 50% <sup>(27, 28, 30, 31, 34, 37)</sup>. This indicates that the population studied evidenced a sense of self-efficacy, feeling social support and opportunities in the institution to develop professionally, so that they come to have a positive opinion of themselves <sup>(15, 32)</sup>.

The higher prevalence of signs of BS was in the male sex, similar to what has been found in other studies in which men had a higher risk of developing anxiety <sup>(20, 30)</sup>, and there were no significant statistical differences between the sexes. There is no doubt that studies show that when work increases and exceeds the adaptive capacity it can produce emotional, psychological and physical exhaustion, and this increases the risk of presenting emotional exhaustion and if we add risk factors such as heterogeneity in mortality caused by COVID-19, where there are significant differences according to gender, with men having a higher risk compared to women and thus presenting an incidence of SB in the male sex <sup>(19, 31, 32)</sup>.

No association was found between marital status and signs of BS; other authors have indicated that single people could have a greater probability of presenting higher levels of BS and married people lower levels; however, the results have not been congruent <sup>(33,38)</sup>. Perhaps married people have a tendency to be more mature and stable, with mutual support between the couple; involvement with the family could generate a greater capacity to face personal problems and emotional conflicts <sup>(33-37)</sup>.

Likewise, the study found that the evening shift showed greater signs of BS; however, the literature indicates that night shift work or constant rotation between shifts facilitates the presence of this problem <sup>(36)</sup>. Burnout and depersonalization have been higher among personnel working at night <sup>(39, 40)</sup>. The differences are



probably due to the geographic areas where the studies were conducted, given that they were in different countries and states <sup>(24, 41- 43)</sup>. The differences in burnout may be due to the characteristics of the institution where the study sample works, as well as the characteristics of the work schedules, areas of care (emergency, hospitalization and intensive care) and patient load per nurse <sup>(36, 44, 45)</sup>.

## **Conclusions**

Although no association was found with sociodemographic and occupational variables, BS was more frequent in male professionals, divorced professionals and those who worked the evening shift, this situation continues to represent an important problem that can have a negative impact on the care of these patients.

It is concluded that the nursing staff had high burnout, depersonalization and self-realization.

In addition, nurses showed intermediate levels of SB. Therefore, it is necessary to carry out effective interventions to reduce this problem, such as increasing their resilience in order to alleviate nurses' burnout and stressors in the workplace, without neglecting the development of emotional intelligence skills using it as a tool that could work to reduce BS. The involvement of organizational management is important, as it must ensure a healthy workplace, adopt a positive attitude and a harmonious relationship with front-line workers in the mitigation of the COVID-19 pandemic.

## **Conflict of interest**

The authors stated that they have no conflicts of interest.

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