DEPRESSION SYMPTOMS IN NURSING PROFESSIONALS DURING THE COVID-19 PANDEMIC

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ABSTRACT
Objective: to identify depression symptoms in Nursing professionals during the COVID-19 pandemic. Method: a cross-sectional and observational study, conducted with Nursing professionals through an electronic form in the five Brazilian regions. An instrument with general information was used, as well as the Patient Health Questionnaire-9 to identify depression symptoms. The Student’s t hypothesis and Analysis of Variance tests were adopted.
Results: the participants were 3,249 professionals. Of these, 2,092 (64.4%) did not present depression symptoms or presented minimal symptoms; 603 (18.6%) presented moderate symptoms; 330 (10.2%) had moderate to severe symptoms; and 224 (6.9%), severe symptoms. Women, workers from the North region, young adults, single and with an income of up to four minimum wages presented higher depression scores (p<0.05).
Conclusion: the Nursing professionals did not present depression symptoms, or presented mild symptoms of the disease. Variables such as gender, age group, marital status, region of the country, having contact with people infected by COVID-19, and not using masks presented significant differences with depression symptoms.

DESCRIPTORS: Depressive Symptoms; Nursing; Infections by Coronavirus; Pandemic; Mental Health.

SÍNTOMAS DE DEPRESIÓN EN PROFESIONALES DE ENFERMERÍA DURANTE LA PANDEMIA DE COVID-19

RESUMEN:
bjetivo: identificar síntomas de depresión en profesionales de Enfermería durante la pandemia de COVID-19. Método: estudio transversal y observacional, realizado con profesionales de Enfermería por medio de un formulario electrónico, en las cinco regiones de Brasil. Se utilizó un instrumento con información general y el Patient Health Questionnaire-9 para identificar síntomas de depresión. Se adoptaron las pruebas de hipótesis t de Student y Análisis de Variancia. Resultados: participaron 3249 profesionales. De ellos, 2092 (64,4%) no presentaron síntomas de depresión o tuvieron síntomas mínimos, 603 (18,6%) moderados, 330 (10,2%) de moderados a graves y 224 (6,9%) síntomas graves. Las mujeres, los trabajadores de la región Norte, los adultos jóvenes, las personas solteras y con un ingreso de hasta cuatro salarios presentaron puntajes de depresión más elevados (p<0,05). Conclusión: los profesionales de Enfermería no presentaron síntomas de depresión o tuvieron síntomas leves. Variables como el sexo, el grupo etario, el estado civil, la región del país, tener contacto con personas infectadas por COVID-19 y no usar máscaras evidenciaron diferencias significativas con los síntomas de depresión.
DESCRIPTORES: Síntomas Depresivos; Enfermería; Infecciones por Coronavirus; Pandemia; Salude Mental.
INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic, caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), had its outbreak in Wuhan, China, in December 2019, and spread rapidly throughout the world. Up to date, there are more than 111 million confirmed cases in the planet\(^{(1)}\). In February 2020, the Centers for Disease Control and Prevention (CDC) classified the disease as a major threat to public health and, in March of the same year, the World Health Organization (WHO) declared it as a pandemic\(^{(1-2)}\).

Respiratory transmission is the main means of propagation among human beings, in addition to touching contaminated surfaces or objects. The most common symptoms are cough, fever and shortness of breath, occurring between two and 14 days after infection, but there are reports of incubation up to 24 days\(^{(2-3)}\).

The disease is increasing in Brazil, with more than ten million cases in February 2021\(^{(4)}\), leading to an overload of the Brazilian health system, with shortage of human and material resources and equipment, in addition to inadequate managements and deficient budgets\(^{(5)}\). The Unified Health System (Sistema Único de Saúde, SUS) faces overcrowding of hospitals, with lack of beds due to the high demand of patients infected, especially in Intensive Care Units\(^{(6)}\).

This historic-sanitary moment of the pandemic has a direct repercussion on the mental health of people in general, and especially of health workers\(^{(7)}\). In addition, depression among Nursing professionals tends to intensify in the face of the contagious impact of SARS-CoV-2, shortage of masks, fear of the unexpected, and high mortality rate in the category\(^{(8)}\).

Continuous care for patients is a characteristic of Nursing, thus highlighting its importance during this global crisis\(^{(9)}\). However, the working conditions of these professionals commonly include long hours, high stress levels and devaluation of the profession, in addition to constant conflicts and lack of resources\(^{(10)}\).

This scenario became more complex in the pandemic context, considering the vulnerability and exposure of the professionals to contamination by SARS-CoV-2\(^{(11)}\). Therefore, an important aspect consists of the mental health of the Nursing team, as the labor factors generate important psychological impacts, contributing to the increase in the risk of illness\(^{(12)}\).

The growing number of Nursing professionals infected is a cause for concern since they are, on a large scale, responsible for the direct care of infected patients\(^{(10,13)}\). In February 2021, the Federal Nursing Council (Conselho Federal de Enfermagem, COFEN) recorded more than 48,000 confirmed cases and 590 deaths due to COVID-19\(^{(14)}\).

Therefore, the assessment of the repercussions of the COVID-19 pandemic on the mental health of these workers is extremely important\(^{(9)}\), given the long-term effects that mental disorders can bring. Research studies from China, at the beginning of the outbreak, pointed out an increase in the mental involvement of workers on the front line, especially Nursing professionals\(^{(12-13)}\).

Another Chinese study, conducted with nurses, identified a depression rate of 47.1% and the related factors were stress and low quality of family relationships\(^{(15)}\). In addition, there are structural and support deficits to offer adequate assistance to these professionals\(^{(11-12)}\). However, in the Brazilian scenario, the effects of the pandemic on the mental health of Nursing workers are not known, representing itself as a knowledge gap to be filled.

Reflecting on the reality of the health system in the country, especially in relation to
the working conditions of the Nursing professionals and the increased demand, factors that potentially generate stress and consequently depression, there is the following guiding question: Do Brazilian Nursing professionals present depression symptoms during the COVID-19 pandemic?

In order to answer this question, the instrument chosen was the Patient Health Questionnaire-9 (PHQ-9), a scale used worldwide, validated and available in several languages with the objective of assessing the presence of depression symptoms. PHQ-9 is a simple and quick test, recommended for the screening of depressive episodes(16).

Consequently, the objective was to identify depression symptoms in Nursing professionals during the COVID-19 pandemic.

**METHOD**

A cross-sectional and observational study, with a quantitative approach, conducted through an electronic form in the five Brazilian regions. This study is a subproject of the research entitled: “Multinational study on the practice of face mask use among the general population during the COVID-19 pandemic”.

Data collection took place from April 17th to May 15th 2020 by means of messages sent in social media (Facebook, Twitter, Instagram and WhatsApp), through which the professionals were invited by the study team. The link, containing the research information and the form to be filled in, was made available by researchers (mostly nurses) from different regions of the country among their contacts. No time limit was stipulated for answering the form, remaining at the discretion of each participant. All the instruments received were filled out in their entirety.

For sample calculation, the number of 2,336,725 Nursing professionals in Brazil was considered(10). A 5% error margin, 95% confidence interval, 50% prevalence and 80% test power were adopted, culminating in the minimum sample of 385 participants. Sample calculation was for finite populations, considering 50% prevalence due to the absence of prior information on the expected event (depression in Brazilian Nursing professionals) in the scientific literature.

The inclusion criterion was as follows: Nursing professionals aged 18 or over; and the exclusion criterion was the following: foreigners living in Brazil, since the scale used was validated for Brazilian Portuguese; thus, there could be divergences in the understanding of terms and expressions (conceptual, semantic, idiomatic).

The data collection instrument, accessed through Google Forms, included two parts: 1-General information (gender, marital status, age group, professional category, region, monthly income, if their occupation exposes them to COVID-19, if they had contact with people with COVID-19, and mask use); 2-Brazilian version of the Patient Health Questionnaire-9 (PHQ-9).

PHQ-9 has the potential to assess the presence of Major Depressive Disorder (MDD) symptoms, according to the manifestation of four or more symptoms in the last two weeks. However, the clinical diagnosis of depression is performed by a qualified professional(17). The instrument was validated for Brazil with satisfactory validity and reliability levels(16).

The version of PHQ-9 in Portuguese has nine questions that address the following: lack of interest in activities, difficulty sleeping, feelings of failure and disappointment, difficulty concentrating, and thoughts of self-mutilation and death. The Likert-type answer options vary from 0 to 3 points, corresponding to “not at all”, “several days”, “more than
RESULTS

The participants were 3,249 Nursing professionals, mostly technicians (n=2,792/85.9%), women (n=2,930/90.2%) and from the Southeast region (n=1,199/36.9%). Their mean age was 37 years old (SD=11.4), varying between 18 and 85. Of the total, 880 (27.1%) reported direct contact with someone diagnosed with COVID-19 in the past two weeks (Table 1).

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
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</tr>
<tr>
<td>Female</td>
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<td>90,2</td>
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<td>Professional Category</td>
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<tr>
<td>Nurse</td>
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<td>14,1</td>
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<td>Brazilian Regions</td>
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<td>North</td>
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<td>1151</td>
<td>35,4</td>
</tr>
<tr>
<td>Midwest</td>
<td>365</td>
<td>11,2</td>
</tr>
</tbody>
</table>

Table 1 - Characterization of the Nursing professionals according to individual and professional variables (n=3,249). Niterói, RJ, Brazil, 2020 (continues)
In the analysis of the answers to PHQ-9, the depression symptoms were reported with some frequency by the Nursing professionals, some of the most frequent being related to little interest, sleep and tiredness (Table 2).

Tabela 2 - Distribuição de frequência das respostas dos profissionais de enfermagem (n=3249) aos itens do Patient Health Questionnaire-9 (PHQ-9). Niterói, RJ, Brasil, 2020 (continues)

<table>
<thead>
<tr>
<th>PHQ-9 items</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half of the days</th>
<th>Almost every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Little interest or pleasure in doing things</td>
<td>948 (29,2)</td>
<td>1388 (42,7)</td>
<td>493 (15,2)</td>
<td>420 (12,9)</td>
</tr>
<tr>
<td>2 - Feeling down, depressed, or hopeless</td>
<td>1017 (31,3)</td>
<td>1511 (46,5)</td>
<td>360 (11,1)</td>
<td>361 (11,1)</td>
</tr>
</tbody>
</table>
3 - Difficulty falling or remaining asleep or kept sleeping more than the usual 844 (26,0) 1371 (42,2) 404 (12,4) 630 (19,4)
4 - Feeling tired or having little energy 716 (22,0) 1555 (47,9) 431 (13,3) 547 (16,8)
5 - Poor appetite or overeating 920 (28,3) 1221 (37,6) 437 (13,5) 671 (20,7)
6 - Feeling bad about yourself—or that you are a failure or have let yourself or your family down 1756 (54,0) 914 (28,1) 256 (7,9) 323 (9,9)
7 - Trouble concentrating on things, such as reading the newspaper or watching television 1170 (36,0) 1313 (40,4) 355 (10,9) 411 (12,7)
8 - Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual 1916 (59,0) 896 (27,6) 208 (6,4) 229 (7,0)
9 - Thoughts that you would be better off dead or of hurting yourself in some way 2979 (91,7) 181 (5,6) 43 (1,3) 46 (1,4)

Considering PHQ-9, 2,092 (64.4%) professionals did not present depression symptoms or presented minimal symptoms; 603 (18.6%) presented moderate symptoms; 330 (10.2%) had moderate to severe symptoms; and 224 (6.9%), severe symptoms. The general score of depression symptoms was 8.4 (SD=6.2), varying between 0 and 27 points.

When comparing the mean of the general score of depression symptoms and the independent variables, a statistically significant difference was obtained for gender, Brazilian regions, age, marital status, income, contact with someone diagnosed with COVID-19, and mask use (p<0.05) (Table 3).

Table 3 - General score of depression symptoms and individual and professional variables (n=3,249). Niterói, RJ, Brazil, 2020 (continues)
Female Nursing professionals presented a higher mean score of depression symptoms than men (p=0.000); likewise, workers in the North region also had higher rates in relation to other regions (p=0.048). Higher scores were also found among young adults, single and with a monthly income of up to four wages (p=0.000).

The professionals who had contact with people with COVID-19 in the last two weeks presented a higher score for depression symptoms when compared to those who had no contact (p=0.001). The professionals who did not use masks presented higher scores for the depressive symptoms, when compared to those who did use masks (p=0.011).
Most of the participants did not present depression symptoms or had mild symptoms. However, it was verified that female professionals, aged between 18 and 24 years old, single, and living in the North region presented a higher score of depression symptoms.

The participants were mostly women, a fact that is compatible with the profile of the profession, characterized by the female historical legacy, which represents more than 85% of the workforce in Brazil\textsuperscript{(18)}. In addition, the study revealed that women presented a higher mean in the score for depressive symptoms, corroborating with the World Health Organization, which points out that depression is not only more prevalent in women than in men, but that it also tends to be more persistent\textsuperscript{(19)}.

The mean of the general score of depression symptoms found is close to the cutoff point for the moderate depression symptoms, according to a study that assessed the mental health of 83 nurses in Portugal and found that approximately 38.6% of the participants presented moderate and severe symptoms, in addition to the possible existence of psychological distress. There was also a relation between loss of emotional-behavioral control, depression, distress and well-being with the gender variable, indicating that female nurses presented lower levels of mental health than men\textsuperscript{(20)}, in consonance with the results found.

A higher score of depression symptoms in single individuals stood out, differing from an integrative review study, which revealed that married professionals, mainly women, develop higher stress levels that can trigger depression, due to the extensive work and household demands, generating physical and mental overload\textsuperscript{(21)}.

Age was signaled as an important factor for mental health, in the sense that young individuals were the most affected. A research study that evaluated factors associated with occupational stress in 126 Nursing professionals pointed out that there are higher rates of anxiety and depression symptoms related to emotional exhaustion in younger professionals, suggesting a relationship between age and experience\textsuperscript{(22)}, consistent with the current findings.

The higher prevalence of professionals in the Southeast region is compatible with the clear hegemony of this region regarding professional training in the area, with an important concentration of workers in the states that comprise it, while the North and Northeast regions suffer from a shortage of these professionals\textsuperscript{(23)}. However, the professionals in the North region presented a higher score of depression symptoms, precisely where the highest proportional rate of deaths due to COVID-19 is concentrated in Brazil, totaling, in February 2021, 140 deaths per 100,000 inhabitants\textsuperscript{(4)}.

This study verified that contact with people with COVID-19 and not using masks were also statistically significant. A result that differs from the study carried out in Austria with 4,126 participants, where the use of masks was associated with greater stress, anxiety and depression levels\textsuperscript{(24)}.

Approximately one third of the professionals stated having had direct contact with someone diagnosed with COVID-19. It is known that, despite the professional duty to care for the community during the pandemic, many professionals have had concerns about their work and its impact on themselves. In particular, the risk of being infected and the restrictions on personal freedom can directly affect the mental health of these people\textsuperscript{(25)}, reinforcing the relevance of studies in this directive.

Depressive symptoms were identified among Nursing professionals. Thus, the psychological distress presented by these professionals can be accompanied by a chain of symptoms such as muscle pain, imbalance in the weight cycle, tension, anguish, insomnia, anxiety and occupational stress, as indicated in the literature\textsuperscript{(26)}.

Approximately half of the professionals reported having little interest or pleasure in doing things for several days, this being one of the symptoms of depression, corroborating
with international data from a meta-analysis on the psychological effects of the COVID-19 pandemic among health professionals. Among the 33,062 participants, the prevalence of depression was 22.8% with differences in gender and occupation, with female nurses showing higher rates of psychological distress symptoms, compared to men and medical teams\(^{(27)}\), highlighting the importance of the current findings.

Most of the professionals answered that they felt tired or with little energy, corroborating a Brazilian study that evaluated the most frequent feelings after a month of care, for Nursing professionals working on the front line against COVID-19. Exhaustion and wear out were the most mentioned feelings, in addition to stress related to the increase in the demand and in the number of deaths\(^{(26)}\).

The increase in the demand for health services during the pandemic exerted a negative influence on the work of the health professionals. Thus, in line with the current data, a research study conducted with 2,707 professionals identified work-related tiredness or exhaustion in 51.4% of them, with an association with exposure to COVID-19\(^{(29)}\).

Nursing professionals are at higher risk for suicide than the general population given the stressful characteristics, such as workload, loneliness, lack of autonomy, low wages and negative outcomes on patients’ prognosis\(^{(30)}\). Such factors are in line with the results regarding the item that deals with the desire for self-harm or thinking about being dead. It is worth mentioning that this item identifies the risk of suicidal ideation when answered positively, as well as the need for assistance interventions. Mental health issues have been attracting attention, especially in this pandemic moment. The daily lives of the Nursing professionals in their activities are permeated by concerns, uncertainties, tension and anguishes. Thus, it becomes imperative to articulate mental health, social and occupational conditions.

As a study limitation, its cross-sectional design stands out, which does not allow for casual inferences. In addition, the depression symptoms identified cannot always be ratified in the assessment by the mental health professionals to be carried out in detail, considering various aspects of the individual’s life, which are not considered in a single scale applied virtually. However, this study provides valuable information about the Nursing professionals in the psychological responses during the COVID-19 pandemic in Brazil.

**CONCLUSION**

The Nursing professionals did not present depression symptoms, or presented mild symptoms of the disease, according to the PHQ-9 scale. Variables such as gender, age group, marital status, region of the country, having contact with people infected by COVID-19, and not using masks had a statistically significant difference with the mean score of depression.

Managerial and assistance actions are needed to provide regular psychological support as a prevention strategy to deal with the mental distress expressed by some professionals during the pandemic.

Considering the importance of these professionals and the Nursing workforce, valuing them and providing better working conditions can be effective in preventing illness and absenteeism during and after the pandemic.

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