

Mortality of nursing professionals by Covid-19 in Brazil in the first half of 2020

Mortalidade de profissionais de enfermagem pelo Covid-19 no Brasil no primeiro semestre de 2020

Mortalidad de profesionales de enfermería por Covid-19 en Brasil en el primer semestre de 2020

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RESUMO

Objetivo: Analisar a mortalidade de profissionais de enfermagem (PE) pelo COVID-19 no Brasil no primeiro semestre do ano de 2020. **Método:** Trata-se de um estudo exploratório, descritivo e de abordagem quantitativa. Os dados foram extraídos junto ao Observatório da Enfermagem organizado do Conselho Federal de Enfermagem. **Resultados:** Foram identificados 18.857 casos reportados de PE infectados pelo Covid-19 e o universo de 194 registros de óbitos destes com taxa de letalidade de 2,44%. As maiores preponderâncias dos registros de óbito identificados foram de 40,7% (n=79) na região Sudeste (SE), 20,6% (n=40) no estado de São Paulo (SP), 66% (n=128) do sexo feminino e 25,8% (n=50) pessoas que pertenciam a faixa etária entre 51 a 60 anos. **Considerações Finais:** Por meio da presente pesquisa foi identificado aumento na frequência de registros de óbito de PE no recorte geográfico e histórico analisados.

Descritores: Mortalidade; Profissionais de Enfermagem; Infecções por Coronavírus; Epidemiologia.

ABSTRACT

Objective: To analyze the mortality of nursing professionals (PE) by COVID-19 in Brazil in the first half of 2020. **Method:** This is an exploratory, descriptive study with a quantitative approach. The data were extracted from the Nursing Observatory organized by the Federal Nursing Council. **Results:** 18.857 reported cases of PE infected with Covid-19 were identified and the universe of 194 death records of these with a lethality rate of 2.44%. The largest preponderances of the death records identified were 40.7% (n=79) in the Southeast (SE), 20.6% (n=40) in the state of São Paulo (SP), 66% (n=128) females and 25.8% (n=50) people who belonged to the age group between 51 and 60 years. **Final Considerations:** Through this research, an increase in the frequency of PE death records was identified in the analyzed geographical and historical context.

Descriptors: Mortality; Nursing professionals; Coronavirus infections; Epidemiology.

RESUMEN

Objetivo: analizar la mortalidad de los profesionales de enfermería (EP) por COVID-19 en Brasil en el primer semestre de 2020. **Método:** Este es un estudio exploratorio, descriptivo con un enfoque cuantitativo. Los datos fueron extraídos del Observatorio de Enfermería organizado por el Consejo Federal de Enfermería. **Resultados:** se identificaron 18.857 casos reportados de PE infectados con Covid-19 y el universo de 194 registros de defunción de estos con una tasa de mortalidad del 2,44%. La mayor preponderancia de los registros de defunción identificados fue 40.7% (n=79) en el sudeste (SE), 20.6% (n=40) en el estado de São Paulo (SP), 66% (n=128) mujeres y 25.8% (n=50) personas que pertenecían al grupo de edad entre 51 y 60 años. **Consideraciones finales:** A través de esta investigación, se identificó un aumento en la frecuencia de los registros de defunciones de PE en el perfil geográfico e histórico analizado.

Descriptores: Mortalidad; Profesionales de enfermería; Infecciones por coronavirus; Epidemiología.

ORIGINAL

Introduction

In December 2019, an outbreak of pneumonia was identified which is believed to have been caused by a new strain of Coronavirus, its onset being detected in the city of Wuhan, Hubei province in China, spreading rapidly to at least twenty-four (24) other nations.¹ This disease is closely related to the phenomenon of people who were exposed, as they are in a certain market that sold seafood, live animals, among other products.²⁻³

On December 29, 2019, a hospital located in Wuhan admitted four (04) people with pneumonia and acknowledged that they had worked at the Huanan Wholesale Seafood Market.⁴ This hospital reported this phenomenon to the Disease Control Center (CDC-China) and Chinese field epidemiologists (FETP-China) identified additional patients who were linked to the incident in the market and, as of December 30, competent health authorities in Hubei province notified this cluster to the Chinese CDC.⁴

The term “corona” comes from the Latin and has as a crown meaning, because in conducting electron microscopy, these viruses are found in the form of circles, presenting spikes that end in small drops, or droplets, appearing on its surface, looking like a crown.⁵ Coronavirus is constituted as an RNA virus with a wide distribution among humans, other types of mammals and even birds, and thus bats and humans are believed to be the hosts.¹

Other researchers speculate that scaly-type anteaters, called Pangolin that inhabit tropical areas of Asia and Africa, are the intermediate host¹. The disease that the virus produces is COVID-19, where the acronym “CO” has a corona meaning, “VI” is used to designate viruses and the letter “D” refers to the disease.⁶ In the past, this disease was called “2019 new Coronavirus” or “2019-nCoV”, while the Coronavirus Study Group of the International Virus Taxonomy Committee proposed that the virus be designated as SARS-Cov-2.⁶⁻⁷

Through phylogenetic analysis and genomic sequencing, it was verified that it is a beta-coronavirus (Beta-CoVs) that caused an epidemic in China in 2003, as it is of the same subgenus of the severe acute respiratory failure syndrome (SARS), and that caused the same picture in the Middle East in 2012, in relation to the Middle East respiratory syndrome (MERS).⁸ Its viral genome was sequenced quickly, demonstrating that it was between 75% to 80% identical to SARS-CoV, in addition to being more closely related to bat coronavirus.⁹

The World Health Organization (WHO) on January 30, 2020, declared the outbreak to be a Public Health Emergency of International Importance (ESPII), due to reports made by Chinese health authorities, after confirmation of thousands of cases and hundreds of deaths related to the new coronavirus COVID-19.¹⁰ The complexity and magnitude of this public health problem is such that it is said that its spread is growing far beyond the capacity of health services to respond effectively to European nations.¹¹

At that time, a series of actions and policies were adopted in Brazil, culminating on January 22, 2020 in the foundation of the Emergency Operations Center in Public Health (COE-COVID-19) of the Ministry of Health (MS), with the objective of guiding actions in response to the public health emergency and seeking coordinated action within the scope of the Unified Health System (SUS).⁴ An important legislative document developed as a way to support society against COVID-19 was Law No. 13,979, of February 6, 2020,

which provides for measures to deal with the public health emergency of international importance resulting from the coronavirus responsible for the 2019 outbreak.¹²

In this sense, the need to develop strategies and methodologies to combat and control it is pointed out in several studies, in addition to protecting health professionals and society, aiming to minimize its transmission and lethality.¹³ In the care process for people affected by this disease, it was found that the most frequent comorbidities in patients who died were arterial hypertension (AH), diabetes mellitus (DM), respiratory diseases, cardiovascular disease and the same age group or over 70 years.¹⁴

In this sense, it was constituted as objective of the present research, to analyze the mortality of nursing professionals by COVID-19, in the historical section formed by the “first semester of the year 2020” in the geographical section formed by “Brazil”.

Method

This is an exploratory, descriptive study with a quantitative approach. For the acquisition of the data necessary for the development of this research, they were extracted from the “Nursing Observatory” present on the website [<http://observatoriodaenfermagem.cofen.gov.br/>], managed by the Federal Nursing Council (COFEN) , accessed on the 12th of June 2020 at 11:30 pm.

With the objective of monitoring this disease impact on the professional nursing category, COFEN in May 2020, through the “Crisis Management Committee - COVID - 19”¹⁵, launched the Nursing Observatory, which presents daily updates of your evolution.

The Crisis Management Committee within the scope of the Cofen System / Regional Nursing Councils (CORENs), was created with the objective of managing issues inherent to crises related to the COVID-19 Pandemic, officially declared by WHO, following up daily situations related to the pandemic, aiming at lowering recommendations and emergency action strategies, considering the forecasts of the Ministry of Health and Health Authorities.¹⁵

As a means of acquiring subsidies for the promotion of the Nursing Observatory, COFEN also implemented a form for the Information of Nursing Professionals with COVID-19, made available online at the address [https://docs.google.com/forms/d/e/1FAIpQLSd_UTZBDglkMU4H7r0jErSSWo6o3YSZ4O4AT_5RHD5Xa1vTdw/closedform].¹⁶

Aiming to enhance the analysis process of the acquired data, the Nursing Profile Survey in Brazil was also used, carried out by the Oswaldo Cruz Foundation (FIOCRUZ) of the Ministry of Health (MS), on the initiative of the Federal Nursing Council (COFEN), being understood while the most extensive survey of a profession ever conducted in Latin America, it presents an accurate and detailed diagnosis of the situation of nursing professionals working in Brazil.¹⁷

After acquiring the data necessary to build this research, they were organized using Microsoft Excel 2016® software, which belongs to the Microsoft Office 2016® for Windows® package. Analytical categories were generated, “temporal evolution”, “Brazilian regions”, “federative units (UF)”, “sex” and “age group”.

Descriptive statistical analysis was implemented, making it possible to carry out percentages (%), arithmetic mean and lethality rate (TL). The results generated were exposed by means of two (02) figures and three (03) explanatory tables. The authors declare no conflicts of interest.

Results

In the process of organizing and analyzing the data, 18,857 reported cases of PE were identified that had a positive diagnosis of Covid-19 and the universe of 194 death records of these professionals until 06/12/2020. The calculated TL was 2.44%. Table 1 shows the situation of PE infected by Covid-19 in Brazil, in the first half of 2020.

Table 1 - Overview of the situation of professionals infected by Covid-19 in the first half of 2020, in Brazil (n = 18,796):

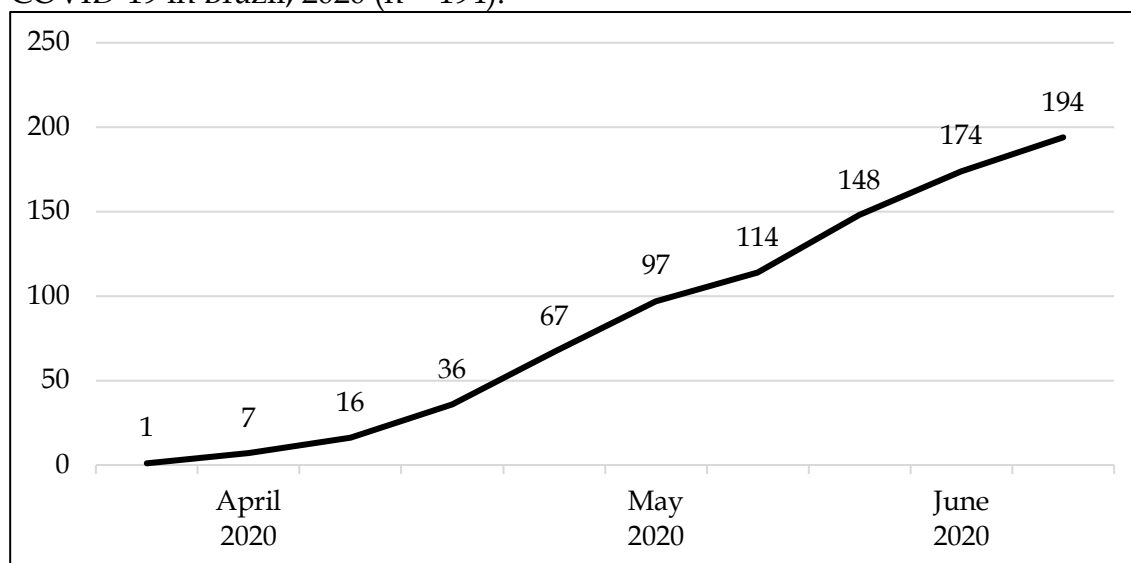
	Confirmed	Unconfirmed	Suspected	Total
Situation	f(%)	f(%)	f(%)	f(%)
Quarantine	6.410 (95.5)	1.133 (100)	10.721 (97.9)	18.264 (97.2)
Interned	136 (2)	-	202 (1.8)	338 (1.8)
Deceased	165 (2.5)	-	29 (0.3)	194 (1)
Total	6.711 (100)	1.133 (100)	10.952 (100)	18.796 (100)

Source: Nursing Observatory, COFEN, 2020.

* Data updated until 06/12/2020.

6,711 confirmed cases were identified, in addition to 1,133 non-compliant cases and 10,952 suspected Covid-19 cases. In relation to the NP that are in quarantine, 18,264 records were identified, in addition to 338 that were hospitalized and 194 death records. In figure 1, the time evolution of the PE mortality records by Covid-19 is shown in the geographical and historical analysis.

Figure 1 - Temporal evolution of the mortality of nursing professionals by COVID-19 in Brazil, 2020 (n = 194): *

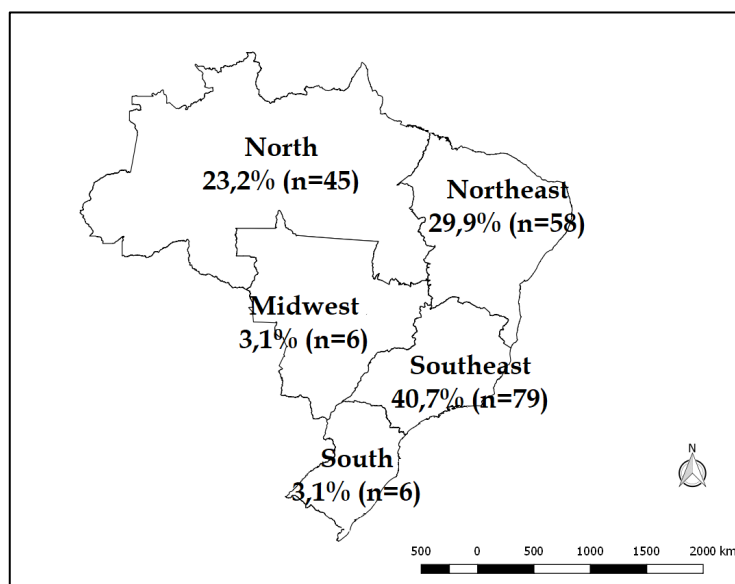


Source: Nursing Observatory, COFEN, 2020.

* Data updated until 06/12/2020.

When analyzing the PE mortality by Covid-19 by Brazilian regions, it was possible to identify that the southeast (SE) registered the largest preponderance with 40.7% (n = 79) of the records and the central-west (CO) and south (S) the smallest, each with 3.1% (n = 6) as shown in figure 2.

Figure 2 - Mortality of nursing professionals by Covid-19 by regions in Brazil, 2020 (n = 194): *



Source: Nursing Observatory, COFEN, 2020.

* Data updated until 06/12/2020.

When analyzing the mortality of PE by COVID-19, in relation to the federative units (UF) it was found that the state of São Paulo (SP) registered the highest preponderance with 20.6% (n = 40), and the states of Espírito Santo (ES), Piauí (PI), Paraná (PR), Rio Grande do Norte (RN), Roraima (RR) and Tocantins (TO) each accounted for only one case. The states of Mato Grosso do Sul (MS) and Sergipe (SE) did not record any occurrence of PE mortality by Covid-19, as shown in table 2.

Table 2 - Mortality of nursing professionals by Covid-19 in Brazil, 2020 (n=194):*

UF	f	%	Mean
Sao Paulo	40	20,6	7,2
Rio de Janeiro	36	18,6	
Pernambuco	26	13,4	
Amapá	16	8,2	
Amazonas	12	6,2	
Ceara	11	5,7	
Pará	8	4,1	
Alagoas	6	3,1	
Maranhao	6	3,1	
Paraiba	4	2,1	
Rondônia	4	2,1	
Acre	3	1,5	
Bahia	3	1,5	
Santa Catarina	3	1,5	
Distrito Federal	2	1	
Goiás	2	1	
Minas Gerais	2	1	
Mato Grosso	2	1	
Rio Grande do Sul	2	1	
Espirito Santo	1	0,5	
Piaui	1	0,5	
Paraná	1	0,5	
Rio Grande do Norte	1	0,5	
Roraima	1	0,5	
Tocantins	1	0,5	
Mato Grosso do Sul	0	0,0	
Sergipe	0	0,0	
Total	194	100	

Source: Nursing Observatory, COFEN, 2020.

* Data updated until 06/12/2020.

Regarding mortality by sex, it was identified that the largest preponderance composed of 66% (n = 128) was female PE. Regarding the age group of NP who had a death record by Covid-19, the largest preponderance composed of 25.8% (n = 50) were between 51 and 60 years old, as shown in Table 3.

Table 3 - Mortality of nursing professionals by Covid-19, by sex and age group in Brazil, 2020 (n = 194): *

Sex	f	%
Women	128	66
Men	66	34
Age Range		
20 to 30 years	7	3.6
31 to 40 years	41	21.1
41 to 50 years	49	25.3
51 to 60 years	50	25.8
61 to 70 years	36	18.6
71 to 80 years	11	5.7
Total	194	100

Fonte: Observatório da Enfermagem, COFEN, 2020.

* Dados atualizados até o dia 12/06/2020.

Discussion

Regarding the increase in the frequency of PE mortality records by Covid-19, it is supported by studies and research carried out, when it is argued that they constitute themselves as the category of the health area that is most susceptible, when compared to others, in relation to accidents at work, due to the greater number of exposures involving, for example, biological material (s).¹⁸

It is also understood that the high exposure of NP is directly related to the fact that it is the largest group of professionals constituting those who develop health services, having more direct contact in care care with patients, in all hospital sectors and in the hospital. primary health care (ABS), as well as the frequency and different types of procedures implemented.¹⁹

When analyzed the greater preponderance of records of cases of PE mortality by Covid-19 in the Southeast (SE) of Brazil, it is in agreement with what is proposed by the scientific literature when it is argued that the region presented, accounts for almost half of all contingent of PE in Brazil, operating in these states, that is, approximately 49%.^{20-21,23}

On the other hand, it can be seen that the SE region constitutes itself as the most populous when compared to the other constituents of the Brazilian nation, in addition to having presented in recent years, greater expansion in the foundation in undergraduate nursing courses primarily by the private sphere , stimulated by federal programs to support access and permanence.²¹⁻²²

Regarding the greater preponderance of PE mortality records by Covid-19 in the state of São Paulo (SP), it also found support in the scientific literature, when it is argued that the referred federative unit (UF) together with Rio de Janeiro (RJ) strengthen the hegemonic position of the SE region, the workforce (FT) being approximately 690 thousand professionals from Rio de Janeiro and São Paulo.^{20,22-23}

In the last research that had as its objective, to develop the profile of the professional category of nursing, requested by COFEN and developed by the Oswaldo Cruz Foundation (Fiocruz) of the Ministry of Health (MS), the results obtained reinforced that the concentration of the workforce was found identified with large urban centers, with a greater predominance of professionals living near the capital, totaling approximately 56.8% and in relation to those in the interior, with 40.9%.^{20,23}

With regard to the greater preponderance of female PE having a death record by Covid-19, it is also in common agreement with what is established by scientific literature, since, for many decades, the health sector is structural and historically, female.²² In this way, the nursing category, by tradition and culture, has always contributed to this process, understood as “feminisation of health”.^{20,22-23}

The nursing team is predominantly female, that is, approximately 85.1%. However, there is an increasing presence of approximately 14.4% male professionals, which means affirming the emergence of a new trend, which can be understood as the process of “masculinization in the category”.²²⁻²³

A study carried out in the 1980s by Cofen already pointed to a hegemonic female contingent, however, it also pointed to a slight increase in the male workforce within the profession.^{20,22}

With regard to the greater preponderance of PE mortality records that were in the age group of 51 to 60 years, it did not find support in the scientific literature, when it is argued that the largest contingent of professionals are between 31-35 years old, making approximately 20.3% (n = 366,165).^{20,22-23}

Professionals aged between 51-60 years old can be classified as those who are in the fourth (4th) stage, defined as “professional slowdown”, as they are those people who already selectively seek to remain in activities, jobs and jobs that guarantee their retirement. In this way, they no longer allow themselves to venture into jobs, jobs or even new activities or sudden turns in their working life.²²⁻²³

For NP members belonging to this age group, the change, if it occurs, will be encouraged by choices or by personal interests and expectations of achievement or comfort and security of a personal type. For example, the realization of a post-graduation *lato sensu* or *stricto sensu*, that is, if applicable, a master's degree, a doctorate or even a post-doctorate.²⁰⁻²³

In the case of the category of nursing technicians (NT), it is also proposed by some researchers, the possibility of a new insertion in the professional field, being the same developed in the health sector itself, or even outside it.²⁰⁻²³ The category of NP that had a death record by Covid-19 was not identified by this research, however it is possible that it is formed by nursing technicians (NT) or nursing assistants (NA), because they constitute the largest labor contingent of workers in this category.²¹⁻²²

On the other hand, it is also identified with the scientific literature, as a predisposing factor of vulnerability of the nursing team to reduced adherence, regarding the difficulty of adapting the use of personal protective equipment (PPE), the inadequacy of equipment, the demotivation, work overload, inadequate physical structure, absence or inaccessibility of equipment for use, in addition to reduced knowledge in relation to occupational risks.²⁴

Thus, it is important to remember what is supported by Regulatory Standard 6 (NR-6), related to Personal Protective Equipment (PPE) and also, any device or product, for individual use used by the worker, intended to protect against risks likely to threaten safety and health at work.²⁵

Another important document related to the subject under analysis is the Resolution of the Collegiate Directorate number 42 (RDC-42) of the National Health Surveillance Agency (ANVISA), which provides for the mandatory provision of alcoholic preparation for antiseptic friction of the hands, by health services of the country.²⁶

Another factor that makes the professionals of the nursing team highly vulnerable is related to the fact that this important category of workers remains a longer time in integral and uninterrupted care for the patient, in the various environments of the health sector, placing them in the front line in the fight against Covid-19.²⁷

Phenomena related to exhaustive working hours, the absence of care protocols in numerous institutions and the reduced availability of PPE, are constituted as realities verified in daily work²⁶, these being some of the main factors that have a direct and indirect impact on quality of life (QOL) of nursing professionals.²⁷⁻²⁹

As a way of providing nursing care and assistance to meet the numerous demands of users of health services, the work process is also available during the night, weekends and holidays²⁸⁻³⁰, these factors being understood as potentializers for the generation of diseases, reduction of QOL, deterioration of health, which enhances body aging.²⁹⁻³¹

In the case of Covid-19, it also has an impact on the health of professionals who carry out their work activities in the health sector. Its complexity and magnitude are such that, according to some researchers, emotional and psychological disorders, such as anxiety, depression and stress, have already been identified in health professionals who worked in Wuhan province in Hubei, China, where the outbreak was first identified.³²

Conclusion

Through this research, an increase in the frequency of PE mortality records by Covid-19 was observed in the analyzed geographical and historical profile. Despite the limitations existing in the construction of the present production, it presents contributions to a better understanding of the researched phenomenon, unveiling the possibility of permeating the implementation of more in-depth studies on this theme.

The phenomenon of PE mortality due to Covid-19 is related to several issues, such as, for example, the complexity of the disease and the lack of knowledge of combat and control methodologies, the reduced availability of PPE by employing institutions, the high burden -time of daily work, the high number of patients to be treated, the small number of professionals institutionally organized for care, among others.

An important measure aiming to prevent the mortality of PEs belonging to the highest age groups or, due to having illnesses and / or comorbidity (s), would be their transfer or relocation to other institutional sectors, with patients who are at lower risk of transmissibility, in addition to providing better

working conditions.

Regarding the underreporting of cases of PE mortality by Covid-19, it is understood that it may be taking place in relation to the difficulty of making its diagnosis, due to the financial value for implementing the coproductory tests, based on and the economic reality of each UF or municipality. On the other hand, the fact of underreporting may be related to the time it takes to access all the information in each case, or even the difficulty in accessing and registering it by the professional who notifies this phenomenon.

The large flow of people who are currently dying due to Covid-19, makes it impossible to organize the quality of information related to the mortality records, which de-potentializes the real notification of all cases. The reduced number of professionals responsible for the registration of mortality cases by Covid-19 is also a reality that hinders and often makes its correct processing unfeasible.

On the other hand, Covid-19's PE mortality record also shows weakness, due to filling in the death certificate (DO) with inconsistencies in your body, such as the presence of the number of the international disease classification (ICD)) is often not correct, or even, if he presents himself questioned, that is, "Covid-19?".

Other studies and research that will broadly address the complex and noisy phenomenon of NP mortality by Covid-19 should be encouraged, as a way of reducing its impacts with the professional category of nursing, and by extension, with society.

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