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Analysis of the epidemiological profile of deaths by Covid 19 in the state of Pernambuco

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Abstract: The aim of this study is to describe the epidemiological profile of deaths in Pernambuco due to COVID-19 in the period 2020 and 2021. This is a descriptive cross-sectional epidemiological study, with a quantitative approach, whose data were extracted through the secondary database of the Strategic Health Surveillance Information Center of Pernambuco (CIEVS/PE). As results, n=19,893 cases were presented, they died reaching 3.17% of the total. The city of Recife represented 27.62% of deaths in the state of Pernambuco. The brown race presented 55.57% of the population that evolved death. In the age group 70-79, it was the most prevalent in deaths with 24.19%. The sex with the highest incidence was the male with 53.68%. In this sense, it is suggested that the measures to contain the virus be maintained, and that vaccination continue to be encouraged, to avoid a third wave and thus more people have their lives reaper.

Keywords: Covid 19. Mortality. Epidemiological profile

1. Introduction

In December 2019, an outbreak of pneumonia of unknown origin occurred in Wuhan City, Hubei Province, China. This new severe acute respiratory syndrome, caused by coronavirus 2 (SARS-CoV-2) was named Coronavirus Disease 2019 (COVID-19). In March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic.

As of December 4, 2020, data have already shown that more than 64 million confirmed cases and 1,500,614 deaths worldwide have been recorded; and in Brazil 6,487,084 cases and 175,270 deaths (CAMPOS; PIGLET, 2021).

COVID-19, an infectious disease caused by The Coronavirus of Severe Acute Respiratory Syndrome (SARS) - (SARSCoV-2), was declared a pandemic in March 2020 by the OMS. In April 2021, Brazil reached the mark of 400,000 deaths associated with COVID-19. With the percentage of vaccinated people growing, transmission slows down in most states of the union. However, there was an increase in the number of hospitalizations of young patients and the rapid evolution of cases for intubation and mechanical ventilation (BRASIL, 2021).

COVID-19 occurs in three phases, including initial infection, pulmonary phase and hyperimmune phase, which is characterized by a hyperinflammatory response initiated from the 10th day of the course of the disease and may cause target organ lesions (CIACCIO; AGNELLO, 2020).

The treatment applied to patients with COVID-19 consists of antiviral and immunomodulatory drugs, clinical characteristics of patients, such as age and presence of comorbidities, are risk factors for worsening the pathology (BERLIN; Gulick, Gulick, MARTINEZ, 2020).

The pandemic caused by COVID-19 reached various social classes, however the most deprived populations were affected more intensely, considering that the poorest populations are more exposed to having chronic conditions, which puts them at higher risk of mortality associated with COVID-19 (DOURADO *et al.*, 2021).

In Pernambuco it was not different from the other regions, 625,561 cases of COVID -19 were recorded, 54,301 severe and 572,007 were mild, which are distributed in all 184 municipalities of Pernambuco, in addition to the archipelago of Fernando de Noronha. Among these 19,893 died (SES PE, 2021).

In view of the above, the importance of conducting this

study, in addition to seeking the acquisition of knowledge about the theme, knowing who are the affected individuals, what the profile, which risk factors, thus, through this information contribute to the formation of strategies and actions to prevent diseases of Coronavirus infection. With the explanation, the aim of this study is to describe the epidemiological profile of deaths that occurred in Pernambuco due to COVID-19 in the period 2020 and 2021.

2. Methodology

This is a cross-sectional descriptive epidemiological study, with a quantitative approach, whose data were collected through the secondary database of the Center for Strategic Health Surveillance Information of Pernambuco (CIEVS/PE). The population consisted of death records due to COVID-19/SARS in Pernambuco from 2020 to 2021. CIEVES provides information that can serve to support objective analyses of the health situation, evidence-based decision-making and development of health action programs. The variables studied were: gender; age group, race, municipality of death.

A Database was built in the Microsoft Excel 2016 Program with the variables included in the study. For the analysis of these data, percentage calculations were used to observe the dispersion among the collected variables, analyzed by simple percentage. The information was analyzed through the Microsoft Excel 2016 program for data formatting.

3. Results and Discussion

During the period from January 2020 to October 18, 2021, n=626,308 confirmed cases of COVID-19 in the state of Pernambuco were observed. Of the n=19,893 cases, death died reaching 3.17%. The municipality with the highest number of deaths recorded was in the city of Recife, characterizing 27.62% (n=5,495) followed by Jaboatão dos Guararapes with 8.66% (n=1,723) (Table 1).

Table 1. Distribution of deaths by race in COVID-19

Race	n	%
White	4192	21,07
Black	799	4,01
Yellow	265	1,33

Brown	11055	55,57
Indigenous	24	0,12
White or ignored	3.558	17,88
TOTAL	19.893	99,98

Source: SEVS/CIEVS-PE. Oct 17, 2021.

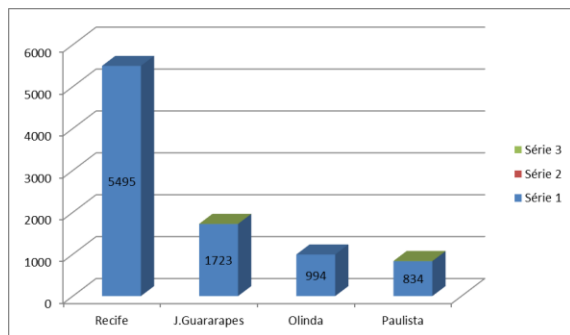


Figure 1. Distribution of cases of deaths due to COVID-19 by municipalities of Pernambuco with the highest infection rate in the period 2020 to 2021. Source: SEVS/CIEVS-PE. Collection: 17. Oct.2021

Regarding the age group of 70-79, it was the most prevalent in deaths with 24.19 (n=4,814), followed by 80 and more with 23.31% (n=4,639) - (Table 2).

Table 2. Distribution of deaths by age group by quantity and percentages

AGE GROUP	n	%
0-9	71	0,35
10-19	44	0,22
20-29	234	1,17
30-39	847	4,25
40-49	1.700	8,54
50-59	3.160	15,88
60-69	4.384	22,03
70-79	4.814	24,19
80 AND MORE	4.639	23,31
TOTAL	19.893	99,94

Source: SEVS/CIEVS-PE. Oct 17, 2021.

The sex with the highest rate was male with 53.68% (n=10679) (Figure 1).

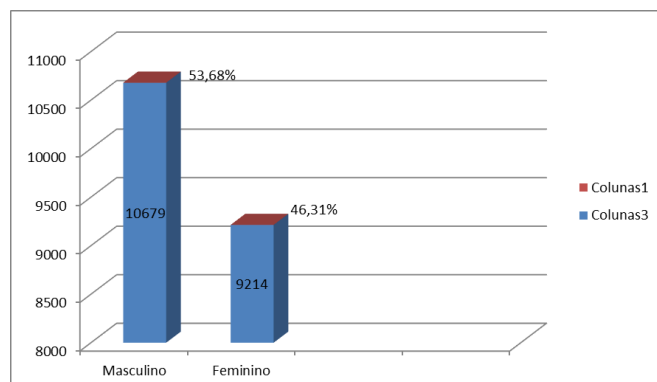


Figure 2. Proportion of death by sex in COVID-19. Source: SEVS/CIEVS-PE. Oct 17, 2021.

Since the beginning of the first cases of COVID-19 in Brazil, hospitalization for SARS has exceeded the expected, with the gradual increase in hospitalizations, the lack of adequate information regarding the etiological agent of hospitalizations and the predominance of cases among the elderly, and the incidence of COVID-19 cases, caused an overload in the hospitalization of severe cases of COVID-19 (BASTOS *et al.*, 2020).

The World Health Organization (WHO) In March 2020, it announced the pandemic in Brazil of COVID-19. At the beginning of December of the same year, data already showed a total of more than 64 million confirmed cases and 1,500,614 deaths worldwide; and in Brazil 6,487,084 cases and 175,270 deaths (CAMPOS; PIGLET, 2021).

In Pernambuco, these numbers were also increasing, until October 17, 2021, the date of data collection of the present study. There were 626,308 confirmed cases of COVID-19, of which 19,893 cases died (CIEVS,2021). Regarding the variable municipality, Recife obtained the highest index, reached n=5,495 cases of death recorded due to complications of COVID-19.

Corroborating this study, Silva, Jardim and Lotufo (2021), conducted a comparative study between Brazilian capitals, and showed that Recife obtained a high rate of Covid-19 cases that evolved to death. The fact that Recife is the capital of Pernambuco may explain the higher rate of notifications among cities, considering that many municipalities in the interior that do not have advanced resources refer their patients to the capital, seeking more specific care.

In the variable race, the pair had the highest rate of deaths with 55.57% registered cases. In the other way, the study by Moura *et al.*, observed that the race most affected was the white race, suffering alteration in the second wave of the pandemic passing to the black race.

The most prevalent age group in deaths due to COVID-19 in Pernambuco was the elderly population, with n=4,814 cases in the age group between 70-79 years, then 80 years and more with n=4,639.

Contributing to the findings of this research, another study also identified the elderly population as being the most affected. However, the study emphasized that in January 2021, there was a change in the age profile of individuals affected by COVI-19, with an increase among young people, but specifically that of children under 20 years of age, consequently, there was a reduction in cases among the elderly population (LORENZ *et al.*, 2021).

Also, according to the study by Lorenz *et al.*, the sex most affected was male, thus being in agreement with the results of this study, which also observed that the sex with the highest rate was male reaching 53.68% of the cases, a total of n=1,0679 records for that sex.

With the emergence of the new Coronavirus and its

rapid spread in alarming proportions, the rulers were under pressure to create containment strategies to prevent or at least reduce the spread of the virus, as well as develop a global strategy with health planning to serve the population (MOURA *et al.*, 2021).

Despite the measures adopted since 2020 by the three Brazilian government spheres, such as distance measures, expansion of hospital beds and implementation of surveillance systems, the second wave of the pandemic was not avoided, thus occurring more deaths at breakneck speed, making it necessary to force more stringent measures to contain the advance of the new Coronavirus (BARRETO; COAST; RAMOS, 2021).

Although measures were taken, deaths due to COVID-19 were inevitable, considering that the disease affected all groups, regardless of race, gender, social conditions. This study made it possible to understand the profile of these deaths.

Studies have already shown that there has been a reduction in cases of infection by the new Corona virus, and consequently a reduction in the number of deaths, however, there are indications of new infection considering the variants, so it is worth noting that prevention measures should be maintained, as well as counseling and encouraging vaccination in order to avoid infection and consequent worsening and even deaths by COVID-19.

4. Conclusion

Given the above, it is notorious that Covid-19 presented itself as a disease of high contagion power, spreading rapidly throughout the world, leaving thousands of families in mourning. Thus, it is possible to observe that some factors influenced the evolution of deaths, such as pre-existing diseases, which worsened with COVID-19.

In this sense, it is suggested that the measures to contain the virus be maintained, and that vaccination continue to be encouraged, aiming to avoid a third wave and thus more people perpetuate their lives.

The present study found some limitations, because there are still few studies describing deaths due to COVID-19, in view of its epidemiological profile. Thus, seeking to draw an epidemiological profile on deaths caused by Coronavirus infection, describing the associated risk factors, as well as developing strategies for prevention and control of infection.

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