



Analysis of the racial profile of women with COVID-19: a cross-sectional study about evolution to death of black women in the southeast region of Brazil

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Abstract

Introduction: The first coronavirus disease (COVID-19) case in Brazil was registered in December 2019. Since then, an important social situation has been highlighted. Black women correspond to the highest death rate, by group, in the Southeast even not occupying the highest percentage of diagnosis. This scenario was also experienced in other places around the world. Therefore, some questions must be highlighted, such as social and economic vulnerability of black population in Brazilian territory, less access to health service and testing for Covid-19. **Objective:** This study analyzed the clinical picture and evolution - cure or death-of black women with COVID-19 in the Southeast region. In addition, consolidating knowledge about the factors that precede death in black women and comparing them with other race groups. **Methods:** Cross-sectional study with data from the Ministry of Health's Severe Acute Respiratory Syndrome (SARS) from March to November 23, 2020, with a total number of women classified as level 5, with SARS caused by the virus SARS-Cov-2, equal to 33,991, being 21,551 white and 12,063 black. **Results and Conclusion:** Therefore, black women present themselves as a vulnerable group in relation to COVID-19. This group was less present in the ICU, but both groups, white and black women, had dyspnea as an aggravating factor. Considering those facts, it's possible that black women had less access, this would explain a greater number of deaths among this group compared to white women, which could signify a failure in the health care of this population. When analyzing deaths by age group, it is evident that white women followed the literature pattern - severe forms occur in patients over 65 years of age with comorbidities, while there was a rejuvenation of deaths among black women. It is a

limitation of our study not to include comorbidities in the analysis. This situation becomes relevant for directing public policies that aim to reverse the factors associated with this situation. More studies are needed to elucidate the socioeconomic issues that support this outcome, seeking to reduce the number of deaths from COVID-19 in black women.

Keywords: COVID-19. Women. Brazil. Deaths. Health Status Disparities.

Introduction

Emerging and re-emerging diseases are constant challenges for global public health since antiquity to contemporaneity. From the broad family Coronaviridae, three viruses cause severe acute respiratory illness in humans: MERS-Cov; SARS-Cov-2, which causes COVID-19; SARS-Cov-1, which has 79.5% genomic homology with SARS-Cov-2, both use to infect the ACE2 cell receptor [1]. In this regard, a study carried out in China with 41 confirmed cases of COVID 19 sought to identify the main clinical manifestations of the infection, and concluded that the fever was present in 98% of them, followed by cough (76%), dyspnea (55%) and myalgia/fatigue (44%) [2].

Accordingly, a systematic review of clinical, laboratory and imaging findings of confirmed cases of COVID-19 [3], identified that the most common signs and symptoms were: fever (88.7% [CI95% 84.5; 92.9%]), cough (57.6% [CI95% 40.8; 74.4%]) and dyspnea (45.6%; [95%CI 10.9; 80.4%]), although they may not be present. The first coronavirus disease (COVID-19) case in Brazil was registered in December 2019.

Since then, an important social situation has been highlighted. Black women are considered as black women as one group formed by "black and brown"

according to the self-declaration as defined by Brazilian Institute of Geography and Statistics (IBGE) which categorizes the Brazilian population in five colors/ races: white, black, "brown", indigenous and yellow people [4] correspond to the highest death rate, by group, in the Southeast even not occupying the highest percentage of diagnosis.

This scenario was also experienced in other places around the world. In the United States of America, Michigan, for example, where 14% of population are afro-americans, they represent more than 30% of Covid-19 positive cases and more than 40% of deaths. While in Chicago, where 29% of the city's population are afro-descendants, they represent 70% of Covid-19 deaths [5,6]. In Brazil, researches are still being produced in order to evidence social and biological elements relevant in pandemic evolution in our territory.

Therefore, some questions must be highlighted, such as: social and economic vulnerability of black population in Brazilian territory, less access to health service and testing for Covid-19, precarious filling of notifications records, as well as geographic distribution, mainly in large national metropolitan areas such as São Paulo which is the largest metropolis in the Southeast region characterized by residential racial segregation [7], where black people live on the edges in slums or poor neighborhoods. Racism and sexism present restrictions to the rights of vulnerable populations, and thus black women suffer from a double prejudice, constituting a highly vulnerable group, deserving greater focus in research and public policies [8].

In general, this study analyzed the clinical picture and evolution, cure or death-of black women with COVID-19 in the Southeast region. Also, consolidating knowledge about the factors that precede death in black women and comparing them with other race groups, with the white race being more quantitatively relevant, in the quest to avoid unfavorable outcomes and better understand the consequences of racial issues in the service of health in Brazil.

Methods

Study Design

Cross-sectional study with data from the Ministry of Health's Severe Acute Respiratory Syndrome (SARS) from March to November 23, 2020, with a total number of women classified as level 5, with SARS caused by the virus SARS-Cov-2, equal to 33,991, being 21,551 white and 12,063 black.

The choice of the object of study was black women, because they suffer damage to health due to being exposed to deprivation of human rights, inefficiency of government programs and lack of access

to education and comprehensive health because they are exposed to the intersectional analysis of sexism, racism and class [9].

Statistical Analysis

The variables analyzed were: "ICU internation", "evolution (to death)", "race", "age group", "dyspnea", "cough", "fever". Microsoft Excel and R Commander version 4.0.3 for Windows were used for data processing and analysis. Bivariate analysis were performed, with Hypothesis Tests (Fisher's exact test and Pearson's Chi-square test) and Odds Ratio (OR) being performed. For this purpose, the results with a Confidence Interval (CI) of 95% and p-value <0.05 were considered epidemiologically significant. Finally, two multivariate analyses were performed, using the Generalized Linear Model (GLM), aiming at a better analysis of the variables that were relevant in the bivariate analysis.

Results

The results related to the evolution of black women with COVID-19 (N=12063), showed that black women are more likely to evolve to death (40.3%) compared to white women (35%) (OR=1, 24; p-value<0.01; CI=95%). The death rate by age group and race reveals a total of 28.8% deaths in black women aged between 20 and 60 years, while in white women, between 20 and 60 years, it revealed a death rate of 19,8% (p-value<0.01; CI=95%). A bivariate analysis revealed 59.2% of deaths in patients admitted to the intensive care unit - ICU - (p<0.01). In addition, the ICU admission rate for black women was 28.7% and for white women was 31.4% (p<0.01; CI=95%). Among the symptoms analyzed, dyspnea was the only one related to the evolution to death in women in general (OR=1.22, p-value<0.01, CI=95%), showing to be an aggravating factor regardless of race and age.

According to Generalized Linear Models (GLM), the only category with statistical significance was the black race, resulting in 24% more chance of dying than white women in the Southeast (OR = 1.24; p-value<0.01; CI = 95%). Regarding the clinical picture, cough and fever had no statistical significance related to evolution to death in women. Nevertheless, it drew attention that black women who had dyspnea have 16% more chance of progressing to death than those in the same group who did not have this symptom (OR=1.16; p-value <0.01; CI=95%).

Discussion and Conclusion

Therefore, black women present themselves as a

vulnerable group in relation to COVID-19. This group was less present in the ICU, but both groups, white and black women, had dyspnea as an aggravating factor. Considering those facts, it's possible that black women had less access, this would explain a greater number of deaths among this group compared to white women, which could signify a failure in the health care of this population. When analyzing deaths by age group, it is evident that white women followed the literature pattern - severe forms occur in patients over 65 years of age with comorbidities [10], while there was a rejuvenation of deaths among black women. It is a limitation of our study not to include comorbidities in the analysis. This situation becomes relevant for directing public policies that aim to reverse the factors associated with this situation. More studies are needed to elucidate the socioeconomic issues that support this outcome, seeking to reduce the number of deaths from COVID-19 in black women.

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Not applicable.

Ethics approval

This study was analyzed and approved by the Ministry of Health.

Informed consent

The patient signed the consent form.

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Data sharing statement

No additional data are available.

Conflict of interest

The authors declare no conflict of interest.

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