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The prevalence of COVID-19 infection in black people in primary health care, hospital units and intensive care units: a protocol for a systematic review and meta-analysis

Prevalence of COVID-19 infection in black people.

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Abstract

Introduction: The COVID-19 pandemic has affected people all over the world. In this context, health disparities are already evident in the process of becoming ill and dying from this condition, further accentuating historical racial inequalities.

Methods and analysis: This protocol will be developed based on the recommendations of PRISMA-P. For this, searches will be carried out in the PubMed, Web of Science, Scopus, Lilacs and ScienceDirect databases in search of cross-sectional studies that assessed the prevalence of black people with COVID-19 at different levels of complexity. All cross-sectional studies that analyzed the prevalence of COVID-19 in black people assisted in primary care, hospital wards and intensive care units will be included. The research will be carried out by two independent researchers who will identify the articles; they will perform the exclusion of duplicate studies, and then, through blind evaluation, they will select the articles using the Rayyan QCRI application. To assess the risk of bias, the instrument proposed by Downs and Black will be used. The meta-analyzes will be performed according to the data conditions included.

Ethics and dissemination: For the development of this study, there is no need for an ethical appraisal considering that it is a systematic review that will use secondary studies.

Trial registration number: CRD42020209079.

Strengths and limitations of this study:

- Conducting the synthesis of COVID-19 evidence in different racial groups.
- The review will include prevalence studies conducted worldwide with race as its determinant.
- Researchers will conduct the review, extracting data on different bases and will assess the risk of bias.
- The review will have as main objective to analyze the racial disparities existing in the treatment of COVID-10.
- This review and meta-analysis aim to combine and compute the results of different studies that have comparable effect sizes; however, the risk of obtaining only a limited number of studies with small samples is recognized.

Introduction

Since December 2019 with the discovery of SARS-CoV-2 and the emergence of COVID-19, the spread of this new disease on a global scale has been verified. The rapid spread of this condition has triggered economic, social and health impacts, with one of the highlights being the emergence of social markers of race, class and gender, revealing conditions that make several population groups vulnerable. Therefore, it is necessary to consider the importance and need of the discussion about these markers, to understand and overcome the gaps that permeate between this scenario.[1]

In countries that have social disparities in their historical process, this pandemic presents itself in a racialized way. In the United States (USA), for example, African-Americans represent the population of greater illness and death from the COVID-19. In Michigan, African-Americans represent 14% of the population, and of these 30% tested positive for COVID-19 and more than 40% died. In Chicago, 29% of the population is African-Americans and 70% of deaths by COVID-19 were recorded in this population.[2-3]

These discrepancies in illness and death due to COVID-19 are the result of structural inequalities that place black people at greater susceptibility to contagion and are more likely to develop the severe form of the disease.[4] It is noteworthy that this group is in those with lower incomes, higher poverty rate, and less access to health services, which makes them seek health services in the most advanced stages of the disease, not accessing primary health care and for sometimes requiring more complex hospital services.

It should also be noted that approximately 90% of severe cases of COVID-19 involve persons with chronic diseases such as hypertension and diabetes, and these diseases are more prevalent in black people, which further increases the risk of death.[5]

The National Health Survey conducted in Brazil, reports that the worst health self-assessment rates are among black people, pointing out that the black population has higher prevalence of hypertension (44.2%) and diabetes (12.7%), when compared to the white population (22.1% and 6.2%, respectively), overcoming the national prevalence of both comorbidities. This also occurs in relation to heart disease (7.0%), asthma (8%) and neglected diseases, such as tuberculosis. It is also worth mentioning the higher prevalence of sickle cell disease in the black persons compared to non-blacks[6].

In the context of the COVID-19 pandemic, it appears, therefore, that black people are at greater risk of contamination by SARS-CoV-2 in view of the aspects already reported, and there is a greater increase in this risk when considering elderly black people, or those with immunosuppressive or hematopoietic diseases, or even people who need intensive care.[7]

During this pandemic, it is possible to observe the equity gap of marginalized groups before society, especially the black community, which, as noted, is the population with the highest morbidity and mortality rates due to COVID -19 when compared to populations of other races[8].

Thus, this review protocol will seek to identify the prevalence of black people affected by COVID-19 in primary health care, in hospital wards or in intensive care units, observing the influence of racial inequities in access to health services, and in the processes illness and death from this disease.

Methods and analysis

Protocol and registration

This systematic review was recorded in the International prospective register of Systematic reviews (PROSPERO) on September 15th, 2020 under the number CRD42020159968. Available at: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020209079

Electronic searches

The design and development of this systematic review and meta-analysis will be in accordance with the statement of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-P).[9] Initially, the identification of the articles will be carried out in the electronic databases: PubMed, Lilacs, Web of Science, Scopus and Science Direct. In order to carry out the appropriate search in each database, the search strategy will be duly modified for each one and will be carried out by two reviewers in a double-blind manner to identify the eligible studies.

This pair of independent researchers will carry out the search, and publications considered to be potentially relevant will be included in the review if they meet all the inclusion criteria. Consensus meetings will be held at each stage, if there is no consensus the third reviewer will participate.

The reference list of possible studies included will be selected manually to identify other relevant publications. In case of disagreement, it will be resolved by a third reviewer.

Figure 1. Flow diagram. Adapted from PRISMA-P

Search strategy

The search strategy is shown in table 1.

Table 1

Inclusion criteria

For this review, articles that meet the eligibility criteria based on the study Population, Intervention, Comparison, Outcome and Study design (PICOS) will be included, as described in Table 2.

Table 2

Studies will be eligible for further analysis if the following inclusion criteria are met: All cross-sectional studies that analyzed the prevalence of COVID-19 in black people assisted in primary health care, hospital units or intensive care units.

Exclusion criteria

Articles whose studies do not show the race variable as a social determinant, cohort and case-control studies, case reports, reviews and randomized clinical trials and qualitative studies will be excluded

Selection of studies

For the selection of studies, based on the inclusion criteria, the following steps will be performed: 1) exclusion of duplicate articles; 2) reading the title and abstract of all the remaining articles, and finally 3) reading the studies selected in the previous step. Rayyan QCRI Software[10] will be used to perform these steps.

The selection phase of the studies will be conducted by two independent researchers and in case of disagreement between the researchers, even after the consensus meeting, the third researcher will be involved.

Mendeley Software will be used to format the references[11].

Data extraction

The characteristics of the study (author, publication date, study design, period, study location) and study population (race,sex and age group of participants) will be extracted from all included studies. We will identify peer-reviewed publications that include the following criteria: Patients with COVID-19 (participants); Black patients (exposition); White and other races patients with COVID-19 (comparation); Prevalence of black people with COVID-19 in primary health care, hospital units and intensive care units (outcome).

To perform the statistical analysis, the Review Manager software (RevMan 2010) will be used.

Risk of bias assessment

The evaluation of the methodological quality of the studies included in the review will be conducted according to the quality index for randomized and observational studies proposed by Downs and Black, which has a checklist of 26 items. The index has 5 subscales (reports; external validity; internal validity - bias; internal validity - confused; and power) whose items are scored from 0 or 1, except for one item in the report subscale, scored from 0 to 2, and the single power item, scored from 0 to 5. The maximum total score of the methodological quality assessment index is 32 points[12].

Each published article will be independently assessed by 2 authors and to resolve any differences in the assigned scores, a third author will be consulted.

Data Synthesis

Results will be expressed as prevalence with 95% Confidence Intervals (CI). Fixed-effects or random effects models will be chosen depending on whether there is an absence or presence of heterogeneity between studies. Statistical heterogeneity will be assessed by the I2 statistic (<25%, no heterogeneity; 25%–50%, moderate heterogeneity; and >50%, strong heterogeneity).

When a significant heterogeneity exists across the included studies (I2 > 50%), a random-effects model will be used for the analysis; otherwise, the fixed-effects model will be used.

All tests will be performed using Review Manager (RevMan version 5.3.0) software and two-sided p value < 0.05 will be considered statistically significant.

Patient and Public Involvement

No patient involved

Discussion

The COVID-19 pandemic has increasingly accentuated the social inequities that exist in countries with historical inequalities. In addition to its impact on health and due to the

dynamics of social structure, this pandemic also has a debilitating impact on many families around the world. Studies show that black people have increased rates of COVID-19 infection and mortality. This is related to racial and ethnic disparities that are characterized in the financing of health care, access, quality and service provision. Primary health care is supporting most of the cases of COVID-19, and has quickly adjusted to the needs of consultations that are not in person. Black people have greater social vulnerability related to poverty, less access to health services, unemployment and lower income, thus, these factors can lead to a late search for treatment of the disease, resulting in the worsening of and search for more complex services, placing at greater risk of death.

There are still no studies that summarize the care provided to people affected by COVID-19 in relation to different levels of health care. Therefore, this systematic review will be useful to assist in the process of improving and implementing existing public health policies, in addition to contributing to the development of new policies that guarantee greater access to health services by black people. Thusly, it is expected that the conclusion of this systematic review will produce results that make it possible to understand the care process offered to this population group and to identify whether racial disparities are factors that can increase the risk of illness and death in the context of the COVID-19 pandemic. In addition, the results can also assist in defining strategies that can be adopted to control and prevent transmission of COVID-19, to define health care and self-care recommendations in the pandemic an post-pandemic periods.

Ethics and dissemination

Ethical approval and informed consent are not necessary for this research, because it is a systematic review (use of secondary data).

Author contributions

Conceptualization: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Maria Helena Rodrigues Galvão, Arthur de Almeida Medeiros

Data analysis: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Dalyanna Mildred de Oliveira Viana Pereira, Isabelle Ribeiro Barbosa, Arthur de Almeida Medeiros

Methodology: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Arthur de Almeida Medeiros, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Project administration: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Reading and Final Revision of the Text: All.

Research: All.

Financing: Coordination for the Improvement of Higher Education Personnel - Brazil (CAPES) - Finance Code 001, for the incentive by granting MsC scholarships and for payment of postdoctoral scholarship for Arthur de Almeida Medeiros [process 88887.372306/2019-00].

Writing of the scientific paper: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Competing interests: None declared

Patient consent for publication: Not required.

Provenance and peer review: Not commissioned; externally peer reviewed.

Data availability statement: Data are available in a public, open access repository. There are no data in this work. Data are available upon reasonable request. Data may be obtained from a third party and are not publicly available. No data are available. All data relevant to the study are included in the article or uploaded as supplementary information

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List of table

Table 1. PICO description

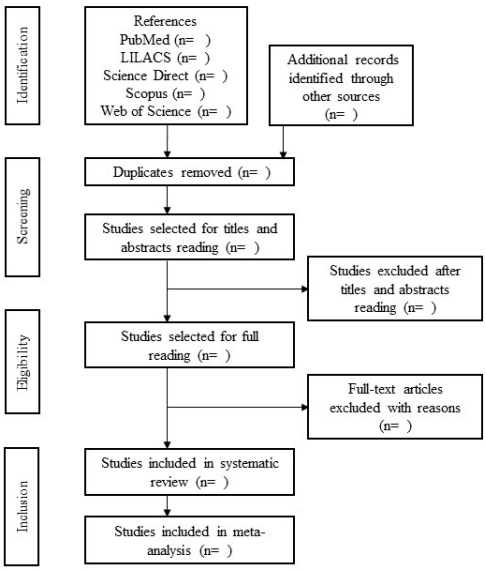
Abbreviation	PICO	Elements
P	Participants	Patients with covid-19
E	Exposition	Black patients

C	Comparison	White and other races patients with COVID-19
O	Outcome	Prevalence of black people with COVID-19 in primary health care, hospital wards and intensive care units

Table 2 . Search strategy

Search Itens	Keywords
1.	2019 novel coronavirus disease
2.	COVID19
3.	COVID-19 pandemic
4.	SARS-CoV-2 infection
5.	COVID-19 virus disease
6.	2019 novel coronavirus infection
7.	2019-nCoV infection
8.	coronavirus disease 2019
9.	coronavirus disease-19
10.	2019-nCoV disease
11.	COVID-19 virus infection
12.	**OR 1/11**
13.	African Americans
14.	African-Americans
15.	African-American
16.	Skin Color
17.	Color, Skin
18.	Colors, Skin
19.	Skin Colors
20.	Negroid Race
21.	Negroid Races
22.	Race, Negroid
23.	Races, Negroid
24.	Blacks
25.	Negroes
26.	Negro
27.	**OR 13/26**
28.	Primary Care
29.	Care, Primary
30.	Hospital Units

31.	Hospital Unit
32.	Unit, Hospital
33.	Units, Hospital
34.	Intensive Care Units
35.	Care Unit, Intensive
36.	Care Units, Intensive
37.	Intensive Care Unit
38.	Unit, Intensive Care
39.	Units, Intensive Care
40.	**OR 28/39**
41.	**12 AND 27 AND 40**



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Abstract

Introduction: COVID-19 pandemic has affected people all over the world. In this context, health disparities are already evident in becoming ill and dying from this condition, further accentuating historical racial inequalities.

Methods and analysis: This protocol will be developed based on the recommendations of PRISMA-P. For this, searches will be carried out in PubMed, Web of Science, Scopus, Lilacs, and ScienceDirect databases searching for cross-sectional studies that assessed the prevalence of black people with COVID-19 at different levels of complexity. All cross-sectional studies that analyzed the prevalence of COVID-19 in black people assisted in primary care, hospital wards, and intensive care units will be included. The research will be carried out by two independent researchers who will identify the articles; they will exclude duplicate studies. Through blind evaluation, they will select the articles using the Rayyan QCRI application. The instrument proposed by Downs and Black will be used to assess the risk of bias. The meta-analyses will be performed according to the data conditions included.

Ethics and dissemination: For this study's development, there is no need for an ethical appraisal considering that it is a systematic review that will use secondary studies. This study's findings will be disseminated through peer-reviewed publications, conference presentations, and condensed summaries for main stakeholders and partners in the field. The database search is expected to begin on February 1, 2021. It is expected to complete the entire review process by October 30, 2021

Trial registration number: CRD42020209079.

Strengths and limitations of this study:

- Share the synthesis of COVID-19 evidence in different racial groups.
- The review will include prevalence studies conducted worldwide with race as its determinant.
- Researchers will conduct the review, extract data on different bases, and assess the risk of bias.
- Full articles will be selected, and gray literature will be excluded.
- This review and meta-analysis aim to combine and compute the results of different studies with comparable effect sizes; however, the risk of obtaining only a limited number of studies with small samples is recognized.

Introduction

Since December 2019, after discovering SARS-CoV-2 and the emergence of COVID-19, was observed the spread of this new disease worldwide. The rapid spread of this condition has triggered economic, social, and health impacts. One of the highlights is the emergence of social markers of race, class, and gender, revealing conditions that make several population groups vulnerable. Therefore, it is necessary to discuss these markers to understand and overcome the gaps that permeate between this scenario.[1]

In countries with social disparities in their historical process, this pandemic presents itself in a racialized way. For example, in the United States (USA), African-Americans represent the population of more significant illness and death from the COVID-19. In Michigan, African-Americans represent 14% of the people, and of these, 30% tested positive for COVID-19, and more than 40% died. In Chicago, 29% of the population is African-Americans, and 70% of deaths by COVID-19 were recorded in this population.[2-3]

These discrepancies concerning illness and death due to COVID-19 result from structural inequalities that place blacks at greater susceptibility to contagion and the development of the severe form of the disease[4].

It is noteworthy that this group is among those who have a lower income, higher poverty rate, and less access to health services, leading them to seek health services in the most advanced stages of the disease, sometimes requiring more complex services in hospitals.

It should also be noted that approximately 90% of severe cases of COVID-19 involve persons with chronic diseases such as hypertension and diabetes, and these diseases are more prevalent in black people, which further increases the risk of death.[5]

The National Health Survey conducted in Brazil reports that the worst health self-assessment rates are among black people, pointing out that the black population has a higher prevalence of hypertension (44.2%) and diabetes (12.7%) when compared to the white people (22.1% and 6.2%, respectively), overcoming the national prevalence of both comorbidities. This also occurs in heart disease (7.0%), asthma (8%), and neglected diseases, such as tuberculosis. It is also worth mentioning the higher prevalence of sickle cell disease in black persons compared to non-blacks[6].

In the context of the COVID-19 pandemic, it appears, therefore, that black people are at greater risk of contamination by SARS-CoV-2 in view of the aspects already reported, and there

is a more significant increase in this risk when considering elderly black people, or those with immunosuppressive or hematopoietic diseases, or even people who need intensive care.[7]

During this pandemic, it is possible to observe the equity gap of marginalized groups before society, especially the black community, which, as noted, is the population with the highest morbidity and mortality rates due to COVID -19 when compared to people of other races[8]. Even if the virus affects everyone, there is a disproportionately negative impact on black people and is also most notable in the extremely high mortality rate experienced in black populations. Reports from US cities that were most severely affected by the virus revealed stark disparities[9].

A systematic review and meta-analysis identified that black and Asian and Hispanic patients are more likely to become infected with the COVID-19 virus than white patients. The authors associate with the highest risk of admission to Intensive Care Units and death in the most affected groups, suggesting that factors such as lack of ease in timely access to health resources, structural racism, and occupational risk underlying racial inequalities are associated with this outcome[10].

Another point to be considered is occupational exposures. It is already known that certain occupations and industries present a greater risk for COVID-19, especially those employed in health and other essential industries[11-12]. These differences are related to the characteristics inherent to the occupation employed, including exposures to nearby infections with other people[13]. As a result of this occupational segregation, people of color are often employed in occupations that present a higher risk of injury to the environment and other diseases[14]. A study by Hawkins[15] showed that black workers were more likely to be employed in essential sectors. Black and Asian workers were more likely to work in the health and social care sectors and hospitals. Besides, black and Hispanic workers were twice as likely to be employed in the animal processing and slaughtering industry, where there were notable outbreaks of COVID-19, suggesting that part of the racial and ethnic variability in COVID-19 risk may also be due to occupational segregation.

Thus, this review protocol will seek to identify the prevalence of black people affected by COVID-19 in primary health care, hospital wards, or intensive care units.

Methods and analysis

Protocol and registration

This systematic review was recorded in the International prospective register of systematic reviews (PROSPERO) on September 15, 2020, under protocol CRD42020159968. Available at: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020209079

Electronic searches

The design and development of this systematic review and meta-analysis will follow the statement of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-P).[16] Initially, the articles' identification will be carried out in the electronic databases: PubMed, Lilacs, Web of Science, Scopus, and Science Direct. The search strategy will be duly modified for each one to carry out the appropriate search in each database. Two reviewers will carry it out in a double-blind manner to identify the eligible studies.

This pair of independent researchers will carry out the search, and publications considered to be potentially relevant will be included in the review if they meet all the inclusion criteria. Consensus meetings will be held at each stage; there is no consensus the third reviewer will participate.

The reference list of possible studies included will be selected manually to identify other relevant publications. In case of disagreement, it will be resolved by a third reviewer.

Figure 1 shows the flowchart adapted from PRISMA-P[16] containing all the steps for selecting the studies for this review.

Figure 1. Flow diagram. Adapted from PRISMA-P

Search strategy

The search strategy is shown in table 1.

Table 1

Inclusion criteria

For this review, articles that meet the eligibility criteria based on the study Population, Intervention, Comparison, Outcome, and Study design (PICOS) will be included, as described in Table 2.

Table 2

Studies will be eligible for further analysis if the following inclusion criteria are met: All cross-sectional studies that analyzed the prevalence of COVID-19 in black people assisted in primary health care, hospital units, or intensive care units.

Exclusion criteria

Articles whose studies do not show the race variable as a social determinant, cohort and case-control studies, case reports, reviews, and randomized clinical trials and qualitative studies will be excluded

Selection of studies

For the selection of studies, based on the inclusion criteria, the following steps will be performed: 1) exclusion of duplicate articles; 2) reading the title and abstract of all the remaining articles, and finally, 3) reading the studies selected in the previous step. Rayyan QCRI Software[17] will be used to perform these steps.

Two independent researchers will conduct the selection phase of the studies, and in case of disagreement between the researchers, even after the consensus meeting, the third researcher will be involved.

Mendeley Software will be used to format the references[18].

Data extraction

The characteristics of the study (author, publication date, study design, period, study location) and study population (race, sex, and age group of participants) will be extracted from all included studies. We will identify peer-reviewed publications that include the following criteria: Patients with COVID-19 (participants); Black patients (exposition); White and other

races patients with COVID-19 (comparison); Prevalence of black people with COVID-19 in primary health care, hospital units, and intensive care units (outcome).

The Review Manager software (RevMan 2010) will be used to perform the statistical analysis.

Risk of bias assessment

The evaluation of the studies' methodological quality included in the review will be conducted according to the quality index for randomized and observational studies proposed by Downs and Black, which has a checklist of 26 items. The index has five subscales (reports; external validity; internal validity - bias; internal validity - confused; and power) whose items are scored from 0 or 1, except for one item in the report subscale, scored from 0 to 2, and the single power item scored from 0 to 5. The maximum total score of the methodological quality assessment index is 32 points[19].

Two authors will independently assess each published article, and if there are any differences in the assigned scores, a third author will be consulted.

Data Synthesis

Results will be expressed as prevalence with 95% Confidence Intervals (CI). Fixed-effects or random-effects models will be chosen depending on whether there is an absence or presence of heterogeneity between studies. The I2 statistic will assess statistical heterogeneity (<25%, no heterogeneity; 25%–50%, moderate heterogeneity; and >50%, strong heterogeneity).

When a significant heterogeneity exists across the included studies (I2 > 50%), a random-effects model will be used for the analysis; otherwise, the fixed-effects model will be used.

All tests will be performed using Review Manager (RevMan version 5.3.0) software, and a two-sided p-value < 0.05 will be considered statistically significant.

Confidence in cumulative evidence

The GRADE approach will be used to assess the quality of evidence that will be included in this review

Ethics and dissemination

The study will be conducted following this protocol, which was approved by PROSPERO in September 2020. The database search will start on February 1, 2021, and it is expected to complete the entire review process on October 30, 2021. The results will be published in peer-reviewed journals and annals of local and national, and international conferences.

Patient and Public Involvement

No patient involved

Discussion

The COVID-19 pandemic has increasingly accentuated the social inequities that exist in countries with historical inequalities. In addition to its impact on health and the dynamics of social structure, this pandemic also had a debilitating effect on many families worldwide. Studies show that black people have increased rates of COVID-19 infection and mortality, which is related to racial and ethnic disparities characterized in the financing of health care, access, quality, and service provision. Primary health care is supporting most of the cases of COVID-19 and has quickly adjusted to the needs of consultations that are not in person. Black people have more significant social vulnerability related to poverty, less access to health services, unemployment, and lower-income. Thus, these factors can lead to a late search for the disease's treatment, resulting in the worsening of and search for more complex services, placed at greater risk of death.

There are still no studies that summarize the care provided to people affected by COVID-19 concerning different healthcare levels. Therefore, this systematic review will help improve and implement existing public health policies and contribute to the development of new policies that guarantee greater access to health services by black people. This way, it is expected that the conclusion of this systematic review will produce results that make it possible to understand the care process offered to this population group and to identify whether racial

disparities are factors that can increase the risk of illness and death in the context of the COVID-19 pandemic. The results can also help define strategies that can control and prevent transmission of COVID-19 and propose health care and self-care recommendations in the pandemic and post-pandemic periods.

Ethics and dissemination

Ethical approval and informed consent are not necessary for this research because it is a systematic review.

Author contributions

Conceptualization: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Maria Helena Rodrigues Galvão, Arthur de Almeida Medeiros

Data analysis: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Dalyanna Mildred de Oliveira Viana Pereira, Isabelle Ribeiro Barbosa, Arthur de Almeida Medeiros

Methodology: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Arthur de Almeida Medeiros, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Project administration: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Reading and Final Revision of the Text: All.

Research: All.

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Writing of the scientific paper: Talita Araujo de Souza, Pedro Henrique Alcântara da Silva, Aryelly Dayane da Silva Nunes, Isabelle Ribeiro Barbosa, Gilson de Vasconcelos Torres

Competing interests: None declared

Patient consent for publication: Not required.

Provenance and peer review: Not commissioned; externally peer-reviewed.

Data availability statement: All data relevant to the study are included in the article or uploaded as supplementary information

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List of table

Table 1. PICO description

Abbreviation	PICO	Elements
P	Participants	Patients with covid-19
E	Exposition	Black patients
C	Comparison	White and other races patients with COVID-19
O	Outcome	Prevalence of black people with COVID-19 in primary health care, hospital wards and intensive care units

Table 2 . Search strategy

Search Itens	**Keywords**
1.	2019 novel coronavirus disease
2.	COVID19
3.	COVID-19 pandemic
4.	SARS-CoV-2 infection
5.	COVID-19 virus disease
6.	2019 novel coronavirus infection
7.	2019-nCoV infection
8.	coronavirus disease 2019
9.	coronavirus disease-19
10.	2019-nCoV disease
11.	COVID-19 virus infection
12.	**OR 1/11**
13.	African Americans
14.	African-Americans
15.	African-American
16.	Skin Color
17.	Color, Skin
18.	Colors, Skin

19.	Skin Colors
20.	Negroid Race
21.	Negroid Races
22.	Race, Negroid
23.	Races, Negroid
24.	Blacks
25.	Negroes
26.	Negro
27.	**OR 13/26**
28.	Primary Care
29.	Care, Primary
30.	Hospital Units
31.	Hospital Unit
32.	Unit, Hospital
33.	Units, Hospital
34.	Intensive Care Units
35.	Care Unit, Intensive
36.	Care Units, Intensive
37.	Intensive Care Unit
38.	Unit, Intensive Care
39.	Units, Intensive Care
40.	**OR 28/39**
41.	**12 AND 27 AND 40**

Identification

References
PubMed (n=)
LILACS (n=)
Science Direct (n=)
Scopus (n=)
Web of Science (n=)

Additional records identified through other sources (n=)

Screening

Duplicates removed (n=)

Studies selected for titles and abstracts reading (n=)

Studies excluded after titles and abstracts reading (n=)

Eligibility

Studies selected for full reading (n=)

Full-text articles excluded with reasons (n=)

Inclusion

Studies included in systematic review (n=)

Studies included in meta-analysis (n=)

ID bmjopen-2020-045000 - The prevalence of COVID-19 infection in black people in primary health care, hospital units and intensive care units: a protocol for a systematic review and meta-analysis

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol*

Section and topic	Item No	Checklist item	Reported on Page #
ADMINISTRATIVE INFORMATION			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	1
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	2
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	10
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	-
Support:			
Sources	5a	Indicate sources of financial or other support for the review	10
Sponsor	5b	Provide name for the review funder and/or sponsor	10
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	10
INTRODUCTION			
Rationale	6	Describe the rationale for the review in the context of what is already known	4
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	5
METHODS			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	7
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey	6

		literature sources) with planned dates of coverage	
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	6
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	6
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	7
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	7
Data items	12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	7
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	8
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	8
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	8
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I^2, Kendall's τ)	8
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	-
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	-
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	8
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	8

*** It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

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