

The inequality pandemic and its impact on public health

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Abstract— Objective: This study aims to describe, through a bibliographic review, aspects related to the pandemic caused by Sars- Cov-2 and its impacts on public health, from the perspective of inequalities experienced by vulnerable groups.**Method:**It is an integrative review of the literature through the search for articles in the scientific databases, published in the year 2020. For the treatment of the data, the technique of content analysis was used. 12 complete original articles were selected that answer the central question of the research, which were grouped in tables according to author, title, journal, year of publication, indexation base, objectives, methodologies and evidence. **Results:** The analysis of the literature shows that the main inequalities addressed were about race, gender, social class, working conditions, food security, weaknesses of the health care network, correlation between social class and comorbidities due to chronic non-communicable diseases and listed measures of facing the pandemic. **Conclusion:** It is concluded that it is necessary to mobilize at the global, national and regional levels the means to stop the exacerbation of inequalities in their various types, and consequently health.

I. INTRODUCTION

In public health, although they are often presented as synonyms, inequality and inequity are different concepts. Health inequalities refer to any observable differences between groups (economic level, education, place of residence, sex, among others) within a population. In turn, inequities are differences that are considered unfair from a value judgment. In this perspective, although the focus is on combating inequities, it is initially up to the scientific community to search for evidence of inequalities, in order to identify the most vulnerable groups, which should be prioritized in public health interventions. [1]

Brazil, specifically, has very significant historical social inequalities. This is reflected in the health of the Brazilian population, making social determinants of health major players in this context. [1]

The pandemic caused by the New Coronavirus SARS-CoV-2, which caused COVID-19, has aggravated existing

problems and brought to light the disparities faced by cities whose social and territorial factors bring together the greatest inequalities and are rapidly emerging as the epicenter of attention of the pandemic. Brazil, being a country of great territorial extension, is marked by enormous social inequality and vulnerabilities of the most different dimensions among its five regions, suggesting the existence of a different risk for COVID-19. [2]

The health sector's weaknesses are exposed in the face of the pandemic, in the midst of an unprecedented health and political crisis, guided by yet experimental guidelines, health professionals are one of the groups most affected by the pandemic and suffer from work overload and illness as a consequence of the population's non-compliance with social isolation and health recommendations, which culminates in a high rate of illness and reduction of beds. In addition, the lack of basic investments in infrastructure and inputs such as Personal Protective Equipment and little access to diagnostic tests aggravates this scenario. [3]

Therefore, characterizing social and spatial inequalities in cities is fundamental not only for understanding the dynamics of the transmission of COVID-19, but, above all, for the design of coping actions involving appropriate intersectoral public policies for disease prevention.

Thus, this study aimed to describe, through a bibliographic review, aspects related to the pandemic caused by Sars-Cov-2 and its impacts on public health, from the perspective of inequalities experienced by vulnerable groups.

II. METHOD

The research is an integrative review type, which has the purpose of gathering and synthesizing research results on a delimited theme, in a systematic and orderly manner, being an instrument for the deepening of knowledge about the investigated theme, allowing the synthesis of multiple published studies and general conclusions about it. [4]

In carrying out this review, six steps were used: selection of hypotheses or guiding questions for the review; selection of studies that will compose the sample; definition of the characteristics of the studies; categorization of studies; analysis and interpretation of results; and, report of the review. [5]

The guiding question for the elaboration of this integrative review was: What are the scientific productions available on aspects related to the pandemic caused by Sars-Cov-2 and its impacts on public health, from the perspective of inequalities experienced by vulnerable groups?

The survey of bibliographic studies took place during the month of January 2021 and five databases were chosen: Virtual Health Library, Scientific Electronic Library Online (SCIELO), PubMed and Google Scholar.

Following, the validated DECS descriptors were used: “COVID-19”; “Inequalities in Health” and “Collective Health”, using the Boolean operators AND, in Portuguese, Spanish and English, published in 2020.

For data collection, it was decided to use the instrument validated by Ursi. [5] The analysis of the selected studies took place in a descriptive manner, in order to enable observance and description of the data, thus, it was possible to gather the synthesized knowledge on the subject in question. Based on that, two empirical categories were elaborated, which will be presented and discussed below, in which Bardin's content analysis method was used to explore the content. To guarantee the success of this study, it was decided to describe and distribute the results in tables, highlighting the main findings of each research. As for the discussion, it was carried out in a descriptive way, in order to achieve the objectives of building an integrative review.

III. RESULTS AND DISCUSSION

In the present integrative literature review, a total of 3,535 were found, which after reading the titles and abstracts, arrived at the number of 12 original scientific articles that rigorously met the selection of the sample previously established and showed approximations with the object of this study. These were organized in alphanumeric codes, from CN01 to CN12, for better presentation and understanding of the results.

Tables 1 and 2 show the characteristics of these studies, in which articles in Portuguese (66.6%), bibliographic review (75%), published in national journals (83.3%) and indexed in the database are predominant. SciELO data (83.3%).

Table 1: Distribution of studies.

Nº	Base	language	Author. Title. Periodic. Year	Objective	Methodology
CN01	Google Scholar	Portuguese	INSFRAN, Fernanda Fochi Nogueira. MUNIZ, Ana Guimarães Correa Ramos. Mothering and Covid-19: gender inequality being reaffirmed in the pandemic. Diversitates Int. J.2020.	Reflectongenderinequalityand sexual divisionof labor reaffirmed in the biggest health crisis experienced in thelast hundred years: the pandemic by Covid-19.	Presentation of spontaneous initiatives to create a support network - host groups on social networks, mothers' circles, psychological listening experience.

CN02	SCIELO	Portuguese	ALPINO, Tais de Moura Ariza. et al. COVID-19 and food and nutritional (in)security: action by the Brazilian Federal Government during the pandemic, with budget cuts and institutional dismantlement. Cad. Saúde Pública. 2020.	Analyze the first actions, at the federal level, by the Brazilian government to mitigate the effects of the pandemic that may have an impact on food and nutrition security, considering the recent institutional changes in policies and programs.	Narrative view of the literature and used as information sources the bulletins from the Operations Coordination Center of the Crisis Committee for Supervision and Monitoring of the Impacts of COVID-19 and home pages of sectoral ministries, from March to May 2020.
CN03	Pubmed	English	BROWNSON, Ross C., et al. Reimagining Public Health in the Aftermath of a Pandemic. American Journal of Public Health. 2020.	Outline the next public health challenges and transitions and the actions needed for the next 5 years to reinvent our public health systems.	Literature review
CN04	SciELO	Portuguese	GOES, Emanuelle F.; RAMOS, Dandara O.; FERREIRA, Andrea J. F. Racial health inequalities and the COVID-19 pandemic. Trabalho, Educação e Saúde, Rio de Janeiro, 2020.	Recover historical aspects and their relationship with the vulnerability conditions of the black population and present an agenda of specific actions to combat racism and its devastating consequences in the context of Covid-19.	Literature review
CN05	SciELO	Portuguese	SANTOS, José Alcides Figueiredo. COVID-19, fundamental causes, social class and territory. Trab. Educ. Saúde. 2020.	Mobilize the theory that considers social conditions as fundamental causes of health, in conjunction with the notions of social class and territory, using this interpretative framework of reference in reflections on relevant aspects of the trajectory and the distribution of the effects of the Covid-19 pandemic in the country.	Literature review
CN06	SciELO	Portuguese	GONDIM, Gracia Maria de Miranda. Decipher me or I'll devour you: Health Surveillance puzzles in the Covid-19 pandemic. Trab. Educ. Saúde. 2020.	Reflect on conjunctural elements (economic-political and socio-environmental) necessary to understand technical surveillance interventions.	Literature review
CN07	SciELO	Portuguese	ESTRELA, Fernanda Matheus. et al. Covid-19 Pandemic: reflecting	Reflect the impacts of COVID 19, considering markers of gender, race and	Exploratory study, with emphasis on the analysis of selected publications, based

			vulnerabilities in the light of gender, race and class. <i>Ciência&SaúdeColetiva</i> , 2020.	class.	on systematized search on official websites, as well as on the PubCovid-19 platform.
CN08	SciELO	Portuguese	DEMENECH, Lauro Miranda. et al. Income inequality and risk of infection and death by COVID-19 in Brazil. <i>REV BRAS EPIDEMIOL.</i> 2020.	To evaluate, through spatio-temporal analysis, if the economic inequality of the Federative Units (UF) in Brazil may be associated with the risk of infection and death by COVID-19.	Ecological study, based on secondary data on incidence and mortality rates for COVID - 19. The data were analyzed at the state level, with the Gini coefficient as the main independent variable. A spatial dependence diagnosis of the data was performed and the spatial regression lag model was used, when applicable.
CN09	SciELO	Portuguese	COSTA, Simone da Silva. The pandemic and the labor market in Brazil. <i>Revista de AdministraçãoPública.</i> 2020	Briefly present the consequences of COVID-19 for the Brazilian labor market, highlighting the impacts that the crisis has on workers who live off informality.	Literature review
CN10	SciELO	English	FREITAS, Carlos Machado de. SILVA, Isadora Vida de Mefano e. CIDADE, Natália da Cunha. COVID-19 AS A GLOBAL DISASTER: Challenges to risk governance and social vulnerability in Brazil. <i>Ambiente & Sociedade.</i> 2020.	Understand how these threats undermine risk governance capacity and expand and intensify social inequalities, making Brazil the new epicenter of the global disaster by COVID-19.	Literature review
CN11	SCIELO	Portuguese	ORELLANA, Jesem Douglas Yamall. Explosion in mortality in the Amazonian epicenter of the COVID-19 epidemic. <i>Cad. Saúde Pública</i> 2020.	Analyze the excess in general mortality, according to Epidemiological Weeks (SE), in order to identify changes potentially associated with the epidemic in Manaus.	General mortality data and groups of causes were obtained from the National Civil Registry Information Center and the Mortality Information System, for 2018, 2019 and 2020. Age group, sex, place of death, SE, year were analyzed - calendar and causes of death.
CN12	SCIELO	English	TRAVASSOS, Luciana R. F. C. MOREIRA, Renata M. P. CORTEZ, RayssaSaidel. The virus,	To raise interpretations that relate the evolution of the pandemic with the inequalities already present in	Reviews that dialogue with the perspective of environmental justice, discussing some impacts of

			the disease and the inequality. Ambiente & Sociedade. 2020.	the urban space of São Paulo and with the different existing conditions to adhere to isolation.	inequalities in the lives and deaths of residents of São Paulo, such as the distribution of urban characteristics, work, comorbidities, access to health and race equipment, which maintains a center-periphery. This is an exploratory study, with open hypotheses.
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Source: Research protocol, 2021.

Table 2: Evidence from the studies.

N°	Evidence
CN01	It is understood that only the collective path, where sorority is present as a form of care and resistance, can lead to overcoming inequalities, intensified in this pandemic context. In collective actions, as a result of spontaneous and / or institutional initiatives, a horizon for overcoming gender inequality was seen.
CN02	The actions were systematized according to the guidelines of the National Food and Nutrition Security Policy. The creation of institutional arrangements for crisis management was identified. Among the proposed actions, those related to access to income, such as emergency aid, and food, such as authorization for the distribution of food outside the school environment, with federal resources from the National School Food Program, stand out. However, setbacks and disassemblies in the area of food and nutritional security can compromise the Federal Government's response capacity in the context of COVID-19.
CN03	Three phases for public health have been envisaged over the next 5 years: (1) reactive crisis management, (2) efforts to maintain initial gains, and (3) efforts to sustain and improve progress. A reinvented public health system will depend heavily on leadership and political will, rethinking risk at the population level, employing 21st century data science, and applying new communication skills.
CN04	The social protection policies implemented in the face of the Covid-19 emergency are needed to ensure equity, also reaching quilombola communities, slums and suburban populations who, in order to receive emergency aid from the government, need to be exposed to infection in the agglomeration of communities. hours of queuing at banks and lottery shops. In addition, ensure that access to Covid-19 diagnostics is equally distributed to the population and that testing initiatives have sufficient capillarity to cover the rich and impoverished areas of cities with equal effectiveness. Finally, greater transparency must be demanded from the bodies responsible for pandemic data in the country so that they: include race or ethnicity markers in the data referring to the entire course of the disease, from testing, hospitalizations and deaths; maintain a systematic and agile routine of disseminating these data to society and expand the testing capacity in the country and do it differently in areas of greater vulnerability, such as people deprived of their liberty, the populations living and surviving on the streets and quilombola communities.
CN05	There is a social determination of the guidelines or provisions that can impact actions in the face of a pandemic. Motivation and the ability to change day-to-day routines, to adopt more systematic hygiene practices, the level and direction of the influence that the family and the closest environment has on people, the perception and evaluation of risk of illness and death do not vary only between individuals, as they are socially formed and conditioned within groups. Economic constraints are quite different between groups. They have been stronger in those who have less and need more. Added to this is the disorienting effect of the acts and speeches of a recently elected president. This action may be affecting the popular strata more, at least in absolute terms, as they are in greater numbers. Objective constraints, behavioral guidelines and cognitive elements have contributed to

	reinforce the distribution of the disease at the base of the social pyramid.
CN06	The crisis of the new Coronavirus and the pandemic as a metaphor exposed the structural and historical inequalities of class struggle, determined by the unequal distribution of society's material wealth, colonialism and patriarchy, which, over the centuries, have forged invisibilities and demographic-territorial segregations (poor, black, women, LGBTQIA +, Indians, quilombolas, ribeirinhos, caçaras, elderly). These are current geopolitical issues, of global reach, analyzed by theorists of political economy, who point out the impossibility of life on the planet without solidarity and socio-environmental justice. Humanity needs to return to territory and nature, as dimensions inseparable from the human; giving visibility and a voice to the periphery for its innovative-transforming-revolutionary potential; incorporating new paradigms to the technical-assistance and management structures of public health; learn to act differently for and with the different; articulating the one and the multiple in complex, adaptive systems to care for people, groups and communities; and to establish synergies and other forms of communication, multidirectional and polyphonic, between peoples as a dialogic process constituting freedom, democracy and social justice.
CN07	It revealed that the markers of gender, class and race are presented as a vulnerable condition to the exposure of COVID-19 in the most diverse world scenarios. This context reveals the historical need to implement strategies to improve the lives of this population. To this end, it is necessary to adopt socioeconomic policies of greater impact and greater coverage, expanding access to better health, education, housing and income.
CN08	The incidence and mortality rates for COVID-19 were increasing in all Brazilian states, having been more accentuated among those with greater economic inequality. The association between Gini coefficient and COVID-19 incidence and mortality remained even when taking into account demographic and spatial aspects. Economic inequality can play an important role in the impact of COVID-19 in Brazilian territory, through absolute and contextual effects. Structural policies to reduce inequality are essential to face this and future health crises in Brazil.
CN09	The new coronavirus has had profound impacts on public health and the Brazilian labor market. In a context of paralysis of productive activities, informal workers have lost their livelihood, and many companies have already started to lay off employees with a formal contract, with a consequent increase in the informal rate of the Brazilian economy. Furthermore, with the fall in employment and the increase in defaults, the subsequent cancellation of health plans will tend to burden the already deficient SUS. The Brazilian government has been responding very timidly to the problems arising from the crisis and is going on a path that does not contribute to a quick exit from it. Formal and informal workers need social programs that generate jobs and income, promote an improvement in the living conditions of communities and precarious settlements, as well as need social protection. Such measures contribute to improving the health and quality of life of the poorest population, as well as leveraging several other sectors of the economy, such as civil construction. Inevitably, all resources aimed at financing these programs will increase the public deficit. But in the long run, with the resumption of growth and jobs, there will be an increase in GDP and an increase in revenue.
CN10	This global disaster and other futures do not turn into a humanitarian crisis, we are facing a challenge that requires profound changes in the driving forces that produce global disasters through inequities and vulnerabilities, as well as the reduction of national and international risk reduction governance capacities. We live in a context in Brazil where the threats of the political, social and economic have intersected with the hazards caused by the SARS-CoV-2 virus. These threats undermine risk governance capabilities and widen and intensify social inequalities, making Brazil the new epicenter of the global disaster by COVID-19 and a potential humanitarian crisis in poor areas.
CN11	An excess of overall mortality was observed with age, especially in individuals aged 60 years and over. The explosion of general mortality in Manaus and the high proportion of deaths at home / public roads exposes the seriousness of the epidemic in contexts of great social inequality and weak effectiveness of government actions, especially those aimed at tackling social inequalities and guaranteeing and strengthening of the Unified Health System.
CN12	The data and discussion demonstrate how the infection by SARS-CoV 2 and the death resulting from COVID-19 overlap with other territorial inequalities in the municipality of São Paulo. Thus, the pandemic can be an

<p>opportunity to bringing the fight against inequalities to the center of the debates and the territorial planning and public policy agenda. The multiple dimensions of inequalities that intersect the lives affected by environmental injustices are essentials to be observed in order to adequate each territorial intervention with existing conflicts. Therefore, critical approaches to ecological crises have responses to conflicts between nature and society. It is opportune to recover the model of urban development, subordinated to environmental justice, in which it is necessary to: democratize the territories; fight socio-spatial segregation; defend the right to access urban services and equipment, including health equipment; overcoming social inequality; and reduce socio-environmental vulnerability.</p>

Source: Research protocol, 2021.

The analysis of the literature showed in **article CN01** the benefits of actions such as supporting, sustaining, supporting, establishing, assisting and helping, which are able to comfort an individual. However, in the case of women-mothers, support can be synonymous with saving, especially in the current pandemic period, which brought chaos and fear from the physical to the soul. The extreme situation that humanity is experiencing has generated many reflections in the fields of health, economics, politics, human rights, although the oppressions against women remain potentiated, as well as the feminist struggle for gender equality. [6]

Reproductive work, which involves maintenance and care, which has always been fundamental, in this time of health crisis is a priority for survival. However, it continues to be devalued. Thus, the overload of tasks cannot be accepted or naturalized, as a result of the unjust sexual division of labor, accompanied by the historical devaluation of these tasks. [6]

This study reports on the experience of women-mothers who met, supported and continue to support each other, even if virtually, due to the suspension of face-to-face meetings due to the need for physical distance. However, collective actions, the result of spontaneous and / or institutional initiatives, see a horizon for overcoming gender inequality. [6]

In groups, whether virtual or in person, thousands of women have reflected on their daily experiences and questioned the sexist values forged by their families and society as unique and irreplaceable. The fight for gender equality is collective and is supported by these networks, which little by little are deconstructing the plots of patriarchy. [6]

Article CN02 reports on the Federal Government's response capacity in the context of COVID-19 and the setbacks in recent years. The first of these concerns the capacity for emergency responses to the pandemic for what remains of the National System of Food and Nutritional Security (SISAN), after so many dismantles,

emptyings and institutional dislocations, in addition to budget cuts. Faced with the extinction of the National Council for Food and Nutritional Security (CONSEA) and the ineffectiveness of the Interministerial Chamber for Food and Nutritional Security (CAISAN), the challenge of guiding actions and monitoring the impacts of the pandemic on food and nutrition security, in an articulated manner, is set. [7]

Another challenge lies in the participation of civil society in the process of planning and monitoring the realization of the Human Right to Adequate Food (DHAA), which is currently restricted to the possibility of financial donations within the scope of the Federal Government. [7]

It is noteworthy that the intersectoral perspective and the involvement of different institutional actors and civil society are central aspects in the consolidation of SISAN and were intentionally disjointed. The Federal Government's actions to mitigate the effects of COVID-19 hitherto proposed lie in emergency measures that focus mainly on access to income and food. [7]

However, the guarantee of DHAA and the achievement of food and nutritional security require, in addition to intersectoral articulation, coordinated actions that not only seek to mitigate the effects of crises, but measures in the medium and long term that can guarantee the constitutional right to food. The population's feeling of insecurity in the face of uncertainties in the context of the pandemic is amplified by the political crisis that has taken place, in addition to the contradictory orientations of the Government. [7]

The food and nutritional security agenda has been strengthened in the country in the last 15 years, and in the last three years its dismantling has been happening with the extinction of CONSEA and other setbacks, such as policies to encourage family farming, access to water and supply directly affecting the realization of food and nutrition security and DHAA. [7]

Finally, this moment of the pandemic highlights the biggest problem in Brazil, social inequalities. These, in turn, exacerbate the effects of COVID-19 on the population's living conditions. Thus, it is necessary to think, discuss and formulate national public policies that are based on the economy and social protection, but that are articulated with the guidelines of the National Food and Nutrition Security Policy (PNSAN) in the perspective of guaranteeing the DHAA. [7]

Article CN03 addresses the immediate health and social needs that point to the urgent need to redouble the commitment to prevention and investment in public health. The unresolved public health mission complicates and worsens the effects of the COVID-19 pandemic. Without explicit attention to the social determinants of health, the consequences of the immediate results of COVID-19 for society will be even greater inequities in health. [8]

To inform a new vision for public health and begin to face the challenges, a broad group must be brought together to plan reinvented public health. The members of the planning groups must include not only scientific leaders and public health educators, but, more importantly, those who would finance and execute the conclusions of this commission, such as policy makers, professionals, business leaders, among others. [8]

There are several stakeholders and professionals who are essential to these planning efforts. Representation is also needed from the public, especially those who experience inequalities in practice. Any effort should include a plan for implementing and evaluating the actions. The core elements of any plan must include continuous refinement and sustainability. The lessons from COVID-19 present an opportunity and an urgency to reimagine public health. [8]

It must be recognized that public health is a public good that deserves greater investment, in which all the silos of the health system must be reached, the burden and costs of precarious health must be reduced and science is advanced to identify and respond more quickly to threat, emerging in our changing world. [8]

Article CN04 reports that racism is a structuring system, generating behaviors, practices, beliefs and prejudices that underlie avoidable and unfair inequalities between social groups, based on race or ethnicity. And, institutionally, it obstructs access to goods, services and opportunities, being underlying the rules that guide the actions of these institutions. It is worth mentioning that racism is a social determinant of health, as it exposes black women and black men to more vulnerable situations of illness and death. [9]

In health care, racism can manifest itself in several ways, such as institutional, which most often occurs implicitly, when society maintains and reproduces a set of negative social stereotypes about the black population. Implicit prejudices are stereotypes or preferences for or against groups of people, according to which health workers (s) will determine how the care, attention and care of people will be, given their racial belonging, creating them a hierarchy in attendance. [9]

As a result, the black population is at greater risk of disparities in access to services in the face of the pandemic, in the quality of care received, access to diagnostic tests and health outcomes. In the United States, the Covid-19 pandemic has already presented itself in a racialized way, in which African-Americans were discharged in the scenario of illness and death due to the new coronavirus. These disparities have serious implications for the course of the pandemic, as insufficient diagnosis in a community leads to a greater risk that asymptomatic infected individuals will not go into isolation and that symptomatic individuals will start treatment late, worsening their healing prognosis and increasing chance of death. In the analysis of mortality by Covid-19 in New York the rates are 22.8 and 19.8 among Hispanics and blacks, respectively, while the rates for whites and Asians are, respectively, 10.2 and 8.4. [9]

In Brazil, it is known that blacks and blacks will suffer more severely from the impacts of the pandemic and its various negative outcomes, considering the history of lack of rights. Allied to this, national data have pointed to a higher prevalence of chronic and neglected diseases among the black population, the result of the greater social and economic vulnerability in which it is exposed and the lower access to health services. [9]

The pandemic reveals how unequal Brazil is and has made little progress in overcoming racism. However, to contain the expansion of the pandemic in the country and take the next step, it will be necessary, first of all, to face racism and inequalities, because, after all, the black population represents more than half of the Brazilian population. [9]

The country needs social protection policies implemented in the face of the Covid-19 emergency to ensure equity, also reaching quilombola communities, slums and suburban populations who, in order to receive emergency aid from the government, need to be exposed to infection in the agglomeration of communities hours of queuing at banks and lottery shops. [9]

It needs to ensure that access to Covid-19 diagnosis, whether by rapid test or immunological reaction test, is distributed equally to the population. Finally, greater

transparency must be demanded from the bodies responsible for pandemic data in the country so that they include race or ethnicity markers in the data for the entire course of the disease; maintain a systematic and agile routine of disseminating this data to society and expand the testing capacity in the country and do it differently in areas of greater vulnerability, such as people deprived of their liberty, people living on the streets and quilombola communities. [9]

Article CN05 shows that social conditions represent fundamental causes of health and disease, by determining access to important resources that can be used to prevent risks or minimize the consequences of diseases and by affecting multiple health outcomes through different mechanisms. The flexible and multi-purpose nature of economic and social resources means that they can be used in different ways in different situations to promote the health of its holders or to minimize the consequences of the disease when it occurs. [10]

Social conditions impact on the distribution of health status through inequalities of mobilizable resources, social selectivity in exposure to risks, the social constitution of health dispositions or preferences, discrepancies in the ways in which institutions process individuals and asymmetries for the health of spillovers, or indirect effects, of the costs and benefits of apparently unrelated exogenous processes. [10]

In the context of a dynamic system of changes in diseases, treatments, risks and protective factors, the general association between social conditions and the distribution of health is reproduced over time by translating the advantages in resources from one situation to another and through socially selective processes to replace the closest mediating mechanisms in the causal chain that leads to health and disease. [10]

Health disparities are fueled as a result of the social expansion of the ability to control health conditions. The existing social and economic inequalities make the benefit of the new capacity developed more appropriated by those segments of the population that have more resources, information and opportunities. [10]

The way of understanding social inequality has important implications for the study of health inequality. Inequalities are of different types and can influence health in different ways. Social class represents a specific type of social division based on property relations and the social division of labor. Divisions constituted by the inequality of rights and powers over valuable resources generate asymmetric relations of advantages and disadvantages between categories. [10]

There is a fundamental question of socially determined conditions and dispositions, or of lifestyles and health, which can affect the distribution of chronic diseases or adverse conditions associated with smoking, physical inactivity, stress, environmental problems, food, health care and others influential factors. [10]

A recent study of almost 17,000 cases of people hospitalized with Covid-19 in England showed that pre-existing health conditions, both comorbidity and obesity, have a significant independent association with increased hospital mortality. This means that the fatal outcome in the most severe cases, when it regresses in the causal chain, is not randomly distributed. [10]

In addition, clinical observation seems to reveal that prompt treatment has implications for disease progression. An English study showed that 17% of hospitalized patients required critical care. Mortality is higher in patients who are in general beds, and who have not had access to the Intensive Care Unit (ICU). Differences in the processing of people by health institutions greatly affect the progression and the final outcome of the disease. [10]

Article CN06 addresses that, with regard to the Covid-19 pandemic, territories around the planet were on the alert and the geopolitical game became more complex and placed the health crisis at the center of the globalization process, under the urgency of radical changes in everyday life. Countries, economic blocs, financial organizations and conglomerates, preventive or negative about the deleterious effects of the virus, ran in search of economic solutions and control measures, capable of reducing, as much as possible, the negative effects on the economy and the health of the populations. For the first time, the world has realized the fragile balance in which we are immersed and the value of universal health systems and public policies supported by the State, to ensure health security and social well-being. [11]

Uncertainties, vulnerabilities and ambiguities are current challenges that demand responses from governments and short, medium and long-term interventions that take into account the urgency of radical changes in the ways of producing and reproducing life in the different essential areas of human activities (water, habitation, transport, health, education, agriculture, among others), to preserve life. [11]

The epidemiological, economic and humanitarian scenario, which is triple threatening, demanded, from international health authorities and national governments, protective actions of surveillance and control, with a central focus on the practice of social isolation / removal that it recommends to all people to remain in their homes, and quarantine, for suspected and confirmed cases. These

measures aim to reduce the spread of the disease and prevent the immediate collapse of the hospital network (public and private), unable to respond, in time, to the geometric increase in the number of infected and to safely care for patients. [11]

Brazil adds, to the multiple faces of the current global health situation, other epidemic ailments and serious socio-environmental vulnerability that perverse exposes a significant portion of the population living in precarious and exceptional territories. These 'invisible' subjects to the world of neoliberal capital and policies live in inadequate housing conditions and urban infrastructure and survive on informal-unprotected work to meet basic human needs. They are vulnerable people, families and social groups, with a greater chance of exposure to risks in intra and peridomestic spaces; subjected to social isolation and quarantine and under multiple threats, they suffer the uncertainty of the disease and the imminent loss of family income. [11]

The Ministry of Health's Contingency Plan for Public Health Emergency of National Importance (ESPIN-Covid-19) indicates different strategies and technologies that should be incorporated into Health Surveillance actions in the Containment and Mitigation phases. However, the fragmentation between surveillance actions, specialized care and primary health care remains, and the precariousness in the integration of the three spheres of management of the system. [11]

The gap between recommendations, interventions and real needs of the territories for protection, risk control and solutions to vulnerabilities is evident, given the speed of infection / response and the homogeneity of diagnoses, which reveal numbers (infected, cases and death), without the corresponding accuracy to the different contexts of life of the populations, in the regional, state and municipal scales. [11]

Furthermore, they forget that the institutional actors who carry out most of the disease surveillance and control actions are medium-level technical workers, with great capillarity in the territories, but without experience in emergency situations, being exposed to uncertainties and pressures of all kinds: lack of guidance and training to face the problem; joblessness; and the absence of adequate technologies to develop your work safely and resolutely. [11]

Social isolation / removal and quarantine as health surveillance devices and protective measures to contain the spread of the SARS-CoV2 virus require translation of knowledge to be incorporated into the daily lives of the population. They demand questions to clarify gaps and to get answers about people's insecurity and health care; the

profusion of false information and the negation of the seriousness of the disease; the non-appropriation of technical guidelines resulting from the inappropriate use of information and communication; the necropolitics that vulgarize life and human rights; and the inability to translate scientific knowledge into popular knowledge. Without explanation for the installed chaos, the macabre statistics reveals the vertiginous increase of cases and deaths in vulnerable territories, subjected to the plundering of citizenship and all sorts of inequities. [11]

Article CN07 reports that in the face of the exponential growth of COVID-19, it is important to reflect on the vulnerability of specific groups. Although the SARS-COV-2 virus does not have a contagious selectivity, the impacts of the infection will be felt in different ways depending on race, class and gender. Such markers, due to socially produced inequalities, affect people in different areas of their lives in addition to health. [12]

Being infected is the same for people, however, there are differences in preventive measures and the possibility of worsening signs and symptoms. Regarding the class, it is observed that the low level of education associated with extreme poverty has a direct impact on non-compliance with public health instructions. [12]

With regard to the field of work, in addition to those who cannot meet restrictive measures because they depend economically on these earnings to survive, there are others who perform essential activities and, therefore, are exposed. An example of this audience are men with high rates of disease incidence, which may be related to the provision of their homes. [12]

Little is discussed about the gender impact of the Covid-19 outbreak, in which we observe a neutral position in public policies, as if men and women were infected and affected equally. In Brazil, class cuts are also linked to race, since according to data released by the Brazilian Institute of Geography and Statistics, in 2018, through the research "Inequalities Social by Color or Race in Brazil", 75% of people living in extreme poverty are self-declared as black or brown. [12]

Countries' social inequities organize their societies in ways that make them extremely vulnerable. Thus, the socio-economically disadvantaged are represented by racial and ethnic minorities who work in casual jobs and lack the financial resources necessary for self-isolation. In contrast, an increasingly small and select elite demonstrates the power of privilege in a pandemic, in which the most vulnerable will be the most affected. [12]

Still dealing with race as a social marker, racial capitalism is a fundamental cause of health inequities. A study carried out in the Detroit city of the USA with only

14% of its population being black, showed that 40% of COVID-19 mortality are black. This may be related to the high rates of comorbidities in this population, which makes them vulnerable to the worsening of COVID-19. [12]

These differences are evidence of structural racism that makes life difficult for black men and women from access to tests to detect the virus to treatment of the infection, facilitated by the power, money and prestige that can alleviate the consequences of the disease. [12]

The homeless, the poorest and the black are clearly more vulnerable to the consequences of COVID-19. Living on the street exposes you to countless sickening situations, being more latent in the pandemic. The difficulty of access to health services, added to the prejudice, reflects in even greater impacts. There is an urgent need for strategies to be created worldwide to increase access to health for this population. [12]

ArticleCN08 highlights the negative impact of economic inequality in facing the COVID-19 pandemic in Brazil, in which more unequal states showed more marked progression in incidence and mortality rates, while among the less unequal there were subtle increases. Even taking into account demographic and spatial aspects, the Gini coefficient was associated with an increase in the incidence and mortality rates of this disease. [13]

Economic inequality can have a significant impact on the health of populations, in addition to the effect of poverty itself. In the case of COVID-19, this appears to be due to at least two distinct effects: the absolute and the contextual. [13]

The absolute effect concerns the direct impact of income distribution on health outcomes. Small changes in the income of the poorest individuals produce significant changes in health outcomes, whereas among the wealthier the same change in income does not produce a major change in the standard of health. The contextual effect, in turn, shows that people living in unequal societies end up paying a health tax. In unequal locations, public health, safety, sanitation and urbanism structures are worse, conditions that degrade the quality of life of all, but which impact more severely the less favored in our social structure. [13]

The unequal distribution of opportunities can allocate individuals in different socioeconomic positions, according to their social group, sex, gender and ethnicity, creating cascading difficulties in accessing education, work and income. People at greater socioeconomic disadvantage tend to have differential exposure to the virus (because they have poorer quality housing, live in a larger number of people in smaller residences, use public transport with

greater agglomeration and have job insecurity, which makes social distancing difficult), differential susceptibility (because of food insecurity and food with poor nutritional quality, increased psychological stress and difficulty in accessing health professionals) and differential consequence (less social capital and reduced options for primary prevention and treatment). [13]

Together, exposure, susceptibility and differential consequence can produce higher rates of illness and death in these subgroups. Such an effect has already been observed in the National Household Sample Survey to assess the impact of COVID-19, which showed that blacks and browns, poor and uneducated, in addition to being more likely to be infected, also felt the economic impacts more severely of the pandemic. It is estimated that the risk of dying from COVID-19 may be up to 10 times higher among individuals living in the most vulnerable neighborhoods in the same city, and that blacks are 62% more likely to be victims of the virus. [13]

These findings underscore the urgency of developing intersectoral policies aimed at reducing economic inequality. Emergency financial assistance for the most vulnerable people was a positive short-term measure. However, long-term structural measures are essential for this and future health crises to have a reduced impact on the Brazilian population. [13]

Article CN09 reports that the pandemic affects the population that lives in informality with greater intensity and lives in precarious areas, that is, that has low and irregular incomes, without access to drinking water, decent housing, private health systems and social protection linked to the formal contract, such as vacation, minimum wage, 13th salary, Guarantee Fund for Time of Service (FGTS), maternity leave, medical leave and unemployment insurance. [14]

In 2009, informality in Brazil exceeded 50%, while in 2017, it was around 40.8%. In this context, in addition to the health crisis, one of the consequences of the pandemic is the increase in unemployment and, therefore, the increase in informal work, outsourced workers, subcontractors, flexible workers, part-time workers and the subproletariat. This population will need to be assisted with policies aimed at protecting them from hunger and poverty, that is, they will need to be inserted into a social protection network. [14]

According to the International Labor Organization (ILO), the impact on income-generating activities is especially severe for unprotected workers and for the most vulnerable groups in the informal economy. The economic crisis resulting from the coronavirus has been destroying several jobs in Brazil and abroad. The urgency of the

situation requires the adoption of public employment and income transfer policies to protect workers who live in informality while activities are paralyzed. [14]

In the long run, however, the country needs a development policy that implies abandoning fiscal austerity and increasing spending on existing social programs, in order to protect millions of workers who live in informality and live in precarious communities or settlements. , not to mention the street population. [14]

The pandemic showed, for example, two serious problems that prevent the fight against the disease in Brazilian slums: the lack of basic sanitation and the high density of human beings per square meter. Thus, directing resources to health and sectors identified as bottlenecks is essential to boost the economy with the generation of formal jobs. [14]

The crisis calls on the State to carry out sectorial policies, mainly in social and urban infrastructure, such as the resumption of works under the Program for Accelerating Growth in Favelas (PAC-Favelas). Spending in this sector is primarily responsible for promoting sustainable growth in the economy, in addition to generating positive externalities, which allow raising the productivity of other investments and adding gains in scale and scope to various activities. In fact, public spending on infrastructure works as a factor in reducing social and urban inequality, as well as contributing to improvements in the preventive health of the population. [14]

The federal government has at its disposal several programs focused on the social and economic field that were able to reduce social inequalities at the beginning of this century, such as PAC; the Minha Casa, Minha Vida Program; the BolsaFamília Program and the Employment and Income Generation Program (PROGER), with resources from the Worker Support Fund. These programs can and must be expanded in order to make the economy resume its long-term growth. [14]

Article CN10 states that the COVID-19 pandemic must be treated as a global disaster and requires a focus on processes, from the global to the local level. The first aspect to consider is the rapid spread of SARS-CoV-2 due to the intensification of global flows of people and goods, leading to an exposure of the world population. [15]

On the one hand, a model of economic inequality, concentration of income and a growing poor population exists, increasingly concentrated in urban areas and their peripheries, in precarious living conditions. On the other hand, the weakening of global governance institutions and capacities to deal with disasters and pandemics that require coordinated policies and actions. [15]

These global driving forces have been replicated at national levels, and in countries that are on the periphery of the global economic system, such as Brazil. These processes have intensified social inequalities and the concentration of income, resulting in a large vulnerable population with precarious living, working and income conditions. The vulnerable population is the most dependent on the actions carried out by the Unified Health System (SUS), health care for groups with a higher risk of COVID-19, such as the elderly and people with chronic diseases. [15]

They are also the ones who will suffer disproportionately from the impacts of the disease due to underfunding and disruption of the SUS within their health surveillance, testing and tracking capabilities, as well as primary health care, hospitals and intensive care units (ICUs). [15]

This means that COVID-19 brings new risk scenarios and worsening health situations, compromising the health sector's response to daily risks and may override risks of new health emergencies and disasters that may occur during the pandemic. As an example, we take the State of Amazonas, which has a larger territorial extension than the United Kingdom, Italy and France combined and which has 62 municipalities with a concentration of hospital structures in the capital. [15]

At the same time, we must consider that June and July are the months of flooding that affect the riverside populations, located in the most distant municipalities (sometimes up to 1000 km), whose access to these places can last up to three days. When considering the overlapping of COVID-19, health, floods, poor food security and nutrition, it is clear that the impacts of the pandemic go far beyond those caused by the SARS-CoV-2 virus. [15]

Regarding the challenge of risk governance, they require urgent decisions in uncertain conditions. In addition, the national and local, social and political heterogeneity of competing interests with short and long term impacts must be taken into account, leading to an extremely complex process in the management of risks and governance of these events. [15]

The health sector plays a fundamental leadership role in the risk management of a pandemic, a process that includes and depends on the participation of all segments of society, to work in a coordinated and coherent way in order to gain people's trust, which is a prerequisite for risk governance. Actions such as the consistency of official documents, press conferences and actions carried out by the health sector, as well as by various government sectors, in particular, the one who, in any democratic country, must

express leadership in the face of a pandemic, the president. The lack of coherence within the Brazilian government through contradictory or inapplicable messages results in an incomplete response to the pandemic. [15]

As for the challenges of social vulnerability and disasters in general, such as that caused by the pandemic COVID-19, due to its dynamics and characteristics that demand decisions under conditions of urgency and uncertainty, they require not only congruence and trust, but also the expansion of social participation and of shared knowledge. They make it possible to incorporate both the daily experiences of communities as part of addressing current vulnerabilities, and better preparedness and awareness of future risks. [15]

The lack of specific positioning of the federal government for the situation of such areas, lead to initiatives of self-management by popular movements. It shows, on the one hand, the absence of state and municipal policies that address these vulnerabilities, and on the other hand, the capacity for local and regional service, pointing out ways that can be incorporated into public policies. [15]

Article CN11 highlights the fragility of the health care network in Manaus and neighboring municipalities, added to the marked social inequality, which help to understand the critical situation of the COVID-19 epidemic. Regarding age, almost 70% of deaths occurred in people aged 60 or over, with comorbidities being more prevalent in this segment and have been associated with a poor prognosis. [16]

Another aspect concerns the differentials by sex, with a higher risk of mortality among men, although the lower lethality may be associated with a greater perception of the symptoms of the disease and the demand for health services in women, as men would only do so in the phases more severe, where therapeutic resources are generally less, and that higher levels of IgG antibodies in women could partially explain the higher lethality among men. [16]

An explosive increase in mortality due to respiratory problems, common complications of COVID-19, was observed during the epidemic. There was also a significant increase in mortality from other causes, a possible consequence of factors such as the patient's postponement of treatment as a means of avoiding exposure to the virus in hospitals. [16]

This study exposes the seriousness of the epidemic in contexts of great social inequality, weak public policy effectiveness and fragile health services. In this scenario, reinforcements must be implemented quickly by managers from the three spheres of government, in order to contain or mitigate the harmful effect of COVID-19, especially in

more precarious areas, where the impact of the pandemic on mortality tends to be more accentuated. [16]

Article CN12 concludes that in the SARS-CoV-2 outbreak its standard contagion follows global socioeconomic flows. These movements follow global connections, the virus reaches countries through their most globalized cities and, from there, expands on the country's regional networks, focusing mainly on one or two regions in each country. [17]

The most effective measure for containing transmission is self-isolation, quarantine and blocking, leading to a significant reduction in cases. Second, frequent cleaning of spaces and people. Therefore, two dimensions of inequality emerge to influence the spread of the virus: housing and neighborhood conditions and the social division of labor. [17]

In large Brazilian cities, peripheries and precarious areas have a denser population, with significant home congestion and the absence or deficiency of urban infrastructure, as pointed out by environmental studies. This high-risk population is one that relies heavily on commuting to work, since they are in the lower income classes. [17]

Regarding the disease, the dimensions that expose territorial inequalities are different, especially the presence of comorbidities and access to health. The most prevalent comorbidities for deaths due to COVID-19 are hypertension and diabetes, chronic diseases that are intensified by inequality. Poverty and inequality are the main factors of morbidity and early death worldwide. It was found that the individual socio-occupational categories influence the relationship between the level of physical activity, alcohol and tobacco consumption and the presence of these comorbidities. In Brazil, some studies relate demographic characteristics to the incidence of chronic diseases. [17]

Unequal access to health care during the pandemic, can also explain the relationship between inequalities and comorbidities, aggravated in the COVID-19 crisis. The distribution of medium and high complexity care is provided by networks of micro and macro health regions, therefore, the concentration of beds is not causally linked to territorial inequalities. On the other hand, the availability of public beds in relation to private beds is considerable, since the differences in demand between SUS and private intensive care beds also show an irregular center-periphery pattern. [17]

Another fundamental factor is related to environmental injustice, which has been expressed by the racial segregation bias in deaths by COVID-19. Activists and social movements publicly denounced the growing

infection among the black and poor population, and their greater difficulty in accessing adequate treatment. Infection and registered deaths of blacks increased five times in April, while for whites, three times. [17]

IV. CONCLUSION

From this study it was possible to understand about the magnitude of inequalities and inequities related to the pandemic caused by Sars-Cov-2 and its consequences on public health, experienced mainly by the most vulnerable groups.

Furthermore, it is concluded that it is necessary to mobilize at the global, regional and national levels the means to stop the worsening of socioeconomic inequalities, and consequently health, which will come as a result of the economic contraction.

Economic policies, especially the model for allocating resources in relation to areas that have proved essential for coping with the pandemic (health, science and technology, education and social protection) should be reviewed to increase the protection of countries against future shocks. The recovery of employability will need to be made while seeking to mitigate the effects of changing technological standards on production, which already tended to have perverse effects on employability.

Health economists have argued that the activation and prioritization of a medical industrial health complex, properly designed and implemented, can be part of the solution, bringing economic dynamism and improving the capacity to respond to existing health problems, which harm the population, and other epidemics that are likely to come.

Finally, it is necessary not to neglect the individual dimension in which life at the end takes place, despite being strongly influenced by the broader phenomena mentioned. Therefore, the perspective of social interdependence helps us to configure an economy of affections, articulating the collective and individual dimensions. An approach that helps us to develop a more integrated view of the phenomena, in the years we lived with COVID-19.

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