



Article

Social vulnerability in the context of the COVID-19 pandemic: a bioethical discussion

Vulnerabilidade social no contexto da pandemia de COVID-19: uma discussão bioética


Vulnerabilidad social en el contexto de la pandemia del COVID-19: una discusión bioética

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Abstract

Objective: To analyze, from a bioethical perspective, social vulnerability in relation to health during the context of the COVID-19 pandemic. **Methods:** The study included peer-reviewed publications from January 1st until December 31st 2020, identified in Pubmed, SciELO and LILACS data basis. Mesh terms were utilized for research in Pubmed as follows: “COVID-19” conjugated with the terms: “vulnerable population”, “population groups”, “social determinants of health”, “health equity”. Portuguese and Spanish equivalents DECS terms were used for searching in the other two databases. **Results:** a total of 132 articles were found. After applied inclusion and exclusion criteria, were 21 eligible articles. The most recurrent themes were: racial, ethnic and social-economics, gender, age, disability and chronic health conditions. Articles addressing more than one theme were observed, integrating different aspects of vulnerable populations. A bioethical discussion with focus in vulnerability based in the data retrieved took place and connections with discrimination and social determinants of health were made. **Conclusion:** Results point to the violation of rights explained in the Universal Declaration of Bioethics and Human Rights. By increasing the disparity in morbidity and mortality from COVID-19 of population groups already impacted by the social determination of health, there is a violation of the right to health, indicating that governments and societies fail to respect the vulnerability of social groups in the pandemic context.

Keywords

COVID-19. Vulnerable populations. Population groups. Social determinants of health. Health equity.

Resumo

Objetivo: analisar, sob um olhar bioético, a vulnerabilidade social referente à saúde durante o contexto da pandemia de COVID-19. **Metodologia:** foram incluídas publicações de 1º de janeiro a 31 de dezembro de 2020, revisadas por pares, identificadas nas bases de dados Pubmed, SciELO e LILACS. Foram utilizados para realizar a busca na base Pubmed o termo MESH “COVID-19” conjugado com os termos: “vulnerable population”, “population groups”, “social determinants of health”, “health

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equity”. Os descritores DECS equivalentes em português e em espanhol dos termos MESH foram utilizados na busca nas outras duas bases. **Resultados:** de um total de 132 artigos, após a aplicação dos critérios de inclusão e exclusão, foram identificados 21 artigos elegíveis. Os temas mais abordados na amostra foram: vulnerabilidades referentes a pessoas idosas, raça, minorias étnicas, condições socioeconômicas precárias, gênero feminino, pessoas com deficiência e condições crônicas de saúde. Observou-se artigos abordando mais de uma temática, integrando aspectos diversos de populações vulneráveis. Com base nos dados encontrados foram feitas análise e discussão com foco em vulnerabilidade como conceito bioético, além de conexões com discriminação e determinação social da saúde. **Conclusão:** os resultados apontam para a violação de direitos explicitados na Declaração Universal de Bioética e Direitos Humanos. Ao aumentar a disparidade da morbimortalidade por COVID-19 de grupos populacionais já impactados pela determinação social da saúde, constata-se uma violação do direito à saúde, indicando que governos e sociedades falham em respeitar a vulnerabilidade de grupos sociais no contexto pandêmico.

Palavras-chave

COVID-19. Populações vulneráveis. Grupos populacionais. Determinantes sociais da saúde. Equidade em saúde.

Resumen

Objetivo: analizar desde un punto de vista bioético, la vulnerabilidad social relacionada con la salud durante el contexto de la pandemia de la COVID-19. **Metodología:** se incluyeron publicaciones revisadas por pares del 1 de enero al 31 de diciembre de 2020, identificadas en las bases de datos Pubmed, SciELO y LILACS. Se utilizó el término MESH “COVID-19” para buscar en la base de datos Pubmed junto con los términos: “población vulnerable”, “grupos de población”, “determinantes sociales de la salud”, “equidad en salud”. Los descriptores DECS equivalentes en portugués y español de los términos MESH fueron utilizados en la búsqueda en las otras bases. **Resultados:** de un total de 132 artículos, tras aplicar los criterios de inclusión y exclusión, se identificaron 21 artículos. Los temas más discutidos fueron: vulnerabilidades relacionadas con los adultos mayores, raza (énfasis en personas negras), minorías étnicas, condiciones socioeconómicas precarias, género femenino, personas con discapacidad y condiciones crónicas de salud. Se observaron artículos que abordaban más de un tema, integrando diferentes aspectos de las poblaciones vulnerables. A partir de los datos encontrados, se realizó análisis y discusión con foco en la vulnerabilidad como concepto bioético, así como las conexiones con la discriminación y la determinación social de la salud. **Conclusión:** los resultados apuntan a la violación de los derechos explícitos en la Declaración Universal de Bioética y Derechos Humanos. Al aumentar la disparidad en la morbimortalidad por COVID-19 de grupos poblacionales ya impactados por la determinación social de la salud, se vulnera el derecho a la salud, indicando que los gobiernos y las sociedades no respetan la vulnerabilidad de los grupos sociales ante la pandemia.

Palabras clave

COVID-19. Poblaciones vulnerables. Grupos de población. Determinantes sociales de la salud. Equidad en salud.

Introduction

The field of bioethics emerged at the end of the 1960s and 1970s, expanding its studies beyond medical ethics and extending the scope of the discussion to other topics, such as the doctor-patient relationship and medical professionalism (1). Going beyond the individual level of care, we must pay attention to the ethical and bioethical aspects involved at the population level in the field of public health. In 2002, Callahan and Jennings pointed out the importance of recognizing that we had no control over infectious diseases and that, more than the advance of technology, the health of populations is also dependent on socio-economic measures and good public health policies (1).

Considering the scenario of lack of control of an emerging infectious disease at the pandemic level, when discussing public health, we must pay attention to the bioethical principles present in the Universal Declaration on Bioethics and Human Rights (UDBHR) of the United Nations Educational, Scientific and Cultural Organization (UNESCO) regarding: respect for vulnerability, non-discrimination and non-stigmatization, human dignity and human rights, social responsibility and health, benefit sharing, solidarity and cooperation (2). The article aims to discuss the context of the COVID-19 pandemic in the context of public health, with an emphasis on social vulnerability, alongside other bioethical concepts and principles that contribute to enriching this debate, based on literature selected for this purpose.

Vulnerabilities, social determinants of health and non-discrimination

Article 8 of the UDBHR deals with respect for vulnerability and personal integrity (2). Vulnerability is a principle that is difficult to define, and in this paper we will use the concept of a vulnerable person as one who is partially or absolutely incapable of protecting their own rights and interests. This person may have insufficient intelligence, education, resources, strength, power and other attributes to protect their own interests (2,3).

Vulnerability is a relatively new concept in bioethics, having been widely developed after the Belmont Report in 1979 (4), and applied mainly in the context of research participants (3). Initially considered a secondary principle to justice and respect for people, vulnerability was promoted to a fundamental principle of bioethics when UNESCO published the UDBHR, and is no longer applied only in the context of research, but rather in the context of health care. We also have a breakdown of the concept of vulnerability into five aspects: social, economic, existential, cultural and environmental.

Discrimination can be defined as attitudes that lead to individuals or social groups being treated in a way that violates the principles of justice and equality. By ignoring the principle of fairness in the treatment of individuals, whether particular characteristics are taken into account, we have discrimination. Stigma is already a cultural value attributed to certain particular attributes, usually regarded as undesirable and deviant. A stigmatized population can, at the same time, be considered vulnerable from the moment it fails to protect its interests and rights, and ends up receiving discriminatory treatment (5).

Amid the huge number of people infected and dying from COVID-19 in 2020 and 2021, the question arises as to how the social determinants of health can be observed in this disease. Social determinants of health are understood to be the impact that the living and working conditions of individuals or social groups have on their state of health, with such conditions of discrimination being unfair, avoidable and unnecessary (6), reflecting inequity in access to health, resulting in higher morbidity and mortality, lower life expectancies and higher infant mortality. Despite being an acute infectious disease, which was initially more related to people with financial conditions that allowed them to travel internationally, the transmission of the coronavirus has reached all social strata. Therefore, even though there are already risk factors associated with inherent human conditions, it is interesting to investigate the impact of COVID-19 on vulnerable populations.

Vulnerability is more than a fundamental principle of bioethics, it is considered essential to the production of laws and policies of a welfare state (3,7). It is therefore an important pillar in the development of bioethics and should be taken into account when analyzing clinical research projects,

for example, and is also fundamental to professional health practice and sustainable, equitable and economically viable medicine.

The vulnerability of an individual or group can be considered permanent or transitory. Permanent vulnerability occurs regardless of special and local conditions. Transient vulnerability, on the other hand, can be the result of a specific condition and can be resolved or overcome by changing that condition. This can be exemplified by events such as a pandemic, natural disaster, armed conflict or immigration.

Another point refers to vulnerability as a lack of autonomy. With the exception of social vulnerability, all other types of vulnerability imply partial or total difficulties in making free and informed decisions; in the case of social vulnerability, being a member of a certain group already entails vulnerability (3). Although Ten Have (3) does not explain exactly why this phenomenon occurs, the author establishes that the remedy for such vulnerability is the inclusion of these individuals in decision-making and monitoring processes. Within these premises, social vulnerability in the context of health is considered to be when individuals or groups have their autonomy hindered by issues that go beyond individual cognition, to the extent that they are excluded from the decision-making process of public policies and lack of monitoring regarding the provision of services and the guarantee of these individuals' rights in an equitable manner. The principle of vulnerability, therefore, is closely related to the social determinants of health, so that vulnerable people are unable to protect their own health due to conditions of systematic inequities and discrimination.

Humanitarian Crisis and COVID-19

The COVID-19 pandemic in Brazil can be considered a humanitarian crisis. The concept of a humanitarian crisis is a large-scale event that affects populations or societies causing a variety of stressful consequences that can include: high numbers of deaths, disruptions to ways of life, forced displacement and other serious political-economic, social, spiritual and psychological effects (8). Given the impact of the disease on the country, with 194,000 people dying in 2020 (9), reaching the 500,000 mark in 2021 (10), there is also an increase in unemployment (11) and a worsening of the mental health of the population in social distancing (12), elements that indicate the existence of a humanitarian crisis caused by an epidemic or outbreak.

The United Nations (UN) has ordered the strengthening of the UN's coordination of emergency humanitarian assistance, stating that the governments of member countries have an obligation to respond to humanitarian emergencies and crises within their borders. Expressing actions needed prior to the pandemic context, the UN indicates that international emergency medical teams should help with this strengthening, filling identified gaps in health systems and creating effective local teams where necessary. These teams must not only treat acute illnesses and injuries, but also guarantee continuity of care for people with chronic conditions and ensure the comfort and dignity of patients with no prospect of survival (8).

The right to health is spelled out in article 25 of the 1948 Universal Declaration of Human Rights (UDHR) (13). In terms of the Brazilian Constitution of 1988 (14), we have the health reform and the formation of the Unified Health System (SUS), which now guarantees health as a right in Brazil, as stated in article 196.

Health, as a right, is based on the principle of equality. Equality, associated with justice, and equity as a bioethical principle, are represented in the UDBHR (2) in its article 10, and it is

fundamental, when addressing dignity and rights, to ensure that everyone is treated fairly and equitably. Equity in health will be considered in this work as a state of complete absence of inequalities in health opportunities for people from historically or socially disadvantaged groups, and one way of measuring inequity would be through models of social determinants of health (15).

Faced with the pandemic scenario that has evolved rapidly across the planet - with unprecedented repercussions on health systems, the economy, the physical and mental health of populations in various countries, as well as other sectors of human life - a greater understanding of the social vulnerabilities that have affected, and still affect, population groups differently is essential. On the other hand, the availability of a large body of literature on the subject in a relatively short period of time makes it easier to obtain information from review studies. The aim of the study was to analyze health-related social vulnerability during the COVID-19 pandemic, through an integrative review of the literature published on the subject, as well as to discuss the results taking into account the human right of access to health and the bioethical principle of non-discrimination.

Methodology

The integrative review included publications from January 1st until December 31st, 2020, identified in the Pubmed, Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Health Sciences Literature (LILACS) databases. The articles had to be written in Portuguese, English or Spanish and published in peer-reviewed journals.

The search in the Pubmed database used the MESH term “COVID-19” combined with the following terms: “vulnerable population”, “population groups”, “social determinants of health”, “health equity”. The DECS descriptors equivalent in Portuguese to the terms used in MESH, such as “coronavirus infection” (synonym COVID-19), “vulnerable population”, “population groups”, “social determinants of health”, “health equity” were used to carry out searches in the SciELO and LILACS databases. When searching Pubmed, the following filters were used in combination: “clinical trial” + “meta-analysis” + “randomized controlled trial” + “review” + “systematic review”.

All the articles in the search results were compiled into a table which would serve as the basis for the process of selecting the articles to be included in the review. In a first screening, articles containing the descriptors in the title, abstract and/or keywords of the articles were selected. In a second analysis, for eligibility, articles were selected that were closer to the social vulnerability approach. Also excluded were notes, comments, points of view, analyses, opinions and research proposals.

Articles were excluded if they could not be accessed free of charge, if the language was not one of those listed above, if the subject matter was different from the one proposed here, or if the scope included coronavirus infections other than SARS-CoV-2. Articles whose approach was vulnerability in the clinical sense of “susceptible to infections” and did not address issues related to social vulnerabilities were also excluded. Finally, duplicate articles and those whose aim was to establish proposals to avoid a worsening of aspects of social vulnerability based on elements prior to the pandemic without providing data on this vulnerability during the pandemic itself were removed from the sample.

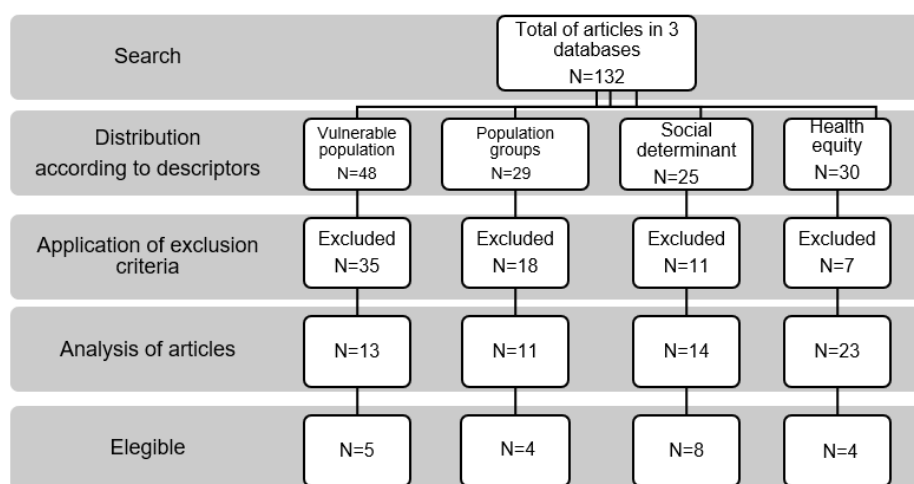
The results obtained were first analyzed bibliometrically, including the month of publication in 2020, the predominant nationality of the authors' institution, the language of the article and the type of study based on the method used. After categorizing the studies, the main results were summarized and compiled to present the data in table format. Knowledge was then integrated and the results discussed

from a bioethical perspective, with an emphasis on social vulnerability, but also taking into account the human right of access to health and the bioethical principle of non-discrimination.

Results

A total of 130 articles were found in the search on the Pubmed platform, 2 articles identified on the SciELO platform and none on LILACS, making a total of 132. After the initial screening, consisting of reading the title, abstract and keywords, 61 articles remained in the four descriptor categories. After a full reading, 21 eligible articles were identified, as shown in the flowchart in Figure 1.

Figure 1. Flowchart of article selection



Source: own elaboration.

A pattern was observed in the eligible studies, most of which were reviews: out of a total of 19 review articles, 14 were narrative reviews, 4 were systematic reviews and 1 was an integrative review, published after May, in English, in international journals.

The month of 2020 with the most eligible publications was September, with 6 articles. Two articles were also published in Portuguese as well as English. More than half of the sample of articles came from the United States, with 11 articles by American authors and 1 article by Canadian authors. There were 2 articles from Latin America, 1 from Asia, 3 from Europe and 2 from Australia. There were no articles from Africa.

The topics covered in the selected productions were divided into the following categories: racial, ethnic, gender, age group, chronic diseases, disability and economic-social. The racial theme consists mainly of addressing the situation of black people in the COVID-19 pandemic, less frequently including indigenous people and people of Asian origin. The ethnic category is more focused on minorities and immigrants. In the articles that addressed the economic-social bias, there was a discussion about homeless and peripheral populations or those from disadvantaged neighborhoods, for example. It was also noted that some productions addressed certain topics in an intersectional way: elderly people with dementia, black and ethnic minority women, low-income people with chronic kidney disease. Some articles dealt with one or more themes, which is why the total was over 21.

Analysis of articles by descriptor

When analyzed by descriptor, vulnerable population gave rise to five eligible articles (Table 1). Vulnerabilities relating to older age groups were addressed in three articles (16,17,19). One of the articles (17) addressed dementia in elderly patients with cognitive impairment, emphasizing that any difficulties in understanding prevention measures and symptoms of COVID-19 infection can increase the vulnerabilities of people affected by these conditions. Two articles (16,19) on COVID-19 therapy and prophylaxis pointed out that the elderly and people with comorbidities tended to be under-represented or even excluded from the samples.

A systematic review article aimed at investigating the impact of the COVID-19 pandemic, protection measures and social isolation among people with physical disabilities, highlighted the occurrence of symptoms such as mood swings, difficulty sleeping and fear of seeking health services during the pandemic (18). One article was identified that focused more on socioeconomic issues and modeling studies to help deal with the pandemic in underdeveloped countries (20). Models can help in the targeted development of policies based on: projecting travel restrictions, determining new epicentres of dissemination, the epidemic potential depending on the measures adopted, when to relax measures to restrict the movement of people, reopening schools, the impact of vaccination and economic estimates to minimize the crisis. Developing countries have tended to delay the onset of cases due to the smaller number of travelers. In addition, compared to developed countries, they have a younger population, with fewer risk contexts. However, they have weaker health systems, with overcrowding and comorbidities in these scenarios. Finally, the article mentions Brazil as an example of a developing country with rapid transmission due to, among other factors, inadequate public policies, high population density and high rates of informal work (20).

It was noted that the reviews in this segment were all published in English by researchers from developed countries. The analysis of the texts therefore reveals that there was a lack of publications from Latin American and African countries in the samples reviewed.

Grouped under the descriptor population groups (Table 2), four eligible publications were identified. The theme most often addressed in this descriptor was racial vulnerability, with two articles focusing on ethnic minorities together with racial minorities, emphasizing the disparity in mortality rates compared to white people (21,22). Even adjusting for age, sociodemographic factors and the presence of comorbidities, people from ethnic minorities are twice as likely to die from COVID-19 as white people (21).

Table 1. Articles identified on Covid-19 and vulnerable populations

Authors, type of study and month of publication	Objectives	Key points
Prendki et al. (16) Systematic review, december	Examining the participation of older people in therapeutic and prophylactic studies of COVID-19.	Elderly people are under-represented in clinical studies. Despite being a very affected population, there are cut-outs that exclude this age group.
Ryoo et al. (17) narrative review, November	Obtain information on aspects of COVID-19 in elderly patients with cognitive impairment.	Vulnerability linked to age, with accelerated cognitive decline due to lack of access to therapies and changes resulting from social isolation. Difficulty understanding prevention measures and symptoms of the clinical condition, which can increase vulnerabilities.
Lebrasseur et al. (18) Systematic review, november	Review the impact of the COVID-19 pandemic and protection and isolation measures among people with physical disabilities.	Eleven studies: 1 prospective and 10 cross-sectional. Fear of seeking health services during the pandemic, mood swings and difficulty sleeping were observed.
Venkatesulu et al. (19) Systematic review, August	To review ongoing clinical studies in order to provide an overview of the interventions tested clinical reasoning geographical distribution and conclusions reached.	Only 5.5% of the 829 studies included the elderly and people with comorbidities in the sample. Most of the studies were carried out in developed countries.
McBryde et al. (20) Narrative review, June	Describe how modeling has influenced pandemic policies from the outset.	Models can help middle- and low-income countries prepare for the pandemic. Economic and social factors should be among the variables in the model. Brazil was the most affected country among those analyzed, partly due to the inadequate health policy response.

Source: own elaboration.

Gender was addressed in two articles (22,24), explaining how women are affected by unequal working conditions, paid or unpaid, during the pandemic. One of the articles addressed the impact of the pandemic on women, who account for around 70% of the workforce of essential service professionals, leading to greater exposure and sometimes increased risks due to a lack of protective equipment with adequate size and sealing (24). Violated reproductive rights, increased levels of unemployment and the need to take on multiple jobs were problems addressed in the article that showed the increase in women's vulnerability (24). It is worth mentioning that women's triple workload increased during the pandemic, in addition to higher rates of gender-based violence associated with a reduction in the social support network (24). It was also pointed out that, due to the increase in stressors and tasks associated with gender roles, women were more susceptible to suffering mental health setbacks. However, they are more adherent to preventive measures and physical isolation, which is a protective factor against coronavirus infection (24).

There was also the issue of social class, which was added to the discussion in three of the four articles (21,22,23), highlighting the intersectionality between social class (poverty), non-

white people and/or people from ethnic minority groups, leading to a greater risk of exposure to the coronavirus due to not having health insurance, living in overcrowded houses and having greater difficulty in social isolation.

Table 2. Articles identified on COVID-19 and population groups

Authors, type of study and month of publication	Objectives	Key points
Dhillon, Breuer, Hirst (21) narrative review, June	Summarize evidence on points of controversy in discussions on social media and news channels.	Ethnic minorities are disproportionately affected: one third of severe COVID-19 patients are from ethnic minorities. Even adjusting for age, sociodemographic factors and comorbidities mean that people from ethnic minorities are twice as likely to die from COVID-19 as white people.
Selden, Berdahl (22) Empirical, July	Using data from the <i>Medical Expenditure Panel Survey</i> (MEPS), reformulate and construct hypotheses and proposals on the causes of disparities related to COVID-19.	When adjusting for age, the difference in the prevalence of comorbidities cannot explain the disparity in COVID-19 outcomes related to skin color in isolation. The variables age, type of occupation and household are also insufficient.
Estrela et al. (23) Integrative review, september	Reflect on the impacts of COVID-19 from a gender, race and class perspective.	Extreme poverty and low schooling have an effect on non-compliance with recommendations on public health measures. Homeless people have difficulty accessing health services and may have their symptoms minimized by professionals. 75% of people living in extreme poverty are black or brown.
Connor et al. (24) narrative review, September	Using evidence from previous pandemics and current knowledge of COVID-19, highlight elements related to the challenges presented to US women, associated with health workforce capacity, reproductive health, drug development, domestic violence and mental health.	Among health professionals, 75% are women, with an increased risk of contamination due to the roles they play. Higher unemployment rates, forcing them to take on jobs in multiple institutions without the right to paid leave for health reasons. Reduced access to reproductive rights, with a greater risk for pregnant women than for women outside the gestational period. Women are under-represented in drug development research. Increase in gender-based violence and its protection network. More susceptible to greater impact on mental health.

Fonte: own elaboration.

When examining the sample of articles found under the descriptor social determinants of health (Table 3), eight articles were selected. One article (31) dealt with a specific health condition - chronic pain - which poses a threat from a psychosocial point of view, putting those affected at risk of violations of their right to access health care and increasing the incidence of domestic violence. Although pain management is a right, the authors highlighted that the pandemic has led to reduced access to coping strategies, aggravating the physical and psychological suffering of people with chronic pain.

Four articles (26,27,29,30) mentioned the discrepancy in the health conditions of the black population, highlighting their role in essential services, which makes it impossible for them to be socially isolated. One article (29) mentioned the indigenous population, exploring the smaller proportional number of ICU beds in the indigenous health system, increasing their vulnerability. One of the articles that addressed the issue of race stressed that little has been done to mitigate the social determinants that have been known for decades, and that this question can be answered by examining the structural racism and discrimination to which people of African descent are subjected (26).

Four articles mentioned issues related to ethnicity, one of which brought up the prejudice faced by families of Asian origin, given the association between the emergence of the pandemic and China (27). Four articles dealt with socio-economic conditions, three of which intersected with minorities (25,29,30). Researchers (30) have pointed out that the disproportionate number of deaths in socially vulnerable populations, such as racial/ethnic minorities, will not be eliminated without efforts to address social determinants. One study (28) summarized the impact of the five social determinants of health on the COVID-19 pandemic in the USA in five categories: economic stability; social context and community; education; neighborhood and built environment; health and health care (28).

An examination of the texts found under the health equity descriptor (Table 4) showed that five articles were selected. Issues relating to race were addressed in four publications, with one article combining this theme with chronic kidney disease and another associating it with gender issues. When addressing chronic kidney disease, issues relating to migrants were highlighted, such as refugees and undocumented populations who have difficulty accessing and fear seeking health services and being reported to migration services (33). Points relating to the elderly and the homeless population have been addressed: both have difficulties in adhering to teleconsultations and isolation measures, which can lead to functional worsening and higher mortality (33).

Table 3. Articles identified on COVID-19 and social determinants of health

Authors, type of study and month of publication	Objectives	Key points
Khalatbari-Soltani et al. (25) Narrative review, May	Investigate the extent to which current COVID-19 data takes socio-economic factors into account.	Reports suggest that COVID-19 has higher rates of hospitalization and death in geographical areas that are marked by social disadvantage and the presence of ethnic minorities.
Ajilorea, Thames (26) Narrative review, June	Describe factors that contribute to the impact of COVID-19 on people of African descent	Stress leading to worse health conditions Greater representation of Afro-descendants in key sectors of the economy (not social isolation). Social determinants have already been established and little has been done to reduce inequality.
Roberts, Tehrani (27) Narrative review, June	Draw a parallel between the 1918 influenza pandemic and COVID-19 in the USA.	There is a greater representation of people of African descent in hospitalizations than in the general population, with a higher proportion in the essential sectors, 70% of whom did not have a university degree. A difference in the treatment of essential workers, with incentives to go to work sick.

Singu et al. (28) Narrative review, July	Summarize the impact of the five social determinants of health on the pandemic: economic stability; social context and community; education; neighborhood and environment; health and health care.	The text works in detail on the following aspects: economic stability, social context and community, education, neighborhood and built environment, health and health care, access to health, food deserts.
Gray et al. (29) narrative review, September	Identify vulnerability factors and strategies to mitigate them.	People of African descent are less likely to be tested for COVID-19 despite having symptoms. Greater representation of minorities among essential workers and those living in poverty, making them more susceptible to overcrowded home environments and difficulty performing social distancing.
Phillips et al. (30) revisão narrativa, setembro	To review the evidence of genetic predisposition to high-risk comorbidities that may be relevant to a full understanding of the disparity in COVID-19 deaths in black people.	Genetic factors, the presence of comorbidities and social determinants have an intersection that leads to higher mortality in the black population. The disproportionate number of deaths among socially vulnerable populations and ethnic/racial minorities will not be eliminated without efforts to address social determinants.
Karos et al. (31) Narrative review, October	To investigate factors that precipitate, worsen and maintain pain through social threats to individuals affected by chronic pain.	Social distancing, social disconnection and loneliness are amplified, leading to psychiatric illnesses, exacerbation of pain and physical limitations. Risks of social and home proximity: contribution to exacerbation and chronicity of pain. Reduced access to high-quality pain management.
Chu et al. (32) Systematic review, november	Identify the social consequences of quarantine and strategies to mitigate the negative social impact of confinement.	Seven consequences of movement restrictions were identified, the negative impacts being: on mental health, on the general population and worse on the unemployed, inequity of communication leading to difficulties in accessing information on infection prevention care, economics at an individual and commercial level (prejudice suffered by businesses run by families of Asian origin). Positive factor: promotion of altruism as understanding that your isolation has a direct effect on the health safety of others.

Source: own elaboration.

One of the articles, by Brazilian authors, addressed the lack of data disaggregated by color in Brazil, which translates into the invisibility of social segments and the violation of basic rights through denial and obscurantism. The authors defend the need to fill in the race/color item in health information systems, in order to analyze data based on these criteria (35). Finally, the survey addressed the issue of the lack of empathy of people considered to be at low risk of severe COVID-19 towards public health care (36). In opposition to the collective solidarity that permeates public health actions, people who don't need to worry about their own health or that of those close to them have started to minimize the effects of the pandemic and worry more about saving the economy. This article has discussed how the information given to the population can influence their opinion: by emphasizing the concept of risk groups, instead of highlighting the risk as that of the whole community, it can lead to a different effect from that sought in public health.

Table 4. Articles identified on COVID-19 and health equity

Authors, type of study and month of publication	Objectives	Key points
Novick, Rizzolo, Cervantes (33) Narrative review, September	Describe the disparities and additional difficulties of populations of patients with chronic kidney disease (CKD), including homeless people, the elderly, ethnic and racial minorities and immigrants.	Elderly people with CKD have an increased risk of negative outcomes due to COVID-19, risks related to infection of caregivers at home and in nursing homes. Worsening functional <i>status</i> , frailty and depression due to social isolation, leading to lower adherence to treatments for CKD. Homeless populations have a higher incidence of comorbidities, 10 times higher mortality than the sheltered population and greater difficulty in adhering to hygiene measures. Women with CKD are more likely to belong to ethnic and racial minorities, be single mothers, have low education and income, and are more exposed to infection. Blacks and Latinos are more likely to progress to CKD more quickly.
Alcendor (34) Narrative review, August	Examine the underlying clinical implications that predispose minorities and the adverse outcomes that contribute to increased mortality risk.	Health disparities predate the COVID-19 pandemic in the US. African-American populations have a higher incidence of comorbidities that are risk factors for COVID-19: diabetes, hypertension, cardiovascular disease and obesity. One strategy to combat the disparity in COVID-19 mortality would be to mitigate the social determinants of health, establish preventive care and treat comorbidities.
Santos et al. (35) Narrative review, September	Discuss how the inclusion or non-inclusion of social determinants of health in epidemiological analyses of the COVID-19 pandemic manifests itself as a mechanism for implementing necropolitics and as a producer of health inequalities.	There is a lack of data disaggregated by color, although there are spaces to fill in epidemiological notifications and death certificates. There is a need to effectively fill in the race/color item in health information systems. This omission may be aimed at making the people most affected by the pandemic invisible. Denial of basic rights due to omission and obscurantism on the part of the state translates into structural racism, necropolitics and genocide. Greater disclosure of data by race/color in Brazil is needed.
Yildirim (36) Survey, December	Access how the different scenarios of the pandemic influence public opinion on whether it is a serious threat and whether it is more important to save lives or the economy.	People who don't have to worry about themselves or family members use the information that COVID-19 has a greater impact among the elderly and people with comorbidities to care less about the threat of the disease and more about "saving the economy". The dissemination of scientific knowledge about the uneven impact of the disease may be leading less exposed people to have an optimistic bias towards the severity of the disease and less adherence to preventive care. In public health, it may be more effective to convey messages of solidarity and unity in relation to the pandemic: " <i>We are all in this together</i> ".

Source: own elaboration.

Discussion

When considering individuals and populations vulnerable to the pandemic in the context of bioethics in public health, we will adopt the following line of reasoning in this paper: there are two possibilities, the guarantee or violation of human rights. In the case of guaranteeing rights, there is respect for vulnerability in the sense of curbing stigmatization and discrimination against these individuals or social groups, ensuring universal and equal access to health (2,14). However, in the case of rights violations, there is disrespect for vulnerability, whether or not it is associated with the stigmatization of certain groups, discrimination in access to proper diagnosis and treatment, inequities in access to health, aspects that are expressions of the social determination of the health-disease process.

In this study, it was observed that population groups that have historically had their vulnerability increased due to the social determination of health had discrepancies in the number of hospitalizations and deaths from COVID-19. We also observed a situation in which the challenges of unresolved social determination and a pandemic context overlap, leading to a deepening of historical inequity.

The question arises as to why issues and dilemmas that have been known for decades have still not been resolved, and why measures have not been taken to prevent these disparities from adding up and being accentuated during the humanitarian crisis caused by the pandemic. The coronavirus pandemic has exposed social inequalities in different societies.

We also noticed the scarcity of empirical studies identified in the review, certainly due to the descriptors and search mechanisms chosen. It could be that the data sought in this study was just one of the variables analyzed in more comprehensive studies that included clinical and sociodemographic characteristics, for example. Thus, the descriptors of these empirical studies did not include the keywords used, prioritizing those focused on clinical aspects. Some of the texts analyzed used secondary data, such as government epidemiological bulletins, which in turn were not eligible material for this study.

It was also found that the vast majority of the articles included in this review originated from a single search platform for academic texts, Pubmed, and this is directly reflected in the language of the articles and the nationality of the institutions where the main authors are affiliated. Scientific production continues to be heavily concentrated in developed countries, which raises the question of what has happened to the aspects investigated in this study in poor and developing countries, marked by profound social inequalities, such as Brazil.

On the other hand, even though the literature analyzed came from countries in the developed world (21, 23), the increase in social vulnerability and inequity was evident, as expressed in the data shown in the four tables that summarize the results. In addition, there is a cross-section of themes in the categories researched: the racial issue, for example, emerged as a theme in publications located via three descriptors: population groups, equity and social determinants of health.

The lack of research using primary data or data from government epidemiological bulletins that provide us with information on the social determination of health can be attributed to the difficulties of recording data in sources such as medical records and other incomplete documents. For example, there is a lack of data on skin color, despite the fact that there is space to fill in this information in epidemiological notifications and death certificates (35).

It should be noted that the lack of epidemiological transparency leads us to a possible necropolitical position of the state. The concept of necropolitics in the pandemic is addressed by a text

analyzed in this study (35). According to this article, we have a genocidal strategy by making deaths by race/color invisible in the official data released in Brazil. In addition to the lack of transparency in the data on proportional mortality, we have the disinformation promoted by the federal government by minimizing the disease, not promoting broad campaigns for health literacy regarding self-care measures and prevention of contagion and containment of transmission, together with the promotion of treatments without proven efficacy (20,35). We should also add to the current scenario the increase in unemployment and the difficulties in receiving social assistance during the pandemic period, so as to enable social isolation for the less favored strata of the population. Therefore, attention should be paid to future scientific publications that better present and discuss the impacts of the pandemic on the populations of our country and other countries from a “southern” perspective (18,19).

The analysis of the main findings, summarized in the tables of the study, shows the confluence and convergence of results, regardless of the category of descriptors that guided the search in the databases. For example, the theme of race/ethnicity can be seen in three tables, associated with lower job stability, a higher proportion of essential workers, inadequate housing conditions, difficulty in adopting social distancing, greater food insecurity, less access to health, indicating the chronic presence of contexts of social vulnerability in these population segments (21,23,25,26,29).

When looking at gender issues throughout the pandemic (24,27), it can be seen that the problems continue to be those related to a patriarchal and sexist society, with accentuated problems such as domestic violence and the triple working day. Fortunately, despite the fact that women make up the majority of the workforce in essential services such as healthcare, they have not been the majority in COVID-19-related mortality and morbidity statistics, with female sex being considered a protective factor. However, more recent data points to an increase in maternal mortality in Brazil due to COVID-19 infection, leading to reflection on whether the causality of these negative outcomes related to the gestational period is purely related to the physiology of pregnancy or whether there are components related to the difficulty of access to adequate pre- and perinatal care, alongside the precariousness of obstetric care services due to the allocation of professional resources and spaces for the treatment of patients infected with COVID-19 (37). Gender-related studies are needed to better determine the vulnerability of women in the pandemic

When it comes to age, there has been an under-representation of elderly people and those with comorbidities in various studies (16,19), despite the fact that they have been strongly affected by COVID-19. This fact is worrying when we consider that possible treatments and vaccines are being tested and developed in groups that are less affected, ignoring their interactions and effectiveness in the population with greater morbidity and mortality.

Patients with chronic illnesses are a good example of people who have experienced transitory vulnerability in the context of the pandemic, such as the difficulty of accessing health treatments secondary to the pandemic, as explained in articles on dementia, chronic kidney disease and chronic pain, for example (17,18,31,36). Physical disability was little addressed in the sample of articles, although this condition is shown to be a transitory vulnerability in terms of access to healthcare during the pandemic.

There were no texts in our sample on screening and ICU bed occupancy, although there have been publications referring to screening mechanisms that clearly discriminated against disabled people (37). It's worth noting that screening mechanisms for beds are valid in a context of scarcity, but they must be applied in such a way as not to include prejudice or systematic exclusion of disabled people.

The proposed methodology must be transparent, equitable, inclusive and non-discriminatory, allowing people in need who would benefit most from the beds to have priority access.

It should be noted that the implementation and observance of all human rights is a process that can take time. In the case of universal access to health, in Brazil we have the landmark 1988 Constitution and the creation of the Unified Health System (14), which has enabled the inclusion of Brazilians who previously did not have the means to look after their own health and who depended on charity services such as the *Santas Casas*. But in our country we are still a long way from a state that guarantees equity in health. As an example, we have the queue of people referred for ICU beds in the public network, which at times of the pandemic has reached hundreds of cases in some cities. In comparison, people with better socio-economic conditions and access to the private health network have had no reported problems waiting in line for beds. We have deeply unequal treatment where access to intensive care has depended directly on economic conditions.

In times of humanitarian crisis - such as a pandemic of the magnitude of the current one - plans must be in place to protect vulnerable people, with the aim of preventing inequalities from deepening and preventing them from paying with their lives for rights violations and acts of discrimination that are ingrained in the social fabric. Respect for the vulnerability of populations is a broad and complex issue, which permeates various spheres of society and has a multifaceted approach (6,7).

In the case of public health, there are steps to be taken to reduce inequities, which include reducing discrimination, breaking down social stigmas and reducing socio-economic inequalities. When discussing the protection of the rights of vulnerable people and a way of dealing with a humanitarian crisis such as the COVID-19 pandemic, we must pay attention to solidarity, feelings of empathy and a spirit of unity when addressing the problem (36).

Finally, we must focus on the violation of rights set out in the UDBHR (2). By increasing the disparity in mortality and morbidity of population groups already heavily impacted by the social determination of health, there is a violation of the right to health, indicating that governments and society fail to respect the vulnerability of groups in the context of the pandemic. Permeating this issue is the failure to discriminate against and stigmatize racial groups, ethnic minorities, women, disabled people and the elderly. We therefore have a context of deeper violations of Articles 3, Human Dignity and Human Rights; 8, Respect for Human Vulnerability and Individual Integrity; 10, Equality, Justice and Fairness; 11, Non-Discrimination and Non-Stigmatization; and 14, Social Responsibility and Health. This work reveals failures to provide the best attainable standard of health in an equitable manner for vulnerable groups.

The limitation of this study is the small number of databases searched, and future studies could recommend expanding to other platforms. We can also consider the descriptors used to be a limitation, and perhaps if a new search were carried out, using more descriptors could result in a larger sample of publications. The option of including government epidemiological bulletins could also be a valuable alternative in future studies, certainly providing a better view of the reality in countries with a southern perspective, thus correcting the distortion found in this study, in which the majority of the articles came from developed countries.

Conclusions

The protection of vulnerable populations and the collective effort to mitigate inequities, guaranteeing their human right to health, is extremely important. The COVID-19 pandemic is not over yet, and more original publications should appear in the coming years, hopefully with more data from decolonized science. The path to guaranteeing equitable health for vulnerable populations involves strengthening science and international cooperation in response to emerging diseases with pandemic potential, guaranteeing equitable access to supplies, treatments, research and vaccination.

Bioethics, as a theoretical and conceptual framework, sheds light on and facilitates understanding of the problems addressed in this work, and the UDBHR is a valuable tool for assessing and monitoring violated rights in the pandemic context of people in social vulnerability. Attention must therefore be paid to the conditions of vulnerable people and efforts must be made to implement public policies aimed at better protecting underprivileged citizens. This work has revealed a sum of effects that amplify the social determination of the health-disease process, effects aggravated by an acute pandemic that affects racial, ethnic and social groups and those with other vulnerabilities. It is imperative to reflect and act on mechanisms that mitigate this bias of structural discrimination, guaranteeing human rights regardless of periods of crisis.

Conflict of interest

The authors declare that there is no conflict of interest.

Authors' contributions

Alves PD conceived the article, analyzed and interpreted the data and wrote the article. Seidl EMF contributed to the analysis and interpretation of the data, the critical review of its content and the approval of the final version of the article.

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