ABSTRACT:
Sociology as an area of knowledge that studies human social relations has been used as a safe way to understand the phenomena that involve human beings in their sociability. Accordingly, this article presents a literature and documentary review, within a socio-historical perspective, about the main pandemics that have plagued humanity in order to discuss the covid-19 pandemic. For this objective to be achieved, a bibliographic and documentary review was carried out based on a qualitative historiographical approach. The review generated a historically organized discussion of the main pandemics that occurred to humanity, which led to the understand of a convergence between the fields of public health, public policies as well as the need to create structures to prevent and fight pandemics. It is concluded that the pandemic cycles faced by humanity interfere strongly in several social issues, slowing down the rhythm of people's lives, generating structural and political changes in the health and economic systems.

KEYWORDS: Covid-19 pandemic; public health; health sociology.
phenomena caused the ruin, the setback and the breaking up of the social fabric built by human beings for many centuries (Hobsbawn, 1994).

It is understood, when looking at the story told by historiography and mainly when investigating it in the light of the criticality of sociological bases, across social, economic and environmental phenomena, that many of these phenomena caused negative impacts to life and their origin lie in the action of men on the environment, actions specifically coming from their production processes whose goals were the increasing and unsustainable consumption, along with the incessant interest in accumulating wealth over economic processes and human societies that were, in many cases, saturated (Leff, 2014).

In the opposite direction, the search for perfection or human longevity, the human being’s companion ambition since their understanding of life and death, disease or illness constitutes an individual or collective human phenomenon, depending on the level of contagion of the collectivity (Barata, 1987).

This literature review examines the human knowledge, in an extremely reduced scope (to the human, historical and sociological complexity of the theme), about its confrontation with the main diseases characterized as pandemics, responding to the research problem “within a sociohistorical perspective, how did humanity get to the covid-19 pandemic?”

It is important to highlight that the research was conducted from March to May 2020 (period of ascendancy in the numbers of contagion and death caused by the covid-19 pandemic in Brazil and in the world) as an exploratory, documentary, and bibliographic research, in order to approximate the results to the sociological and historical plan.

For a better understanding of the covid-19 pandemic suffered by humanity since 2019, it is necessary to understand the existing concepts of disease, epidemic and pandemic. As evidenced by Boruchovitch et al. (1991), the importance of conceptualizing the terms enables a simple initial structure or base that cooperates for the aggregation of other knowledge, which can be built in a “gradual, continuous and progressive” construction and learning.

**Definitions of Disease, Epidemic and Pandemic**

Despite the efforts of the academic community to determine a single concept of disease, it was agreed that the definition of the term is relative to its complexity. As pointed out by Scliar (2007, p. 30): “it will depend on the time, the place, and the social class. It will depend on individual values, it will depend on scientific, religious and
philosophical conceptions”. This occurs due to the various attributions that each society links the conceptualization of illnesses.

After the Second World War, the World Health Organization (WHO) was created, in 1948. The institution then established the universal concept of health as “the state of complete physical, mental and social well-being and not only the absence of disease” (Ministério da Saúde, n.d., p. 65). In relation to the various types of illness, in 1989, WHO created the International Classification of Diseases (ICD), which separates them into three major groups, as described by Carvalheiro (2008, p. 7): “(1) transmissible; (2) chronic non-communicable diseases; (3) externally caused or ‘injuries’ (violence and trauma)”. This classification was created according to the origin of each disease.

As for the epidemic, in order to arrive at its definition, it is necessary to understand the concept of endemic. That said, the latter is considered as an infectious disease of local cause and contagion in a given region (Moura & Rocha, 2012). Thus, the epidemic, according to the authors, is characterized by an increase in outbreaks in different regions, with the above average occurrence of the disease - if the infectious disease exceeds the number of cases of previous years in the same period and in different regions, it becomes an epidemic (Barata, 1987).

The pandemic, according to Henao-Kaffure (2010, p. 55), is "derived from the Greek expression 'pandemonium' and translated as 'disease of the whole city'". Arousing the concern of public and private health institutions internationally, the term is used when a disease reaches high proportions and puts global health at risk. It is noteworthy that its rate of spread is high, as well as the mortality rate, that is aggravated by globalization.

Main Pandemics Suffered by Humanity

The effects of globalization, in spite of its contribution to the increase in number of infected people in a short period, are not restricted to factors that aggravate a pandemic process. Historically, mankind has faced several diseases at the level of pandemics over the centuries, which occur in a temporal pattern of approximately 80 years apart from one to the other, considering only the influenza virus (Matos, 2018).

Black Death

The Black Plague or Bubonic Plague was named after the effects caused on the human body and devastated the world population between the years 1346 to 1353. The term “bubonic” was used because of the buboes formed in the lymphatic system, mainly in the groin and armpits areas; and the term “black” was used due to the dark spots that formed on the skin after the bubo’s fissure (Lee Goof, 2007).
Caused by the zoonotic bacteria Yersinia pestis, common to rodents and fleas, the disease spread due to the precarious hygiene habits of medieval society and the constant Europeans’ maritime routes. According to Lee Goof (2007), the death toll would have been greater than one third of the population on the European continent.

Present in medieval society in the 14th century, the disease was then related to the will of God. Prayers and in cold baths with natural extracts along with measures to restrict community contact, such as quarantine, were then believed to cure people from the disease. During this period, the other prophylactic measure for the restriction and containment of the disease’s progress was the isolation and the prohibition of embarkation and disembarkation in ships for passengers and crew (Biblioteca Nacional, 2020).

Originating in Venice, the term quarantine, broadly used today, was related to the need of changing social habits caused by the Black Plague. The quarantine, a word originated from the Italian expression quaranta giorni, was inspired by the isolation practiced in the port of Ragusa (current city of Dubrovnik, Croatia), in the 14th century, during epidemic outbreaks (Biblioteca Nacional, 2020).

**Cholera**

Cholera is a contagious infection caused by the bacterium Vibrio cholerae. After contamination, the bacteria are allocated in the intestines, causing diarrhea, vomiting and profound dehydration. Easily transmitted, the infection is related to poor basic sanitation conditions, since its spread occurs through ingestion of contaminated food and water (Santos, 1994).

Throughout history, the world has been impacted by seven cholera pandemics. One of the first records of the disease points out that it spread from 1503 onwards, with the increase in maritime trade routes. However, modern knowledge about the infection was achieved only in the early 1800s, when scholars began to research the causes and treatment of the disease (Botell & Bermúdez, 2011).

The first pandemic of this disease originated in Southeast Asia, in 1817, and spread to different regions of the world. At the time, the greatest impact on mortality was seen in India. The second cholera pandemic occurred between 1829 and 1850, when it arrived in the Americas, probably brought by the Europeans. Cholera has hit Canada, the United States, Mexico, among others. Subsequently, the third pandemic is dated between 1852 and 1857, still in Mexico and in the United States, also reaching Brazil and the Caribbean. In Brazil, the disease had a greater impact on the number of deaths. In the fourth and fifth pandemic waves, from 1863 to 1896, it is estimated more than two hundred thousand
victims. The sixth pandemic, the most severe of all, began in 1899 without a clearly defined end date. At this stage, from Indonesia, the infection spread rapidly to Asia, Europe, Africa and Latin America. The seventh pandemic, which occurred between 1991 and 2001, accounted for almost four hundred thousand cases and five thousand deaths in sixteen countries in the Americas (Botell & Bermúdez, 2011).

In addition to the deaths and human suffering, the waves of cholera generated breakdowns in economic and social levels, hindering the development of the affected societies, especially those considered underdeveloped. On the other hand, a positive outcome from cholera was the structuring and organization of health services in several countries around the world (Santos, 1994).

**Tuberculosis**

After approximately 380 years of the first case of cholera, one of the most important and present infectious diseases in human history is found in history: tuberculosis. The disease is closely linked to the evolution of human conditions in cities, especially the conditions of basic sanitation. The first evidence of tuberculosis was found in 44 mummies dated from 3,700 to 1,000 BC, with the majority referring to Egypt’s 21st dynasty (Rosemberg, 1999). Among the civilizations of America, there is bacteriological proof of the presence of the pathogen around 1,100 BC, due to the presence of the bacillus in a mummified body of an Indian woman (Kozakevich & Silva, 2015).

The tuberculosis bacillus was discovered on March 24, 1882 by the German microbiologist Hermann Robert Koch, at the Institute of Physiology in Berlin. Today it is known that tuberculosis is caused by bacteria belonging to the Mycobacterium tuberculosis group, which, according to the World Health Organization (WHO), infects more than 100 million people a year worldwide. (Kozakevich & Silva, 2015).

Before the discovery of the causative agents, in 1882, tuberculosis had already emerged intensely, causing the death of thousands of people in the 1850s and 1860s. The disease was attributed, at the time, solely to the lack of structure in the poor tenements and villages of the largest cities in the world, in Europe. This alternative interpretation of the emergence of the disease was in line with the political interest of attributing to the poor the idea of conspiracy against the prevailing political order, making them the target of government interventionist actions (Chalholb, 1996).

Between the middle of the eighteenth century and the nineteenth century, the peak of the Industrial Revolution phenomenon had formed an intense agglomeration of people in the cities – people who after working 14 or 15 hours a day had no access to good food, nor to the minimum conditions of basic sanitation – causing new outbreaks of
tuberculosis in Europe, where the mortality rate reached 800/100,000 deaths, while in London this rate reached 1,100/100,000 deaths (Rosemberg, 1999).

At the beginning of the twentieth century, between 1914 and 1918, during the First World War, it is estimated that 80,000 French soldiers and 50,000 German soldiers contracted an active form of tuberculosis, many of which were decimated in the war trenches, especially Senegalese people who were recruited by France to fight the German army (Rosemberg, 1999).

According to the Brazilian Department of Health, 70 thousand new cases and 4,500 deaths related to tuberculosis are notified annually, with the highest incidence of the disease occurring among individuals aged between 20 and 49. Nowadays the main way to prevent this disease occurs through childhood vaccination (BCG-Bacillus Calmette-Guérin vaccine), offered free of charge by the Brazilian Unified Health System (SUS). The characteristics of the disease are cough for more than 2 weeks, phlegm production, evening fever, night sweats, tiredness, chest pain, lack of appetite, and, in more severe cases, blood sputum is observed (Ministério da Saúde, n.d.).

**Smallpox**

One of the oldest and longest of pandemics, smallpox is caused by the Orthopoxvirus variolae virus. Categorized as an infectious disease exclusive to man, its transmission occurs through the upper respiratory system. The initial symptoms are headaches, vomiting and high fever. In a more advanced stage, rashes form on the body, face and mouth. Over the days, the rashes turn into pustules that, healed, generate deep marks on the skin and even blindness, due to the healing of wounds located on the face close to the eye region. The risk of death after contamination is around 25% to 30%, a percentage varying due to the two strains of the disease: the major whose lethality is 30% and the minor whose lethality is 1% (Fiocruz, 2005).

More than tuberculosis, cholera and AIDS, smallpox has significantly impacted humanity for over ten thousand years. Its origin is not known for sure, but there are traces that mummies, such as that of Ramsés V, in 1157 BC, contained signs of smallpox (Fiocruz, 2005). Toledo (2005) states that the disease would have occurred centuries before Christ, due to the emergence of populous cities in the river valleys of Asia, later spreading to Europe and Japan. In the 4th and 5th centuries, following the routes of merchants, the disease reaches Greece and Italy. In Africa and in the Iberian Peninsula, the spread occurred in 710, due to the Islamic expansion, reaching, in 731, Central Europe, due to the

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1 Number of deaths caused by a specific cause in a given population.
containment of the French army to the expansion of the Moors, who on their return home carried the smallpox virus with them.

There are writings of the disease in different parts of the world. However, the record of its spread occurs in Europe only in the 15th century through medical texts. In the Americas, the disease was brought by Europeans during colonization, being closely associated with the slave trade. In Brazil, the initial outbreak occurred with the arrival of French colonists in the state of Maranhão. With the arrival of the Portuguese and the forced attempt of the Jesuits for the conversion of the native peoples, the disease spread rapidly, especially in Rio de Janeiro, giving it an endemic character, as occurred in Europe (Toledo, 2005).

Due to the rapid spread, humanity faced one of the most lethal infectious diseases in the world and serious health and political problems. The disease was severe between the 18th and 19th centuries, the number of deaths reached an estimated 400 million people (Teixeira, 2000).

In addition, there was a potential threat against several countries due to the possibility of using the virus as a biological weapon in terrorist acts. After the invention of the vaccine, at the end of the 18th century, the virus was stored by two laboratories, one in the Soviet Union and the other in the United States, with the authorization of WHO, under the argument of further studies on immunological methods and medical investigations. Smallpox was the only disease in the world to be eradicated through vaccination (Schatzmayr, 2001; Toledo, 2005).

**Spanish flu**

Among all viral diseases and among the influences that marked humanity, none caused as much impact as the “Spanish flu” which, despite its name, did not originate in Spain or in the European continent. The most accepted theory is that the disease originated in the United States of America, in March 1918, causing the “1918 pandemic” between April 1918 and February 1919 – despite having its appearance also pointed out in other regions, due the great movement of people caused by the First World War (Killingray, 2003).

Influenza is a highly contagious and easily spreadable viral infection, which contributed to the global distribution of the disease and to the highest number of deaths by risk groups (Almeida et al., 2015). There is no precise number of deaths associated with the Spanish flu, yet an estimated 4.7 to 39.3 million people died from the disease (Patterson & Pyle, 1991).
The epicenter of pandemics is related to the great human concentration in the cities, where population were affected by poverty, hunger and misery – a portion resulting from direct or indirect participation in the war –, low infrastructure of public health and basic sanitation. These aspects contributed to the spread of the disease in underdeveloped countries, but they also affected developed countries by overloading public service systems, due to the condition of the worldly conflict (Killingray, 2003). Even so, industrialized countries, more concerned with public health, resorted to social isolation and quarantine (Goulart, 2005).

Considering that scientific research processes lack time for all methodological procedures and tests, the discovery of the pathogen responsible for influenza, which, according to Silveira (2005), occurred only in the 1930s, resulted in an increase in interest to establish monitoring networks installed in several countries as a way to prevent the emergence of new epidemics and pandemics (Killingray, 2003).

Aids

In 1981, a new disease was identified in Los Angeles and San Francisco, in the United States of America (USA), whose symptoms showed a dysfunction of the immune system and the presence of the fungus Pneumocystis carinii. It was also observed that the new disease had spread mostly among male patients, who were adults, homosexuals and who lived in the city. After that, it was confirmed the first clinical case of AIDS in the world (Pinto et al., 2007). According to the author, despite the clinical evidence, the AIDS epidemic is traced to had been started in Equatorial Africa in the 1960s, originating from close contact between monkeys and primates with African natives by "scratches or bites, or by the habit of these populations of eating undercooked monkey meat as food, containing in their tissues and fluids (blood, secretions) the causal virus of the disease" (Pinto et al., 2007, p. 45).

The Brazilian Department of Health on its official website highlights the symptoms and guidelines for prevention and defines AIDS as

the disease caused by infection with the Human Immunodeficiency Virus (HIV). This virus attacks the immune system, which is responsible for defending the body from disease. The most affected cells are the CD4 + T lymphocytes. The virus is able to alter the DNA of that cell and make copies of itself. After multiplying, it breaks the lymphocytes in search of others to continue the infection (Ministério da Saúde, n.d.a).

As for the cure of the disease, there are no scientific ways to guarantee it. However, palliative treatment is a way to prevent its advance, using antiretroviral drugs and
preventing against immunodeficiency secondary diseases, also called opportunistic diseases. As it is incurable, public policies to fight the HIV/AIDS virus are essential for the reduction of cases, which are present in regions of greater social vulnerability, something that has changed over the years since the beginning of the disease, marked today by transmission in areas of “income, housing quality and regional inequalities”, according to a study conducted by Castilho and Bastos (1997, p. 14-16).

According to UNAIDS - Joint United Nations Program on HIV/AIDS (2019, p. 1): “32 million [23.6 million – 43.8 million] people have died of AIDS-related illnesses since the epidemic began”. This institution, allied to the UN, was created in 1996 and aims to fight AIDS through strategies and solutions to prevent the spread of the disease in different nations.

Swine flu – H1N1

The first pandemic of the 21st century emerged in Mexico and peaked in the years 2009 and 2010. It is caused by a mutation of the Influenza virus, which causes the flu, the same responsible for the Spanish Flu, of 1918. However, this mutation, found in pigs in Mexico, had pig, bird and human genes, as explained by Greco, Tupinambás and Fonseca (2009).

Unlike seasonal flu that occur every year in the same season and mostly affect people aged 65 and over, the 2009 pandemic mainly affected children, adolescents and young people, with an average age of 24. According to Greco, Tupinambás and Fonseca (2009), such occurrence may be the result of the immunity acquired by people over 65 during the Asian Flu, 1957, and the Hong Kong Flu, 1968.

Like all pandemics, the reaction when H1N1 appeared follow the rule. The authorities first reaction was to deny its existence, since it was something unknown and with the potential to shake the economy and health systems (Alvarez et al., 2009). The Swine Flu pandemic was only recognized months after the first case appeared, and in 4 months, 120 countries already had cases of H1N1, probably spread by the international transportation air system (Alvarez et al., 2009).

By the end of the pandemic, in 2010, about 20% of the world population had been infected, with approximately 18,000 confirmed deaths. However, it is estimated that more than 200,000 deaths occurred due to the Swine Flu pandemic. In Brazil there were 53 thousand cases and about 2 thousand deaths (Alvarez et al., 2009).

It is possible to affirm that the pandemics of the last century made it possible to reduce mortality from H1N1, a fact represented by the improvement in health services to the population (Greco, Tupinambá & Fonseca, 2009).
SARS and covid-19

Before talking about the Coronavirus, which causes SARS and covid-19, it is necessary to distinguish between the causative agent of the disease and the disease caused by it. SARS (Severe Acute Respiratory Syndrome) is caused by SARS-CoV, while covid-19 (Coronavirus Disease) is caused by SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2), name given precisely because of its similarity to the virus that causes SARS (They, 2020).

Both SARS-CoV have zoonotic origins, with animals being their natural reservoirs, particularly some species of bats. The name coronavirus is due to the crown that is seen when observing the virus in the electronic microscope (Instituto de Higiene e Medicina Tropical da Universidade Nova de Lisboa, 2020).

Group A influenza viruses, subtype identified in 2009, is a group to which H1N1 is a part. This kind of virus undergoes frequent mutations against which we have no immunity. Coronaviruses have already been shown to have this ability, which has been known since the 1960s. Until now, it was known that six coronaviruses were capable of mutating, the new coronavirus, officially named SARS-Cov-2, is the seventh (Lana et al., 2020).

SARS appeared in China, in the city of Guandon, in November 2002, being identified only three months later. Only in March 2003, a Public Health Emergency alert of International Interest was issued by WHO. According to They (2020), there were 8,000 cases with 774 deaths worldwide, which represents a lethality rate of 10%.

Covid-19, caused by SARS-CoV-2, also appeared in China, in the city of Wuhan, in December 2019. On January 7, 2020, the new virus was already isolated and identified; two days later its genome was sequenced. On January 30, 2020, WHO issued a Public Health Emergency Alert of International Interest. Such speed in actions to combat the new coronavirus is due to the lessons learned from the pandemics of the past (Lana et al., 2020).

Anyway, 21 days after the first case in China, the virus was already in the United States and three days later, in Europe. In Africa and Latin America, specifically in Brazil, the first case was reported on February 26 (They, 2020).

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2 The lethality rate relates the number of deaths caused by a given disease to the number of people who were affected by the same disease.
Until May 20, 2020, 5,449,135 cases of COVID-19 and 345,721 deaths in 188 countries were confirmed worldwide. In Brazil, 363,211 cases and 22,666 deaths were confirmed (Johns Hopkins University & Medicine, n.d.).

The worldwide effort to generate information about the new coronavirus is impressive. In a month of existence, the new virus was already mentioned in 37 publications in PubMed, with descriptive analyzes of the first cases, analysis of genomic sequences and clinical aspects. This movement is the product of a sensitive international surveillance system, as well as a policy of sharing data and findings (Lana et al., 2020, p. 3).

Thanks to the experiences, often traumatic, lived in previous pandemics and epidemics, it was possible to create instruments for monitoring and rapid response to this and the next pandemics to come (Lana et al., 2020).

Policies and Structures for Preventing and Fighting Pandemics

As the nations of the world began to organize themselves, especially after the Second World War, they sculpt within their scope of State and within the public policies resulting from it, the structures of public health. Based in Geneva, Switzerland, WHO was created in 1948, with the aim of achieving the highest possible level of health for all people. WHO is one of the most important agencies that make up the United Nations - UN, being financed by a group of 194 member countries (WHO, 2020).

Among the purposes of WHO, the following stand out: monitor human health on the planet; lead and guide the world population in health-related issues; establish ethical norms and regulations based on science and on public health issues (WHO, 2020).

In Brazil, the history of public health begins in 1808, however the Brazilian Department of Health would only be created on July 25, 1953 by the Law No. 1,920, which divided the then Department of Education and Health into two departments: Health and Education and Culture. After many changes and structuring of its services in different bodies under the department, with the promulgation of the Federal Constitution of Brazil, in 1988, the Unified Health System (SUS) was created (Ministério da Saúde, n.d.b).

According to the Brazilian National Health Department, SUS it is one of the largest and most complex public health systems in the world, ranging from simple care for blood pressure assessment, through Primary Care, to organ transplantation, ensuring full, universal, and free access for the entire population of the country. With its creation, SUS provided universal access to the public health system, without discrimination. Comprehensive health care, and not only assistance care...
has become a right for all Brazilians, since pregnancy and for life, focusing on health with quality of life, aiming at prevention and health promotion (Ministério da Saúde, n.d.b).

The Brazilian National Health Department and SUS plan, organize and implement public health policies in Brazil, from the assistance provided by the Family Health Program to highly complex interventions and all Brazilian vaccination and medication campaigns, among many other details of public health (Ministério da Saúde, n.d.b).

Final considerations

The covid-19 pandemic, in 2019 and 2020, abruptly slowed the pace of all mankind, causing society to experience an unprecedented crisis in this generation and in recent centuries, including the expectation that its economic impacts will be much higher than the great recession of 1929, marked by the crash of the New York Stock Exchange.

The studies brought up in this scientific communication indicate pandemic cycles affecting humanity in its history, and it is possible to observe the relationship of these with economic issues, with sanitary conditions, with public policies and with government interests that, in turn, end up directing their populations to more or less successful health solutions in overcoming pandemic situations.

Finally, it is emphasized that the will to live, instinctive to all living beings has always given courage and strength to humankind, values that when combined with scientific knowledge make a difference in maintaining health and life.

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RESUMO:
A Sociologia enquanto área do conhecimento que estuda as relações sociais humanas vem sendo utilizada como caminho seguro para o entendimento dos fenômenos que envolvem os seres humanos em sua sociabilidade. Diante disso, este artigo apresenta um recorte revisional, dentro de uma perspectiva socio-histórica, acerca das principais pandemias que assolaram a humanidade, culminando no diálogo contemporâneo sobre a pandemia de covid-19. Para isto, utilizou-se como método a revisão bibliográfica e documental, a partir de uma abordagem qualitativa historiográfica, trazendo uma discussão organizada historicamente das principais pandemias que atingiram a humanidade. Como resultado, elencou-se a convergência entre os campos da saúde pública, políticas públicas e a necessidade de criação de estruturas para a prevenção e combate às pandemias. Conclui-se que os ciclos pandêmicos enfrentados pela humanidade interferem fortemente em diversas questões sociais, desacelerando o ritmo de vida das pessoas e de toda humanidade, gerando mudanças estruturais e políticas nos sistemas de saúde e econômicos.

PALAVRAS-CHAVE: Covid-19; pandemia; saúde pública; sociologia da saúde.