Crimson Publishers
Wings to the Research

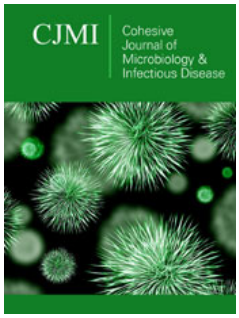
Perspective

COVID-19 Perspective from Critical Epidemiology

Eduardo Lozano Ordoñez*

Physician, Epidemiologist, Colombia

ISSN: 2578-0190



Abstract

From the beginning, the current Covid-19 Pandemic has been evaluated under the concept of clinical or classical epidemiology, with a mainly positivist perspective. Clinical Epidemiology performs disease control from a mainly quantitative and causal concept. It is a linear process, it has used several concepts, however following the positivist and linear, applying in the COVID-19. This article emphasizes the analysis of the pandemic, through critical epidemiology where a broader vision with polysemic and complex notion is used, where health is taken from a new perspective, integrating the historical, social, cultural and political parts in the health process; Its evaluation methodology from the general, particular and individual vision to each region, community and staff, is its own and applicable with possible benefits in understanding the catastrophe, that the Covid-19 has represented to humanity.

Keywords: Pandemic; Covid-19; Perspective; Critic epidemiology

***Corresponding author:** Eduardo Lozano Ordoñez, Physician, Epidemiologist, Colombia

Submission: August 18, 2021

Published: September 28, 2021

Volume 5 - Issue 4

How to cite this article: Eduardo Lozano Ordoñez. COVID-19 Perspective from Critical Epidemiology. Cohesive J Microbiol Infect Dis. 5(4). CJMI. 000618. 2021. DOI: 10.31031/CJMI.2021.05.000618

Introduction

Humanity has had several world epidemics throughout its history. It is cited as the plague of Athens in 402 BC, where typhoid fever is suggested as the cause, which was the first plague faced and reported in history. After this several plagues are cited, some transcendental in history and others not, because they are very localized [1]. From the Middle Ages to our time, the black plague or bubonic plague that occurred in the fourteenth century has been the most devastating in number of deaths in Europe. In the modern era, polio and tuberculosis have left serious consequences. In this past 20th century, pandemics were identified as in 1918 of the Influenza, popularly called the Spanish Flu. Then in 1957, 1958 and 1968, there were other epidemics of a different strain of Influenza and the so-called Hong Kong Flu. In 1980 the Pandemic was HIV/AIDS and in 2000 another strain of Influenza or also called Swine Flu. There have been new epidemics, but not with the magnitude of the scientifically identified Covid-19 pandemic caused by the SARS-CoV-2 virus that is currently living and that has affected all of humanity [2,3], and that, Despite the development of vaccination against the disease, the pathology has developed new strains that continue the pandemic. Classical epidemiology or clinical epidemiology has been in charge of managing epidemics and pandemics with a positivist, quantitative and cause-effect criterion, which gives a partial result to what science can offer in terms of the behavior of people and communities against to the pandemic. Being a Pandemic in itself, the inherence of socio-cultural aspects in the general population is too important, which is why it is necessary to resort to social medicine, where methods such as critical epidemiology are used, which integrates the part of the dimension social, cultural, economic and political health, for the management of the disease [4].

Discussion

The conventional epidemiology

Epidemiology is the branch of public health whose purpose is to describe and explain the dynamics of population health, identify the elements that compose it and understand

the forces that govern it, in order to intervene in the course of its natural development. It carries out the control of diseases from a mainly quantitative and causal concept [5]. The word epidemiology, which comes from the Greek terms "epi" (above), "demos" (people) and "logos" (study), etymologically means the study of "what is on the populations". The first properly medical reference to an analogous term is found in Hippocrates (460-385 BC), who used the expressions epidemic and endemic to refer to conditions depending on whether or not they were specific to a certain place [6]. It has been identified as a linear process, using the Snow triad from the 18th century, host-environment-agent, in infectious diseases. However, Virchow, considered the father of social medicine, affirmed that "medical science was intrinsically and socially a social science", for which he suggested looking at health from economic, social and political conditions. Lalonde in 1974 raised the concept of social determinants based on lifestyles, the environment, human biology and health services [7]. In 1978, based on the above and Sigerist concepts, the Declaration of Alma Ata came out, which reinforced Disease Prevention and Health Promotion with Primary Health Care [8]. In 1986, the First International Conference on Health Promotion took place in Canada, which defined health promotion as "the process of providing people with the necessary means to improve their health and exercise greater control about it" [9]. The Dahlgen and Whitehead model in 2006, summarizes the possibilities of interaction of social determinants towards health [10]. These approaches, however, continue to be positivist and causal, using indicators such as incidence, prevalence, and case monitoring as forms of analysis to determine the behavior of diseases, as in COVID-19. Specifically in COVID-19, there are certain quantitative indicators, which can be fully interpreted and lead to biases, such as the number of diagnostic tests, since they are not applied to the majority of the population, but to the symptomatic cases and some contacts, so the population at risk cannot be known. There may be infected patients, but they may be asymptomatic, and since the PCR test is not performed, it is assumed that there is no case of the disease. Another factor is the delay in reading by laboratories that can be up to 15 days, showing a late representation of the diagnosis of the disease. The contagion process is continuous with which the tendency to raise the infected curve, instead of flattening it, and control is more difficult [11]. However, with this Pandemic, Epidemiology has resurfaced as a mainly quantitative form of evaluation, as a way of interpreting a disease that was totally unknown initially, but with rapid progress and too great damage at the level of local populations, nations and worldwide.

Critical epidemiology

As an emancipatory arm of classical epidemiology, critical epidemiology has a different way of looking at health in general and is part of Community Health or Collective Health. Critical epidemiology was born around the 70s, with the works of Jaime Breihl, and that were reinforced by those of Asa Craswell and Nameida Filho, with different points of view, but with a similar vision of health, different from the positivist concept of health. western medicine [12]. This concept is expanded as a dynamic health process, including social determination in the conceptualization of health, respecting the quantitative indicators, but introducing the qualitative vision to the concept. In addition to the casual vision of the linear process, it includes the social processes that affect the health status of the individual and also of the population as a collective space, that is, the community. It considers the historical, political and cultural context of the problem as part of a whole and rejects the concept of the individual as a single interpretation [13]. It has a strong epistemological base, in the theories of Kuhn and Bourdieu, which together with the experiences of Latin American doctors such as Eugenio Espejo in Ecuador, and Virchow and Engels in Europe, are part of the support of a theory that includes the political and social part, which is being included in a new vision of health, broader and more dynamic [14,15]. This rethinking allows us to analyze a health problem, as a process that includes not only the various determinants of a disease in the individual, but also the universe of the collective where the phenomenon of alteration in health occurs, the specific group or particular that share certain characteristics of their own where the individual is, and finally the same individual with their own characteristics starting with the genetic part, continuing with their habits, diet, exercise and specific diseases. A study using this methodology is a process where historical, cultural, and political spaces are simultaneously visualized, in general, group and individual spaces, highlighting the specificity of the object and subject under study and their space in which they interrelate [16].

Applying critical epidemiology in the Covid-19 pandemic

In critical epidemiology, a polysemic and complex notion is used, where health is taken as an object in reality, health as a subject or a concept, which is interrelated and applied in a field of action that comes to be praxis. His method is a dialectical movement, where social determination goes in that double and opposite movement, where health does not obey an exclusively individual order, but is a complex process. It is socially determined, an aspect that often disappears from public health thinking, due to the predominance of a biomedical vision, and is reduced to a problem at the narrow limit of individual disorders, their cure, and individual or collective prevention as a whole [13]. This breaks the triad of the basis of agent-host-environment infectiology and changes the concept of social determinant that Lalonde applied to that of social determination, which is broader, more dynamic and is one of the axes of epidemiology. In this renovating discipline, health is understood as an object-concept, social, historical and complex field, and as a public good and in collective health it defends the full enjoyment of health services and social protection as universal rights and as an element essential for a dignified life [16]. The process of social determination seeks to protect, promote and repair life and has an impact on sustainability, sovereignty, solidarity, equity and biosecurity. It evaluates health in three dimensions: the general dimension, the particular or group dimension and the individual or singular dimension. The general dimension involves the transformation of economic processes

and relationships, involving power relationships and its own metabolism. The particular dimension involves the transformation of unhealthy collective components of ways of life. Finally, the individual dimension implies the transformation of genotypic and phenotypic styles and conditions [5]. Taking Covid-19 as a new, infectious disease, of which we know very little, except its biological structure, mode of transmission, initial pathophysiology, lethality and practically nothing about its treatment, we must resort to critical epidemiology to try to control it. When visualizing Covid-19, from this new perspective, its General Dimension shows us that it is an infectious disease, easy to transmit, apparently present all over the planet and its etiology is an animal disease. When it arose so abruptly, its aggressiveness and ignorance of the aggressor was not known, and it did not allow attitudes to be carried out at a general level, but already after mortality was high in China and in European countries such as Spain and Italy. It reminds us of the arrival of the Spanish and Portuguese in America, when the diseases brought by the conquerors and inside the European ships, killed more indigenous people than the conquest itself, due to the lack of defenses against those diseases.

The political negligence of the WHO suggestions and the experiences of these first countries with Covid, did not allow to apply contagion care from the individual to the general, and from the general to the individual, promptly. This was mainly highlighted in countries like the United States and Brazil, where we are now seeing even greater morbidity and fatality than was seen in the precursor countries of the disease. The application of socio-political norms, such as the late blocking of international travel, the use or not of masks, allowed infection in all countries, becoming a Pandemic. This means that, from the point of view of containment in the general dimension, there is already little that can be done, except to generalize certain behaviors in humans, and now mass vaccination. However, the economic impact that COVID-19 has presented, as few diseases have done, a difficulty of its absolute limitation between countries. Therefore, even at a general level, the travel protocols with safety of the different spaces can still be applied, not only at the level of the people who travel, in the way they travel, but in the spaces in which they travel, and in the follow-up of the people who arrive. All this in search of a new type of normalization. The general dimension, even includes countries and departments as general units, and the characteristics of each nation in the historical, cultural and social concept are fully applicable in the prevention and control of the spread of the disease. These other aspects are included, since the pandemic has triggered deficiencies or weaknesses in the historical, cultural, social and political aspects in the departments. A clear example are the moments of the Choco and the Amazon in Colombia, which due to their lack of health services, medical personnel and support in human talent has spread the epidemic faster and more lethal than in other areas. The educational level also influences since, in certain areas such as the Atlantic Coast, the department of Valle del Cauca, and the country's capital, Bogotá DC, individual attitudes show the lack of collaboration of the population in the prevention of the disease and an easier dispersion of this one. The departments or common regions (such as the coffee region, the Orinoquia, the Andean region, the plains) due to their physical extension and number of populations, can be considered as a general dimension in a country due to their socio-geographic characteristics, and therefore They must apply specific policies in each of these areas [17,18]. The particular or group dimension includes populations of the departments and municipalities, including populations that share a particular space, a territory, historical antecedents, customs or even an ethnic group. They are not properly delimited by legal or political limitations, such as the limits of a department or a municipality since this epidemiologically is not applicable as the border of a disease. This may imply that the territorial limitations of departments or municipalities are obsolete and in order to assume the problem, the administrations of these units must work together to face the disease. Clear examples are Bogotá, with respect to Soacha, La Calera and Mosquera, which are neighboring municipalities; Medellin, with respect to the municipalities Itagüí, Envigado and Bello; and Cali with respect to Jamundí and Yumbo. A clear example between departments is the municipality of Honda (Tolima) and Puerto Bogotá (Cundinamarca); or the municipality of La Dorada (Caldas) with Puerto Salgar (Cundinamarca) [17,18]. As in the previous spaces, the group concept is applied in indigenous reservations, veredas, palenques of Afro-descendant origin, they must be included in this concept. Even closed spaces with their own population and with particular characteristics, such as prisons, nursing homes, rehabilitation homes, should be considered as a group dimension. Afro-descendants as of July 3/2020 have presented 3,938 cases of Covid, with 66.2% recovered and with a fatality of 5.4%; the indigenous 1,071 cases with 71.61% recovered and 3.17% fatality; compared to 218,071 cases in Colombia, 45.3% recovered and 3.39% fatality. This shows a higher fatality rate in Afro-descendant groups than in indigenous groups and in the Colombian population in general. Likewise, the proportion of recovered is higher in the indigenous group, than in Afro-descendants and in the population of the country in general. This dimension must be studied from its historical space, the population that makes it up, the habits that this population has, the services it has. This implies the ways of life that all share. The SWOT matrix must be characterized and visualized, to reinforce strengths, control weaknesses, with a vision of sustainability, sovereignty, subordination, solidarity and integral biosafety. The above implies the ways of life, behaviors, diverse spaces that are shared, empowerment in the face of public social leadership, a space for the construction of subjectivity and a space for metabolisms with nature [12].

All this not only implies the conditions of infrastructure and services that a particular population has, but also implies the part of behavior, habits, culture and education with respect to the threat that is being presented. Taking tests against this disease should be a measure aimed at risk groups according to their characteristics, with a response as quickly as possible. Taking tests from a general concept is not very effective in the control of COVID, since the dispersion of the population and the time it takes for the results,

does not allow it to be this way [19]. The gradual start of normal activities in these group spaces is more recommended, as long as internal and external controls are applied. The entry and exit of people to the group space are basic to control the spread of the disease. This includes land and air travel as long as they comply with the identification and prevention protocols, both at the place of departure and arrival (transport terminals and airports), and the planes and buses they transport. In land transport, it is not recommended to pick up passengers on the way. The individual dimension is the individuals, their families and the family and individual relationships that are presented. They are the daily lifestyles due to individual free will, daily variability and the degrees of freedom that one has. It includes the assessment of, a) the typical personal itinerary, b) the personal and consumption pattern, including the living space and its services, c) the personal conceptions and values, d) the organizational capacity to defend health, and e) the personal ecological itinerary. In each individual dimension, there is a genotypic and phenotypic configuration, a development of strengths and pathophysiological defenses, a vulnerability and instability, a development of strengths and a willingness to live well, psychism, and control of not being in the wrong.

This implies that each person, and the people closest to them, must be aware of destructive events, and protective events in the space in which they live and directly related to their own body. Specifically, when referring to COVID-19 in the individual dimension, we identify the origin of the virus, the first forms of transmission, the pathophysiology, and the pathology as such in humans. Above all, its ease of infection and its speed of spread, as well as its lethality, are identified. Until now, the forms of complication of the disease and the lack of treatments for this disease are being studied and confirmed. There is currently no effective treatment for the disease [20]. This leads to resorting to the aforementioned characteristics of the individual dimension, which seek the prevention of the disease and the limitation of complications, in instances also to the attention of health services, since the need for Intensive Care Units that are suggests at a global level, it is 3% of the total infected population and these services are not provided by any country. The prevention, containment and mitigation steps are those that have been used so far, however, the general vision, group and individual and vice versa, have been lacking in the aspect of managing the historical, social, political and cultural concepts of each population.

Conclusion

When looking at the disease from a linear perspective at the individual level, the strategies used so far are physical distancing, hand washing and the use of masks that are highly effective, but historical, social, cultural and political concepts are not taken into account. that it has a population at a general, group and individual level and that for some makes these simple practices difficult. Visualization from the individual, from the group to the general, and vice versa, has been slow and not very analytical in this pandemic according to each population that is affected, with the consequent difficulty in particularizing individual and group needs. Therefore, there is a single national strategy, without visualizing the different group spaces and the individual characteristics of the different population groups [21]. The suggestion of the application of a Critical Epidemiology is to investigate COVID-19 within the general, group and individual spaces as a process, recognizing that the individual is part of the group, and the group is part of the general, converting the General, not in a sum of individuals or groups, but in a process of interrelation that occurs simultaneously between these spaces. Although the vaccine is already entering as a means of individual management, which will be reflected collectively, the original care management within the communities still have and will have priority, until we vaccinate the majority of the population, and we confirm that vaccination is really effective. short and medium term. There is still time for the application of this strategy, seeking to identify those individuals who are part of a particular group, to study them, identifying their strengths and weaknesses, and to apply the promotion and prevention of COVID, to strengthen the defense against the disease, while At a general level, policies are adopted for the containment and management of the complications of the disease. The problem is going to spread and critical epidemiology is a good control instrument.

Acknowledgement

I would like to express my special thanks of gratitude to my teacher, who gave me the Golden opportunity to do this Project of Covid. Who also helped me in completing the Project etc.

References

1. Infomed, Red de Salud. The first Epidemics in history.
2. BBC News World. Coronavirus: The pandemics that put the world on alert in recent history.
3. Huguet Pané G (2020) Great pandemics in history.
4. Breilh J (2010) Critical epidemiology a new way of looking at health in urban space. Collective Medicine Rev 6(1): 83-101.
5. López M, Garrido L, Hernández A (2000) Historical development of epidemiology: Its formation as a scientific discipline. Rev. Public Health of Mexico 42(2): 133-143.
6. Florez Trujillo J, Mazueradel H (1994) Basic epidemiology medellín: National school of public health hector abadgomez.
7. Lalonde MA (2020) A new perspective on the health of the Canadians Ottawa. Minister of supply and services of Canada.
8. Tejadade R, David A (2018) The history of the almaata conference. Rev Peru Gynecol 64(3): 361-366.
9. Ruiz Morales A, Morillo Z (2004) Clinical epidemiology, applied clinical research. Bogotá.
10. Whitehead M, Dahlgren G (2006) Concepts and principles for tackling social inequities in health: Leveling up part 1. Copenhagen Denmark: World Health Organization Regional Office for Europe.
11. WHO-World Health Organization (2020) Virtual campus in public health, Pan American Health Organization-PAHO WHO-Prevention and control of infections (PCI) caused by the new coronavirus.
12. Breilh J (2004) Critical epidemiology, emancipatory science and interculturality. Buenos Aires.

13. Lozano Ordoñez (2018) Social determination of the health of the embera chamí indigenous childhood of riosucio, Caldas, Colombia. Center for Advanced Studies in Childhood and Youth-Cinde.

14. Brunetti, Juan, Ormart, Elizabeth (2020) The place of psychology in Kuhn's epistemology. The possibility of a psychology of Scientific Research.

15. Bustamante Z (2016) On the concept of field in Bourdieu. International Journal of Research in Education 9(18): 49-66.

16. Morales C, Eslava JC (2015) In the footsteps of determination: Memories of the inter-university seminar on social determination of health. Bogotá.

17. National Institute of Health (2020) Weekly epidemiological bulletin.

18. Semana Magazine (2020) How has the coronavirus affected indigenous people, blacks and foreigners.

19. World Health Organization (2020) Emerging respiratory viruses, including covid-19: Detection, prevention, response, and control methods.

20. Center for Disease Control (2019) Atlanta get the facts about the coronavirus.

21. Ministry of Health and Social Protection (2020) Learn everything related to the coronavirus (Covid-19).