

# COVID 19

## Descriptive Analysis of the Pandemic in Ecuador

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**Abstract:- In the history of humanity, several pandemics have produced high death rates worldwide. Microscopic agents cause diseases. One of them is influenza considered an infectious disease caused by the coronavirus, which undergoes mutations from time to time. Generating new strains: Currently an outbreak of coronavirus, SARS COV 2 is causing deaths and shocks worldwide, due to its rapid spread, has paralyzed industries, commerce, tourism, production and the economy.**

### ➤ Aim

Carry out a descriptive analysis of the pandemic and its effects on the Ecuadorian population, taking information from the scientific and bibliographic base to raise awareness and make recommendations to reduce infections.

### ➤ Method

A review of the literature obtained from the electronic pages SCIELO, REDALYC and from the pages of the WHO and PAHO was carried out.

### ➤ Conclusion

Pandemics worldwide affect human life. The Ecuadorian population, like most of the world's inhabitants, has not given it the necessary importance to avoid the continuous spread of the virus and the loss of lives.

**Keywords:- Coronavirus. Mortality. Symptoms.**

## I. INTRODUCCION

Throughout history, humanity has faced pathologies that have caused high mortality rates in populations worldwide. These diseases, produced by microscopic agents, attack without warning and produce high mortality rates, being a problem that threatens the permanence of man on the planet. A pandemic can be defined as a disease that spreads to many countries, attacks almost all individuals in a locality or region. The most aggressive pandemics in recent years have been those related to the influenza virus.

Influenza is an infectious disease caused by a virus, influenza A, influenza B, or influenza C. Most people infected with influenza have fever, muscle aches, sore throat, headache, and fatigue, feel sick for several days and then recover, but in some cases, influenza can lead to

pneumonia and cause other complications, including death. An influenza pandemic occurs when a new subtype or strain of influenza virus develops. Three pandemics occurred in the 20th century, all caused by the antigenic change of influenza A strains (Sullivan S.J. et al. 2009)

The "swine flu" Influenza A (H1N1) was categorized by the WHO in 2009 as a pandemic for having cases in 74 countries, after four decades without having a disease of such magnitude. This type of influenza was identified in the United States in April of that year and spread rapidly to Mexico. This flu affected at least one in five people worldwide, however, the death rate between 2009 and 2010 was 0.02%. Children were the most affected unlike older adults who were the least vulnerable, a vaccine was subsequently developed.

During 1957, 1958 and in 1968, "mild" pandemics occurred according to the WHO. The "Asian" flu, which was caused by a new type of influenza A (H2N2), and the "Hong Kong flu" from H3N2. Both epidemics are estimated to have caused between 1 and 4 million deaths worldwide. The origin of this epidemic is a mixture of strains of avian and human influenza viruses. Thanks to the rapid development of a vaccine and the availability of antibiotics, H2N2 was controlled, and its spread was not so great. (CDC. CDC 2009.)

In the fourteenth century in Europe, the largest plague epidemic in history broke out, the Black Plague caused a great commotion, as well as the Spanish Flu pandemic of 1918, which was considered the most serious disease of the 20th century, spread at the time of the World War I and killed 20 to 50 million people, because there were no vaccines or antibiotics. In those years to limit it, the so-called quarantines were established, and suggestions such as good personal hygiene, using disinfectants and not going to public places with many people were implemented. (Racaniello, V. 2009.)

Currently in 2020, the coronavirus outbreak, SARS COV 2 is causing deaths and shock in all countries, as its rapid contagion has paralyzed all activities in the world, affecting industries, commerce, tourism, production, and the economy. , among other important aspects for the development of the countries, sowing panic in the population worldwide. (Ortiz J. 2020).

(COVID-19, first identified in central China on December 1, 2019 in Wuhan City, capital of Hubei Province, causes severe acute respiratory syndrome (SARS-CoV-2), may be complicated by pneumonia, It has been linked to shellfish market workers. The WHO recognized it as a global pandemic on March 11, 2020. As of April 30, 2020, more than 3,000,000 cases of COVID-19 have been reported in more than 200 countries and territories, resulting in more than 218,000 deaths and more than 922,000 cases of recovery.

The most affected countries are: the United States is the most affected country, Spain, Italy, Germany, United Kingdom, France and Turkey In the United States, more than a million cases of Covid-19 have been confirmed, and with the highest number of deaths recorded, more than 58,000. Spain, with more than 212,000 cases, is the second country with the highest number of infections, followed by Italy, with more than 201,000; behind them are Kingdom United and Germany, with more than 160,000 cases each; France, with more than 129,000; and Turkey, which has been the last to overcome the 100,000 barrier. (WHO 2020)

A determining factor in this pandemic is the ignorance of its evolution, development and form of contagion, the virus has spread rapidly through various regions causing the uncontrollable increase in cases, raising the epidemiological curve and the collapse of health systems, with loss of human lives in the absence of information to define adequate treatment, with timely medical assistance.

Apparently, this virus has a longer incubation period during which it does not emit symptoms, which allows it to spread throughout the body, settle in the lungs, where in most cases it produces serious respiratory problems that can cause death affected. It is important to clarify that after incubation there are only symptoms that can vary from mild to severe.

The virus is generally transmitted from one person to another by means of the small drops (known as Flüge microdroplets) that are emitted when speaking, sneezing, coughing, being very contagious and aggressive, it spreads quickly, when people are in contact close to and touching a contaminated surface and relate it to the mouth, nostrils, eyes or ears. According to experts, the incubation period can vary from seven to fourteen days and in which, when the test is positive, in symptomatic infected patients and those without symptoms, the tests are negative when the immune system produces antibodies after passing the illness. However, cases have been reported whose diagnosis has continued to be positive despite having been almost a month old since the onset of symptom;

#### ➤ *Aim:*

Carry out a descriptive analysis of the pandemic caused by COVID 19 in the Ecuadorian population through a reflection based on scientific, bibliographic data obtained from reliable sources, to raise awareness and make recommendations that contribute to reducing infections while investigating treatment. to end the pandemic.

## II. MATERIAL AND METHOD

A bibliographic review of the database obtained from the electronic pages SCIELO, REDALYC and from the pages of WHO and PAHO was carried out. Pandemic, coronavirus, influenza words were considered during the search. The information obtained was analyzed to understand the effects and make recommendations for this health problem.

#### ➤ *Background*

Ecuador is a country located in South America with a population of 17,300,000 inhabitants, it has four geographic regions: the coast near the sea, the mountains, the Andean mountainous area; the eastern or Amazon region and the insular region formed by the Galapagos Islands.

The government was strengthened within a legal framework and coordinated by the Ministry of Public Health as the highest National Health Authority, with the support of agencies attached to the health authorities to contribute to the protection of risks to the health of the population: the National Regulatory Agency for Health Control and Surveillance (ARCSA), and the Agency for Quality Assurance of Health Services and Prepaid Medicine; guarantees the right to health, in accordance with the Constitution of the Republic of 2018. The health system faces chronic non-communicable diseases (cardiovascular, diabetes, cancer), malnutrition, overweight and obesity every year, there are also infectious diseases, problems respiratory, diarrhea and intestinal parasitosis, and winter diseases such as malaria, chikungunya, zika, dengue, among others that generate morbidity and mortality.

In the month of February, the coronavirus (COVID-19) arrived in Ecuador, the first identified case was a passenger who came from Italy, without presenting symptoms, visited coastal beaches, cities in the mountains and various tourist places from the country. When she presented severe symptoms, she went to a private care center from which she was transferred to an emergency hospital in the country, where she underwent the COVID 19 test, which was positive, it was officially reported on February 28 and the government ordered investigation To establish an epidemiological fence, the news caused panic to his family group and friends who had accompanied him during his stay.

Although the news reported on the disease in China, the large number of infected and deceased, the authorities and the population still felt the problem far. The international media reported on the progress of the disease in Italy and Spain, and in the United States. Emergency measures were implemented, with the ban on mass meetings, in shopping malls and airports, the temperature began to rise, but could not contain the development of the disease. The greatest number of cases was concentrated mainly in the province of Guayas, in the cities of Guayaquil and Babahoyo, where the contagion spread rapidly.

On March 16, the President of Ecuador, Lenin Moreno, declared a state of emergency and began a voluntary quarantine to prevent the spread of the virus, from that moment the Government began to organize actions against the pandemic, in the first place, Vice El President Otto Sonneholzner, Minister María Paula Romo, with the team of ministers supported by other police authorities, the army and the sections, undertook this task with the great responsibility of saving as many lives as possible and, in fact, the emergency has demanded a lot of agility. And creativity in trying to stop the contagions that grew exponentially.

### III. IMPACT ON THE POPULATION

In a short time, fear took hold of people, without knowing how to act and without knowing if they were infected or not, hospitals and health care centers quickly collapsed despite the measures implemented by the Government and authorities, the population Quickly search where the proof is, performed to rule out the virus, showing that we have had no tests to meet demand. What is added to the stationary influenza tables, which is confused with the population that is aggravated to the point of requiring oxygen and mechanical ventilation, not available due to the oversaturation of the patients, with increased human losses due to the lack, of medical infrastructure, supplies in health services.

The recommendation was to stay home in a voluntary quarantine in the hope of avoiding infections and not getting sick, however, possibly because it is the first time that the population has faced this situation, people start to get sick without apparent cause, many serious situations that caused his death, in a short time the deceased increased and despair invaded the citizens of Guayaquil.

Scheduled flights were allowed for Ecuadorians residing in cities in Europe, who promised not to leave their homes and carry out a voluntary quarantine, who did not comply and, being infected, attended several meetings, increasing the number of infections, people attended to the hospitals and filled them causing a collapse in the sanitary units.

The level of contagion increased in such a way that the government began to take more severe measures, with the implementation of restrictions on mobility at various times, but the strictest was applied to the province of Guayas, implementing a curfew. and the suspension of work at all levels, except those of production in food chains, medical care, entities that generate public services, generation of electricity and drinking water, banks and waste collection, to avoid contact between people, avoiding contagion, the social distance of the minimum meter and a half between person and person, and emphasizing the hygienic measures that must be applied, hand washing, among others.

These restrictions made many reflect, however, another part of the population still persisted in taking the situation very lightly, and they did not respect the suggestions and measures. Because they were unaware of

the virus's behavior in terms of aggressiveness and rapid level of spread, doctors did not make the required emphasis regarding the use of a mask, and it was stated that only doctors and infected people should wear it, so This pathology was supposed to be just another simple flu. Subsequently and slowly, they began to take deeper cleaning measures on buses and means of transport, while infections increased from the first week considering only the cases verified with the test as positive, the second week there were more than 20, so that the numbers started to increase, double the day, the evidence became scarce, as the cases increased exponentially in such a way that the demand exceeded the supply of the laboratories that had the support of the government.

Many people began to publish on social networks that they felt symptoms such as fever, cough, chest pain, feeling of shortness of breath, some only had discomfort in their throat and others with headache, fever and bone pain, as it was a new disease no one was completely sure of having it or suffering from any other type of influenza and because it was in the winter stage there was also the presence of dengue, chikungunya or other diseases transmitted by mosquitoes (aedes aegypti.)

In general, it could be said that the main cause of the high mortality rate was perhaps that the entire population did not perceive the danger and did not obey the exit restriction measures, social distancing, this being a determining factor as a means of contagion, because it was also reported that there were people who, being positive, were asymptomatic and became transmitting agents of the virus.

Despite having systems with protocols established by the national health system for situations that are frequent in the country, COVID 19 demonstrated that it is a disease from which there is still much to learn, without a specific response system and without protection, health personnel also began to get sick, little by little it was known that the virus advanced to almost two meters, that it enters through the mouth, nose and eyes, adheres to clothing and metal and plastic surfaces, to the floor, to the soles of shoes, allowing people to transport the virus home without realizing it. The lack of adequate biosecurity material for health personnel, doctors, nurses, among others, worsened the situation and they also began to die, as a result of fulfilling their role of caring for infected patients.

### IV. CORONAVIRUS

Coronaviruses (CoV) are a wide family of viruses that can cause various conditions, from the common cold that can cause infections of the lower respiratory system. Viruses in this family can also cause various diseases in different animals, such as dogs, cats, birds, pigs, and rodents. They are classified into four genres: alpha, beta, gamma and delta. Human coronaviruses (HCoV) are found in two of these genera: alpha coronaviruses (HCoV-229E and HCoV-NL63) and beta coronaviruses (HCoV-HKU1, HCoV-OC43, coronavirus of the Middle East respiratory syndrome [MERS-CoV] and the acute and severe respiratory

syndrome coronavirus [SARS-CoV]). Even more serious diseases are involved in gastroenteritis of infants, such as the coronavirus that causes Middle East respiratory syndrome (MERS-CoV) and the one that causes severe acute respiratory syndrome (SARS-CoV). (Arturo Galindo Fraga, et al. 2020)

These viruses were called coronaviruses because under the electron microscope they show mace-shaped external protein projections that give the viral particle a corona appearance. The genome encodes four or five structural proteins (a spike protein [S], a small envelope protein [E], a membrane protein [M], a nucleocapsid protein [N], and in some viruses a hemagglutinin esterase protein (HE)), several open reading frames scattered by structural genes, as well as a polyprotein that is processed into multiple (usually 16) non-structural proteins. These nonstructural proteins participate in the replication of the virus; but they are not incorporated into the virion. Coronaviruses have also been isolated in different animals such as birds, and in their respective species they cause a wide variety of respiratory, gastrointestinal, neurological and systemic diseases, which have subsequently been detected in humans.

Since the mid-1960s, human coronaviruses CoVH-229E (group 1) and CoVH-OC43 (group 2) have been identified; they have been associated with the common cold and were considered relatively benign respiratory pathogens. Its genome has a homology of over 80% with respect to previous coronaviruses. Cases must be confirmed by RT-PCR test. (Serra Valdés M.Á. 2020.)

Coronaviruses are enveloped, large RNA viruses, their particles ranging in diameter from 120 to 160 nm, containing a positively polarized, single-stranded, single-stranded RNA genome (27 to 32 kb), the largest genome among ribonucleic acid virus. The genomes are polyadenylated at the 3' end. Isolated genomic RNA is infectious. The helical nucleocapsid is 9-11 nanometers in diameter. On the outer surface of the envelope are spaced multiple projections in the shape of a golf club or a petal of 20 nm in length, suggestive of a solar corona.

The structural proteins of the virus affected a phosphorylated nucleocapsid (N) protein of 50 to 60 kDa, a membrane glycoprotein (M) of 20 to 35 kDa that serves as a matrix protein embedded in the double lipid layer of the envelope and that interacts with the nucleocapsid, and the spike glycoprotein (S; 180 to 220 kDa) that constitutes the petal-shaped peplomers. Some viruses, including the human coronavirus OC43 (HCoV-OC43), contain a third glycoprotein (HE; 65 kDa) that causes hemagglutination and has acetyl esterase activity. (Geo. F. Brooks, Karen C. Carroll, Janet S. Butel, Stephen A. Morse, Timothy A. Mietzner 2014.)

It was believed that only animals were transmitted to man, but communicability between people was demonstrated. (Yu IT, Li and Wong TW. 2004) (Song Z, Xu Y, Bao L.s / f)

The detection and typing of new coronaviruses in bats and other animals has expanded knowledge of the diversity among coronaviruses, which is likely to continue. The current situation shows this. (Paules CI, Marston HD, Fauci AS. 2020) (Sarasua JM. 2020)

#### ➤ *Mutations And New Strains*

A new coronavirus is a new strain of coronavirus that has not been found before in humans. The first SARS data, COV 2 or also called COVID 19, was reported to the WHO in Wuhan, a city located in the Chinese province of Hubei, on December 31, 2019. (WHO 2020) where the first cases of pneumonia were reported, which was classified as a pandemic. (OPS 2020)

When people have been exposed to the virus, through an infection or a vaccine, the immune system creates specific antibodies to neutralize it, that is, to produce immunity. However, influenza viruses can mutate, change, very quickly. From time to time, influenza viruses mutate enough to produce a new strain; this process is known as antigenic tendency. People who have been exposed to a strain related to that virus have probably affected some immunity. Sometimes a sudden change in a virus produces a very different strain from the others, this process is known as an antigenic change, producing a prevalent and serious disease.

Specialists in genomics have stated that this virus has at least two strains with different degrees of aggressiveness or virulence, this statement also maintains that the longer it passes and the more people become infected with the virus, the greater the possibility of mutating and that will cause the appearance of new Strains It is still unknown how genetic inheritance influences the installation and incubation period of the virus in humans, but this factor deserves a more in-depth and longer study. With this background it is evident the need to carry out genome analysis of the viruses present in Ecuador in the different regions of the country, to identify its characteristics and behavior in the Ecuadorian population. Allowing to decipher if there is any mutation of the virus alters some environmental factors related to the climate, geographical situation, genetic or sociocultural factors.

There is a high risk factor for older adults who are more vulnerable, especially if they have diseases such as diabetes, hypertension or heart problems due to infection and death, which is why they were done with greater care and protection.

#### ➤ *Symptoms And Diagnosis*

The most common symptoms are fever, dry cough, and shortness of breath. Complications may include pneumonia, acute respiratory syndrome, or sepsis. So far there is still no specific vaccine or antiviral treatment.

Within the presumptive diagnostic parameters for COVID 19, altered values are managed in biometrics such as the white line, due to the defense of the organism against the virus, low platelets against the possible alteration in the activation of the coagulation system, already mentioned in

other studies such as ICD-type consumption coagulopathy. (Disseminated intravascular coagulation) and inflammatory markers such as PCR and increased ferritin, in addition to tomographic imaging with ground glass images in the lungs, generally bilateral. That add to the clinical symptoms as a background. And it was corroborated before a COVID 19 test with a positive diagnosis (Escher R. Breakey N, Lämmle B.2020)

The pathogenesis is still not well understood, for 25% of severe patients, there is a frankly complicated situation and for 5%, severe hypoxia, inflammation and sepsis with associated coagulation disorders and even, data on thrombotic vascular damage in adults and children. Vessels And still less is understood how a patient with several days of evolution suddenly worsens in hours, requiring attention in the Intensive Care Unit (ICU) and respiratory support. There are a multitude of pathogenic hypotheses, from disseminated intravascular coagulation (DIC), endothelial damage such as thrombotic microangiopathy (MAT) with complement activation, virus attack on the hemoglobin B1 chain and its consequent inhibition of the heme molecule with severe decrease in Hemoglobin carrying capacity and iron release into the circulation.

When facing this disease, some data have been found that indicate the phases that occur during the development of the virus as manifested: ALM by Francisco et al 2020 in their recently published study Coronavirus and Kidney.

- **PHASE I:**

Early infection (day 1 to day 6-8). High viral load in rhinopharyngeal secretions. The initial stage occurs at the time of inoculation, when the virus establishes its residence in the host, an incubation period with mild symptoms, general malaise, fever and dry cough, later the virus multiplies focusing mainly on the respiratory system using the receptor of angiotensin-converting enzyme 2 (ACE2) (lung, small intestine, kidney, and vascular endothelium). It is the phase of a great viral load. The diagnosis includes the direct viral detection test by PCR, which can only be positive 2-3 days after the onset of symptoms, serum analysis for SARS-CoV-2 IgG and IgM, together with chest images, complete blood count (lymphopenia and neutrophilia), liver function tests. Serological tests will be negative.

- **PHASE II:**

Inflammatory lung (moderate): lung involvement without hypoxia (IIa) and with hypoxia (IIb) (7-10 days.) Patients develop viral pneumonia, with cough, fever, and possibly hypoxia (defined as PaO<sub>2</sub> / FiO<sub>2</sub>). <300 mmHg). Bilateral infiltrates or opacities in ground glass are observed (we have already commented that with more precision on CT than on chest X-ray). Blood tests reveal an increase in lymphopenia, with elevated transaminases and sometimes procalcitonin, hospitalization is required. Treatment would consist primarily of supportive measures and available antiviral therapies. In the presence of hypoxia, it may require mechanical ventilation and corticosteroid support.

- **PHASE III:**

Extrapulmonary systemic inflammation. It manifests as a syndrome of extrapulmonary systemic hyperinflammation. At this stage, markers such as interleukin (IL) -2, IL-6, IL-7, granulocyte colony-stimulating factor, macrophage inflammatory protein 1-a, tumor necrosis factor-a, are raised. PCR, ferritin and D-dimer, and are specifically more affected in those patients with more severe disease. Troponin and the N-terminal pro type B natriuretic peptide (NT-proBNP) may also be affected. At this stage, hemophagocytic syndrome, shock, vasoplegia, respiratory failure, and even multi-organ failure with systemic involvement including myocarditis may occur. Stage III treatment involves the use of corticosteroids together with cytokine inhibitors such as tocilizumab (IL-6 inhibitor) or anakinra (IL-1 receptor antagonist) and immunoglobulin (IVIG) for modulation of an immune system. In general, the prognosis is severe. (ALM de Francisco et al 2020)

- **Adaptive Immunity**

The specificity of the culinary immune adaptive response with the development of IgG, around 7-14 days, which begins the activation phase of the disease. In the question of positive PCR, IgM and IgG results, at this critical moment in the test question of "quality" of the host immune response.

Thereafter, in a normal situation, the IgM will disappear until IgG is specifically detectable with two possibilities:

- Positive viral PCR: in the final phase (or late stage) of the infection, or before a recurrence. In general, IgM would have disappeared by this time, although it could continue to be positive depending on the days of evolution of each patient.
- Negative viral PCR: we would be in a situation of cure or past infection. Negative viral PCR is variable around 14 days in pharyngeal samples. In some cases, viral PCR could be falsely negative, despite the presence of the virus, depending on the sensitivity of the test, the sample collection technique or the viral load at that time. In some cases it will require a confirmation test.

- **Death Rate**

The INSPI National Institute for Research and Public Health has been, in the first instance, the official laboratory for the detection of the virus. Currently, there have been an increase in the laboratories authorized to carry out the examination on suspicious persons.

According to the epidemiological bulletins of the Ecuadorian Ministry of Public Health until Monday, April 30, 2020, the official figures obtained by the National Institute of Public Health Research (INSPI) after taking 64558 samples of which 24258 are positive for COVID-19. Confirmed patients and their contacts have epidemiological surveillance and medical control by the Ministry of Public Health.

The cases in the provinces are Galápagos 60, Guayas 10200, Santo Domingo de los Tsáchilas 179, Esmeraldas 164, Manabí 554, Santa Elena 347, Los Ríos 665 and El Oro 448. Bolívar 125, Chimborazo 157, Imbabura 81, Tungurahua 145, Cotopaxi 87, Pichincha 1298, Carchi 49, Cañar 285, Azuay 426, Loja 223. Sucumbios 39, Orellana 30, Napo 19, Morona Santiago 61, Pastaza 43 and Zamora Chinchipe 43.

The conditions of the 24,258 cases of COVID-19 that have been confirmed in the country are: 20103 stable in home isolation.

- 318 hospitalized stabilized.
- 134 hospitalized with reserved prognosis.
- 1643 cases with hospital discharge
- 89 1189 recovered
- 71 871 deceased.
- 26703 cases were discarded.

The MSP currently has 27 hospitals for specific attention to coronavirus cases, 2,100 medical centers and 133 hospitals enabled to attend to citizens for other types of consultations.

On February 29, 2020, the first case of coronavirus was confirmed. On 03/13/2020 the Emergency Operations Center (COE) was activated. Which was enabled through ministerial agreement No. 00126-2020 issued on March 11, 2020. (MSP. 2020) It should be emphasized that many deaths occurred without prior confirmation of COVID 19, due to the lack of diagnostic tests, these deaths were attributed to other causes such as pneumonia, heart attack or cardiorespiratory arrest, etc., which has led to underreporting of deaths that do not add to the list of deaths confirmed by the pandemic.

#### ➤ *Treatment*

Without an official treatment guide and with little knowledge of the evolution of the disease, many infected people did not know how to act, the hospitals quickly collapsed and despite the measures implemented by the Government and the authorities, the medical care centers collapsed. The main treatment is support therapy according to the symptoms, in the first instance the fever was lowered with paracetamol, however, some specialists have stated that paracetamol can be harmful by influencing the loss of glutathione due to oxidative stress, and by This has suggested the use of novalgine or dipyron. Other types of treatment with chloroquine or hydroxychloroquine have also been suggested in other countries, associated with the use of azithromycin and supported with an antiretroviral such as oseltamivir. But there are also criticisms of this treatment, especially due to the adverse effects in relation to cardiac complications, especially in people at risk such as hypertensive, diabetic, or immunosuppressed patients. Among the latter options, ivermectin was also mentioned as another alternative, scientists, they have mentioned the possibility of using the plasma of people who have overcome the virus, while new drugs are presented and studies are carried out, some laboratories report that a

vaccine is being worked to combat the virus, but it will take at least a year to launch it, to the market and the adverse effects that it could generate are unknown.

Meanwhile, efficient and recognized resources are used to boost the immune system, such as immuno-modulators, mega doses of vitamin C and acetylcysteine to support the least impact of the virus on the body, in the same way it will always be important to protect the liver with B complex.

Until they define a treatment guideline that does not imply risks of complication or adverse effects, it is insisted on applying recommended preventive measures including washing hands, covering the mouth when coughing, the physical distance between people and the use of masks, in addition to self-isolation and follow-up for people suspected of being infected. While clinical trials are continuing to find the vaccine and effective treatments. (ALN de Francisco et al 2020)

The appearance of this virus has disrupted the life of the human race, the world will not be the same from now on, therefore it is necessary to adapt to a new way of living together in society, maintaining a social distance of at least 2 meters to avoid contagion.

#### ➤ *Epidemiological Phases*

The recommendations given to the communities to avoid the accelerated development of the virus in the population are presented according to phases that indicate how to act in each one.

##### • *PHASE 1: PREPARATION.* –

The first measures are aimed at people infected, or who traveled to a risk area, are separated from the rest of the healthy population. The first patients are identified and an investigation is initiated to identify their activity and the people with whom they have to be in contact. In this context, protocols are requested and it is determined that hospitals treat cases.

##### • *PHASE 2: CONTAINMENT.* –

Phase two consists of identifying the people who bring this infection, achieving adequate containment. Implement measures to prevent the virus from spreading at the household, community, or community level, with basic hygiene measures. The authorities initiate tasks of social distancing, closing schools, limiting travel and implementing remote jobs. Private events and demonstrations are suspended to avoid crowds, health institutions prepare for the epidemic and the transition to the third stage.

##### • *PHASE 3: COMMUNITY CONTAGIOUS.* –

Once the contained cases are overcome and the cases that are not related to imported patients are known, a community contact occurs, when there is a greater expansion. Therefore, it is important to follow the government order to avoid policies, with this it is hoped that there will not be a massive spread of the virus. In this

phase, the virus actively circulates. Medical institutions detect and treat cases of the disease to mitigate the effects. Patient care is performed on an outpatient basis, hospitals.

- **PHASE 4: SUSTAINED TRANSMISSION.-**

When cases of sustained community transmission occur, which is what has already happened in countries like Italy and Spain. In this case, health authorities must have citizens timely management of the emergency and resources. It can be understood as an exponential growth of the population. (Trade pa. 2020)

## V. DISCUSSION

Most countries in the world are affected by SARS COV 2, also known as coronavirus, which is causing thousands of deaths worldwide, a burden of each country that has its legislation and health systems in some cases more affected with first-rate technological tools and medicines. supplies, infections continue to rise. Many doctors and health personnel also passed away, leaving their lives in the line of duty to care for their patients. There is no consensus on the treatment of this pandemic, some initiatives carried out are related to treatments for other diseases, including SARS, other researchers have proposed alternatives to carry out vaccines based on genomic studies, in plasma of patients who have passed the disease and in new compounds, however, none have been shown to be fully effective, work is being done gradually over time, while they still do not have an effective medication, people remain infected and a high percentage continues to decline, especially in Ecuador, which unfortunately is currently the third most contagious place in South America.

Despite these experiences, the population does not seem to learn from the experiences and do not take precautions to prevent them, since the recommendations made are not fully met. As man is a Bio-Psycho-Social unit and the primary basic unit of humanity, it is very important to preserve its vital functionality in optimal conditions. In this sense, it must be remembered that a healthy citizen is more productive if he or she is in good health, while it is estimated that only between 10% and 25% of the world population is completely healthy. The current reality is that the general population presents inappropriate behaviors of those in their eating habits, becoming chronic problems due to the lack of a critical attitude that allows education to improve living conditions to improve their health.

The preventive measures indicated by the WHO and by the authorities should be the guidelines in this global health emergency, while continuing to investigate. It is always important to mention that in addition to protocols established by each country, the impulse to research should also be encouraged considering that. The training of professionals must be related to the development of a science that allows thinking, and acting to build a fairer and more sustainable world that contributes to improving the quality of life of people with responsible and informed participation it has been verified a huge disinterest among youth for science studies and concern for their teaching has

grown. (Álvarez Lires, M., Arias, A., Pérez Rodríguez, U., Serrallé, J. F. (2013).)

The situation allows us to reflect on the importance of training health professionals in all areas, being an imperative that moments of health crisis, because health personnel should not be lacking, because life is the most precious gift that man has, and they are also needed more people to investigate this and other issues related to the health of the planet's inhabitants. In many countries of the world, the study of the training and development of researchers is a highly relevant topic, considering it a strategic axis that contributes to the progress and development of the countries. However, there are still countries in which the importance and support that this work deserves has not been given (Vallejo López, AB, Peñafiel Pazmiño, M., Kou Guzmán, J., & Álvarez Reyes, SJ (2018). )

All the attempts to control the disease do not seem to give the desired results, so there is still a lot to understand about this virus, and that can only be obtained through research, until we find that little detail that frees us from the disease, It is the researchers who can shed light on this, because what would the world be if it were not investigated? All countries must support their researchers to face these and other health problems and seek solutions in each population reality. In the meantime, in this new reality, Health Education in current times must be an ally to face critical situations such as those experienced by the country with the coronavirus, since an educated population is more responsible for its actions and assumes its role in society with greater commitment and social responsibility.

With the firm conviction that by educating children in health we will have a conscious young person and a responsible and committed adult. The future of humanity depends on the capacities, talents and faculties of today's children and young people. For this, an education is essential of quality, driven by teachers in a conscious and responsible way.

Regarding government policies, it is an imperative that the need to train health professionals to meet the growing need for health care be recognized. The country demands that health care and higher education centers increase in size directly proportional to population growth, to face the challenges of the new millennium. This pandemic can only be combated with new regulations when carrying out daily activities to prevent its spread in the world.

## VI. CONCLUSION

Pandemics worldwide is a problem that affects human life since past centuries, however, the population has not yet learned to confront or prevent them adequately and efficiently.

SARS COV 2 or also called coronavirus is an extremely aggressive virus, with high contagion and high mortality, silent in its incubation period, which must be thoroughly studied by the scientific community to find ways to prevent its advance.

The Ecuadorian population, like most of the world's inhabitants, has not given importance to preventive measures to avoid the spread of the virus because they maintain the idea that nothing can affect it, minimizing the aggressiveness of the virus.

The reported deaths have been due to pneumonia, heart attack or cardio-respiratory arrest and have been of various ages, especially those who have presented other states of co-morbidity

It is essential that scientists deepen their knowledge about this and other pathogens that affect the life and health of the population, to prevent the death of people and guarantee a better quality of life for future generations.

Boosting the research culture is the great challenge that higher education must face, especially in Health careers, to promote a new generation of competent professionals who research and contribute to scientific knowledge.

To face COVID 19, there are several proposals, but none are definitive, however, the use of retrovirals to prevent virus replication and prevent viral overload is being applied as an early treatment, generating a better immune response with the consequent elaboration of antibodies, more a correct management of the signs of inflammatory response in the cytokine storm phase, in order to lower the mortality of contaminated patients.

#### ➤ FINAL REFLECTION

Finally, it is important to recognize that we are exposed to coexisting with millions of micro-organisms that can seriously affect health and even compromise the life of the planet's population, therefore plans to confront these pathogens must be constantly updated, it is essential assuming a change of attitude regarding daily habits, lifestyle and activities, adopting strict hygiene measures to guarantee the survival of the human race on the planet.

#### ➤ Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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