

# The Pharmaceutical Industry May Move into a New Industry of Medicinal and Edible Plants Under the Impact of COVID-19

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**Abstract:** In the global impact of COVID-19, we need to broaden our health perspective and have an overall concept of the health of all organisms in a given ecosystem. There are many drawbacks in the traditional pharmaceutical industry, which can not well solve the current problems such as the large number of sequelae of the new coronavirus, the epidemic of infectious diseases, and the climate and earth ecology caused by carbon emissions of the one health social ecosystem. In the world, plants with a long history of use, such as dandelion, can improve the sequelae of the new coronavirus, the epidemic of nutrition disorders, carbon emission reduction in one health and food security, etc. The pharmaceutical industry is more likely to enter the new industry of plants with the medicinal and edible homologous plants. The individuals eat from medicine to medicinal and edible homologous plants. The pharmaceutical industry institutions spread traditional medicine and traditional culture, and everyone understands food and medicine. The individuals are the first person responsible for your own health, and realize everyone's medicine and lifelong medicine.

**Keywords:** COVID-19, Medicinal and edible plants, Sequelae of COVID-19, Dandelion, One health, Earth ecology.

## 1. INTRODUCTION

In recent years, due to the intensification of climate change and the frequent occurrence of new and re-emerging infectious diseases, especially the global COVID-19 pandemic, Traditional Chinese Medicine and medicinal and edible homologous plants have shown their advantages in disease prevention and control. The sequelae of the novel coronavirus have a large population, and affect a wide range of organ systems for a longer period of time, which requiring the recuperation from medicinal and edible homologous plants. The novel coronavirus and other viruses accelerate the body aging, and dandelion slows aging. Pandemic diseases can be alleviated or ended by addressing malnutrition or metabolic disorders such as obesity through medicinal and edible homologous plants. Climate change and the impact of COVID-19 are intertwined, and livestock food with the high carbon emissionis shift to medicinal and edible homologous plants, promoting carbon sequestration of plants, which is conducive to food security. One health requires not only a monitoring and response system that includes the environment, entomology, wildlife, domestic animals and human populations, but also the ecological and social systems of the earth, even considering

solar system.

## 2. THE ADVANTAGE OF MEDICINAL AND EDIBLE HOMOLOGOUS PLANTS

In recent years, emerging diseases caused by new pathogens, or re-emerging infectious diseases, have appeared regularly and with increasing frequency [1, 2]. Most countries in the world have experienced multiple rounds of epidemic impact, and there are several "infection peaks". Unlike previous viruses, vaccines and high temperatures can not effectively reduce the speed of transmission. In addition, there have been frequent outbreaks of Ebola virus infections in Africa in recent years, and some infected patients have relapsed years ago. Due to the frequent mutation of COVID-19, the vaccine can reduce the severe disease rate, but it does not have a preventive effect. Sorrento Therapeutics, a company that developed 100 percent *in vitro* testing of novel coronavirus antibodies, filed for bankruptcy in 2023. What's more, the vaccine can only relatively reduce the risk of infection, and the protection period is limited. The antibody or vaccine prevention from the biopharmaceutical industry cannot completely solve the problem, and there are many problems with small molecular compounds, while the medicinal and edible homologous plants can safely and effectively prevent or even treat diseases. In terms of prevention, "Guizhi Decoction" is the first prescription from the classic book of Traditional Chinese Medicine. It promotes human immunity, regulates the balance of

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Yin and Yang of the body and promotes the smooth flow of qi and blood. It is safe and effective, and even suitable for pregnant women, and the price of medicinal materials is cheap. In addition to Cassia twig and Radix paeoniae alba, other herbs including grilled licorice, ginger and jujube are plant foods in the catalog of medicinal and edible homologous plants. In terms of treatment, Academician Zhang Boli announced that for 567 patients with COVID-19 treated in Jiangxia Temporary Hospital, lung clearing detoxification soup made the conversion rate of patients with severe disease be 0, and no patients became severe. The application of medicinal and edible homologous plants in the East and the West has a long history. The four ancient civilizations and the population now are still keen on the use of Chinese herbs in the world. In particular, the systematic history and literature of medicinal and edible homologous plants in China can be traced back to the time of Shennong more than 7,000 years ago, when Shennong ate tea to detoxify the body. "Huangdi Neijing Tai Su" describes: "fasting food is food, patients eat medicine", reflecting the idea of "medicine and food homology". "medicine and food homology" means that many food and medicine belong to the same source, there is no absolute dividing line between them, that is food and medicine can prevent and cure diseases. Yi Yin, a slave cook, was promoted to prime minister because he was good at taking medicinal and edible homologous plants to nurse the health of monarchs and nobles. In the Zhou Dynasty, the doctors were divided into four branches: food (nutritionist), disease (internist), sores (surgeon) and animal (veterinarian). Doctors engaged in diet and nutrition were called food doctors, and food doctors had the highest status. In Tang Dynasty, Meng Xian's "Dietary Herbal Medicine" is a monograph of herbal medicine that herbs can be eaten and can cure diseases. At present, there are more than 100 kinds of "medicine and food homology" substances in our catalog, and the development of ginseng banquet, Gastrodia banquet, wolfberry banquet, yam banquet, chrysanthemum banquet and angelica soup, etc.; the processed foods are lotus leaf tea, lotus seed and coix seed porridge, mulberry wine, polygonatum polygonatum wine, Dendrobium officinale tea, orange peel (orange peel), Tuckahoe cake, Honeysuckle beverage, herbal tea, and ejia cake. In terms of medicinal and edible homology in the western, the documented history of licorice can be traced back to 2100 BC, and licorice has been recorded in the world's earliest code of Hammurabi. In 400 BC, Hippocrates, the father of Western medicine, described the use of

licorice in the Complete Works of Hippocrates. In the new era, new and re-emerging infectious diseases occur frequently, and the global pharmaceutical industry is changing, we seize the historic opportunity to keep innovation, and are inspired from traditional medicine, so that the pharmaceutical industry can successfully enter the new industry of safe and effective medicinal and food homologous plants.

### **3. MEDICINAL AND EDIBLE HOMOLOGOUS PLANTS AND THE SEQUELAE OF COVID-19, PANDEMIC OF INFECTIOUS DISEASES, CLIMATE CHANGE, ONE HEALTH AND EARTH ECOLOGY**

#### **3.1. The Sequelae of COVID-19 Need Population Feeding of Medicinal and Edible Homologous Plants**

The sequelae of COVID-19 are also known as the "long coronavirus", and the World Health Organization defines it as symptoms that persist three months after infection, persist for at least two months, and cannot be explained by other diagnoses, including fatigue, shortness of breath, chest pain, loss of taste and smell. The study found that as the number of infections increased, the risk of developing the sequelae of COVID-19 increased. The SARS-CoV-2 RNA persists: SARS-CoV-2 is widely distributed, and in some patients, SARS-CoV-2 can cause systemic infections that persist in the body for months. Persistent SARS-CoV-2 RNA was detected at multiple anatomical sites, including throughout the brain, as late as 230 days after symptom onset [3]. Due to the large number of COVID-19 infected patients, the wide range of body effects, the wide range of sequelae and the long time, the population needs long-term treatment of medicinal and edible homologous plants.

##### **3.1.1. The Sequelae of COVID-19 Involve a Wide Range of Systems and a Long Time**

Since the epidemic three years ago, there is growing evidence that COVID-19 is not just a respiratory disease, but affects multiple tissues and organs in the body. The common organs or systems involved are: heart, respiratory system, immune system, gastrointestinal system, nervous system, urinary system, endocrine system, reproductive system and so on. "The sequelae of COVID-19 are not simply a disease, but rather a mixture of symptoms." In February, the US National Institutes of Health (NIH) launched a \$1.15 billion research initiative that includes a prospective "long-term COVID-19" study, in which some COVID-19 patients will be followed to study their

symptoms and the long-term effects of COVID-19.

According to earlier studies, many patients experience dozens of symptoms in multiple organ systems, and COVID-19 includes multiple adverse health outcomes, with common emerging diseases including cardiovascular, thrombotic, and cerebrovascular diseases, type 2 diabetes, myalgic encephalomyelitis/Chronic fatigue syndrome (ME/CFS), and autonomic disorders. In particular, orthostatic tachycardia syndrome (POTS) symptoms may persist for years, especially in the case of new ME/CFS and autonomic disorders, and they are expected to last a lifetime [4].

### **3.1.2. Chronic Fatigue Syndrome after COVID-19**

On January 13, 2023, researchers at the Scripps Research Center in the USA published a review in the journal *Nature Reviews Microbiology* entitled "Long COVID: major findings, mechanisms and recommendations". The study revealed that COVID-19 is a multi-system disease, including chronic fatigue syndrome, autonomic disorders, effects on multiple organ systems, and blood vessel and clotting abnormalities. It already affects millions of people around the world, and the number continues to grow. According to more than two years of research on COVID-19 and decades of research on diseases such as chronic fatigue syndrome, a considerable proportion of COVID-19 patients may be permanently disabled if no action is taken [3]. The causes and pathogenesis of fatigue and muscle weakness after infection with COVID-19 remain unclear.

### **3.1.3. Psychiatric Symptoms of COVID-19 Sequelae**

A report in the subjournal of *Lancet* on more than 1.3 million COVID-19 patients showed that mental health conditions such as anxiety and depression returned to normal over time, but the risk of cognitive impairment, seizures, dementia, psychosis and other neurocognitive disorders continued to increase for at least 2 years [4]. Compared with the uninfected control group, patients with COVID-19 were at increased risk for neurological disorders that caused cognitive and memory impairments, mental health disorders, stroke, and peripheral nervous system diseases in the first year after infection [5]. However, 12 months after the COVID-19 patients left the hospital, the rate of breathing difficulties, anxiety and depression was higher than six months ago. More patients presented with anxiety or depression 12 months after leaving hospital (26%) compared to 23% at six months.

### **3.1.4. Skin, Hair Loss, Liver and Lung Damage, and Eye Disease of COVID-19 Sequelae**

COVID-19 infection can affect patients' skin and even cause hair loss. Severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) has been detected in the skin of some patients [6].

The lungs are the main organ affected by SARS-CoV-2, with almost 50% of COVID-19 patients showing symptoms of liver damage. The lung undergoes a strong inflammatory response, while the liver exhibits enhanced oxidative phosphorylation and metabolic processes during infection [7].

As evidence about COVID-19 continues to emerge, its effects on the eye are becoming more apparent [8]. Patients recovering from COVID-19 need ocular surface monitoring for dry eye [9]. The prevalence of ocular manifestations in patients during COVID-19 varies between 0.8% and 31.6%. Symptoms of acute conjunctivitis are the most common clinical finding [10].

### **3.1.5. Risk Factors, Diagnosis and Treatment of Sequelae of COVID-19**

The diagnostic tools for COVID-19 are mostly in the development stage, including imaging to detect blood clots, electrical impedance blood tests, and saliva tests, and there are currently no widely available and effective treatments for COVID-19 [4]. Currently, diagnostic and treatment options are inadequate, and there is an urgent need for many clinical trials to rigorously test treatments and address hypothesized underlying biological mechanisms, including viral persistence, neuroinflammation, excessive clotting, and autoimmunity [4]. Yapeng Su *et al* analyzed that patients with four factors were more likely to develop COVID-19 sequelae: type 2 diabetes, blood level of COVID-19 RNA, and specific autoantibody Epstein-Barr (EB) virus reactivation [11]. T2D is associated with higher mortality in COVID-19 patients, and patients with better glycemic control have lower mortality than those with worse glycemic control [12]. Virta Health, a diabetes management company in the United States, has used artificial intelligence and mobile health to build a patient-centered, highly customized solution that can achieve blood sugar control and diabetes reversal through dietary changes alone, so it can be speculated that medicinal and edible homologous plants can improve the after-effects of COVID-19.

### **3.1.6. The Relationship between COVID-19 and the Bony Aging**

Infectious diseases, loneliness, and stress can affect cellular aging, making us less healthy and

shortening our lifespan. Viral infections may alter epigenetic age, and the accumulation of epigenetic aging caused by COVID-19 may lead to COVID-19 sequelae in survivors [13]. Arterial aging in patients with acute COVID-19 is a potential factor for long-term cardiovascular symptoms and risk [14]. Elderly patients with COVID-19 have higher mortality and are more likely to develop severe disease, and biological aging is associated with the risk of SARS-CoV-2 infection and the risk of severe development of COVID-19 [15]. Daily intake of 400 mg of dandelion extract complex improves quality of life in older male respondents and has the potential to reduce or relieve menopausal symptoms [16]. Dandelion polysaccharide extract has shown the anti-aging mechanisms of anti-inflammatory and antioxidant activities [17]. Other viruses are also closely related to body aging. Cellular aging reshapes the immune response to persistent EBV infection in herpesviriae [18]. Virus clearance in elderly mice attacked by H1N1 influenza virus is delayed by 2 days [19], and aging affects the sensitivity of endothelial cells to dengue virus infection [20]. Aging reflects the degree of liver fibrosis in chronic hepatitis C virus infection [21].

### 3.2. Epidemic of Infectious Diseases and Nutrition of Medicinal and Edible Homologous Plants

Disadvantages of the traditional pharmaceutical industry: 1) the drug target is single, and the drugs developed are not suitable for the treatment of the sequelae of COVID-19 with multi-organ diseases and multiple emerging infectious diseases; 2) The risk of failure is high, because one drug development takes 10 years, costs \$1 billion, and the success rate is about 3%; 3) The drugs is expensive; 4) It exists public opinion pressure, some public incidents of vaccine doubt has happened; 5) The chemical and biopharmaceutical industries are facing a wave of pipeline reductions, layoffs and restructuring.

Due to the large number of sequelae after the COVID-19 pandemic, it is necessary to intervene and conserve the "natural forces" of the human body and restore the balance of natural forces and Yin -Yang. Diabetes, one of the sequelae of COVID-19, is reversed through a plant-based diet; In addition, not only the sequelae of COVID-19, but also the frequent occurrence of new infectious diseases: norovirus in many places of China and Marburg virus in Africa occur, and they need to be recuperated with medicinal and edible homologous plants to reduce disease susceptibility and prevent infection.

The use of plants to treat diseases is one of the main aspects that traditional medicine has in common. Eastern countries in thousands of years ago, and Western medicine before the rise of the Renaissance in the 16th century, based on ancient Greek medicine, both widely used botanical medicine. The botanical medicine still has strong vitality, and the pharmaceutical industry partially transformed to plant feeding [22]. A research institution set up in China by the world's largest pharmaceutical company is now using its location to tap into the riches of traditional Chinese medicine, hoping that ancient practices can point the way to new treatments. GlaxoSmithKline is one of several pharmaceutical giants that have shown an active interest. GSK established a large research centre in Shanghai in 2007 and in early 2012 announced the creation of a new unit in the city dedicated to TCM research.

Most patients with infectious diseases have fever and gastrointestinal dysfunction, and half of them are malnourished and have low protein content. Adequate and balanced nutrition is critical to the response to infection, and the COVID-19 pandemic will lead to greater malnutrition, while both overnutrition and undernutrition will increase the severity of disease, and nutrition programs need to be strengthened at the level of more complex systems [23]. The development of nutrition department of infectious disease hospital started late, and the dietary conformity rate of patients in infectious disease hospital was mostly lower than 50%. Nutrition education should be strengthened to improve dietary compliance and dietary conformity rate.

Malnutrition in the body leads to impaired immune system function, decreased defense against diseases, and prone to infection [24]. Tuberculosis (TB) is the leading cause of death among infectious disease patients worldwide, and malnutrition is associated with increased TB incidence, increased severity, poorer treatment outcomes, and increased mortality. TB can be ended by addressing malnutrition [25]. Obesity with overnutrition is associated with adverse outcomes of infectious diseases, such as an increased tendency to worsen symptoms in adults with dengue infection [26].

A highly effective and non-specific strategy to reduce deaths from the COVID-19 pandemic is nutrition, environmental disinfection, rest, and treatment of underlying diseases [27]. For the treatment of severe COVID-19 patients, standard nutritional support may improve the cellular immunity level of patients by improving their nutritional status

[28]. Although there is no detailed data on the impact of malnutrition on the evolution of COVID-19, there is evidence that malnutrition increases the risk of hospitalisation for influenza-like illness. Obesity is a risk factor for severe COVID-19 patients. Latin America has shown that improving the food environment reduces the overall burden of disease, and treatment of all forms of malnutrition should be prioritised. The food industry often uses crises such as the COVID-19 pandemic to urgently promote junk food, requiring nutrition education and policies for the transnational food and beverage industry [29].

Yi-Cheng Hou *et al.* studied the impact of plant diet and non-plant diet on disease severity during the COVID-19 pandemic, and found that adherence to plant food was significantly negatively correlated with disease severity for COVID-19 patients  $\geq 65$  years old. Because nutrient-rich plant foods contain high concentrations of polyphenols, carotenoids, fiber, vitamin A/C/E, folate, iron, potassium and magnesium, etc., they can prevent hypertension and cardiovascular diseases, strengthen the immune system, and reduce oxidative stress [30]. According to the data of the World Health Organization, 80% of the population in developed countries rely on traditional medicine to solve primary health care problems, and plant-derived natural products are the next generation of antibacterial and antiviral products [31].

Dandelion inhibits HBV [32]; the leaf extract inhibits SARS-CoV-2 Omicron infection [33]; the water extract inhibits influenza virus [34] and rabies virus [35], and also inhibits *Candida albicans* [36] and bacteria [37].

Dandelion is a functional food plant rich in polysaccharides, total flavonoids, total phenolic compounds, saponins and other nutrients, and is also a medicinal and edible homologous plant, which significantly inhibits  $\alpha$ -glucosidase and  $\alpha$ -amylase, and can prevent and treat diabetes [38]. By regulating the expression of many genes and lncRNAs, it plays an important role in adipogenesis and fat metabolism [39].

In order to better cope with potential pandemics of infectious diseases in the future, emerging infectious diseases need education of medicinal and edible homologous plant/science popularization. Most emerging infectious diseases are zoonoses, and the overexploitation of earth's resources for the production of animal protein increases human contact with unknown pathogens, while the consumption of plant foods by the public has the potential to solve these two public health threats. The medical professionals and

the general public need to be trained and accepted in the concept of plant foods for disease control [40]. Policymakers should work in multisectoral collaboration to improve public health reserve in the context of future pandemics in a scalable, sustainable and equitable manner. They also should apply systematic science approaches to create causal maps of healthy living factors, including nutrition, obesity and exercise, in the context of COVID-19, to promote popular science and widely establish healthy lifestyles [41]. Advocacy for policy and industry developments in food also needs to be well carried out.

The United States has the world's largest nutrition and health food market. The nutrition industry has formed a relatively mature and stable system. It has set up disciplines, industry standards and societies, as well as scientific research institutes and innovative companies in the field of nutrition. Nutrition companies with AI modern technology, carry out precision nutrition to realize prevention and reversal of disease. In the process of our pharmaceutical industry entering the new industry of medicinal and food homologous plants, on the basis of adhering to the theory of traditional Chinese medicine, we learn from the nutrition industry model of the United States to achieve faster and better development.

### **3.3. Climate Change, Medicinal and Edible Homologous Plants**

#### **3.3.1. COVID-19 Pandemic, Climate Change and Joint Surveillance**

Global climate change, changes in land use, biodiversity loss, deforestation, all lead to initial cycle destruction of pathogens in wildlife populations and the natural environment, and result in the spread of zoonotic diseases from animal species to people and then to the globe. In 2020, The Lancet noted that the impacts of the climate crisis and the zoonotic disease COVID-19, both caused by human activities that cause environmental degradation, are also becoming intertwined and overlapping [4]. If these two crisis responses can be developed coordinately, they offer an opportunity to improve the health of populations, create a sustainable future, and better protect the planet's few remaining natural resources and biodiversity. After the COVID-19 pandemic, governments will begin to implement economic recovery plans, with particular attention to climate change for a green recovery [42].

The COVID-19 pandemic is an example of the urgent need for this type of joint surveillance-response system, which encompasses the environment,

entomology, wildlife, domestic animals and people, and the failure adopting this system has led to catastrophic socio-economic consequences. A joint regional investigation-response system was developed for West Nile virus (WNV) carrying mosquitoes, wild birds, horses and humans in Italy, instead of separate human and animal investigations. Existing regional health networks need to be further developed to focus on pandemic prevention and preparedness, which means addressing major issues related to animal diseases and natural disasters that can affect food sustainability and safety, and population resilience [43].

### **3.3.2. Animal Husbandry with High Carbon, Climate Change, Edicinal and Edible Homologous Plants**

Intensification of livestock production in low - and middle-income countries has led to the risk of zoonotic diseases such as cysticercosis, and changes in livestock production have exacerbated the potential human health risks of antimicrobial resistance in agriculture [44]. Professor Holder Asen of the University of Florida pointed out that more than 60% of human body calories come from wheat, rice and other food crops. If there is a problem of plant food security, the development of animal husbandry will increase carbon emissions and further aggravate climate change [45]. The meat industry's contribution to the climate crisis is huge, with the total emissions caused by livestock globally accounting for 14% of all greenhouse gas emissions, according to the United Nations, and the beef industry alone responsible for 65% of the entire industry's emissions.

With two-thirds of the world's population suffering from protein malnutrition and around 36 million people dying of hunger each year, new ways must be developed to feed the growing world population. Dandelion leaves provide a good source of supplemental protein compared to vegetables and fruits. The amino acid composition of dandelion protein appears to be superior to that of most seed proteins and comparable to animal proteins, and dandelion protein cake at pH = 4 has the quality retention of cheese. Therefore, dandelion, a medicinal and edible homologous plant, partially replaces animal husbandry to provide high-quality protein food, which has good potential to solve the problem of malnutrition and hunger, and, as a plant, has a good carbon fixation capacity.

High temperature causes the harmful effects of heat stress. Some heat-regulating herbs or herbal ingredients reduce the harmful effects, such as immunosuppressive effect and the generation of

oxidative stress caused by heat stress. Oxidative stress causes cell damage, and immunosuppressive effect makes the human body susceptible to infection [46]. Dandelions can be soaked in water to relieve heat stress, which is especially good for health in extremely hot weather.

Animal protein consumption has a significant negative impact on the environment. Doctors should educate and encourage patients to switch to a healthy plant-based diet that will enhance individual health, reduce global food shortages, pollution and climate change, and improve the health of the planet. Plant-based diets could reduce global mortality by 6 to 10 percent by 2050, and reduce food related greenhouse gas emissions by 29 to 70 percent. The economic benefits of improved diets could reach an estimated 13 percent of global GDP by 2050. National guidelines can incorporate the environmental impact of food choices into recommendations, and plant-based dietary choices link individuals to the health of the planet [47].

### **3.4. One World, One Health, Earth Ecology, Medicinal and Edible Homologous Plants**

One Health means multi-disciplinary, interdisciplinary cooperation in human-animal-environmental health to achieve results that cannot be achieved by a single component. It has great potential to continuously improve global health security. Many governments have begun to experiment with one health. However, there are still many cognitive and operational barriers to the full implementation of one health to maximize global health [43].

The main objective of the "One Health" strategy is to establish a whole-process health surveillance system, including the biological monitoring of wildlife hosts, identification of transmission routes, and detection and control of infected persons. The core is to form cross-sectoral, cross-disciplinary and multi-stakeholder public health strategies, and to promote information sharing among platforms and define regulatory responsibilities. The vision is to enhance pathogen control/prevention and create a unified global view of health, driving reform of the existing health care framework [48].

One health implies interdisciplinary (between disciplines) and interdisciplinary (between academia and society) health cooperation at the human-animal-environment interface, resulting in benefits not available to different sectors working separately. Present and future health should more fully integrate

environmental, wildlife, agriculture, and cultivation issues from the socio-ecosystem to better illuminate contemporary challenges similar to pandemic threats [43].

Multi-disciplinary expertise combines public health, human and social sciences, population health, territorial and environmental research. For all the same health professions (veterinarians, clinicians, pharmacists, biologists, ecologists), jointly constructed concepts should be included in the curriculum of each discipline of initial training. The vast population gains the same health awareness. As a result, based on a shared culture of population, school education provides early awareness education to support early behavioral change [48].

Over the past two decades, one health has largely been rooted at the intersection of human and animal (mostly livestock) health, aiming to demonstrate the benefits of closer collaboration between human and veterinary medicine. One Health now integrates a broader approach that considers the interactions between human and animal health and the environment (including plant health) in social ecosystems, including social and environmental factors, and goes beyond public and animal (livestock) health. It covers zoonotic disease control, food safety, food security, nutrition security, integrated disease and antibiotic resistance surveillance - response systems, water safety and sanitation, infrastructure sharing and communication [43].

In the future, one health also needs to consider the impact of the sun, other planets and other celestial bodies on human health. In the history of the European Black Death epidemic, multiple planetary conjunctions occurred in the solar system, and during the 2019-2022 COVID-19 pandemic, multiple planetary conjunctions and multiple planetary alignments occurred. Changes in the motion of the stars in the solar system cause major changes like gravity changes, which have an important impact on the earth's ecology and human health.

#### **4. CONCLUSIONS**

In view of the impact of the sequelae of COVID-19 and the severe situation of the pharmaceutical industry, the pharmaceutical industry is more likely to enter the new industry of medicinal and edible homologous plants, which will form a comprehensive system reform of the pharmaceutical industry and related agriculture, food industry and cosmetics industry. In China and

other countries around the world, the expenditure and burden of health care have increased. In China, for example, the total health cost has exploded in the last 20 years, especially after 2000, the total health cost has reached alarming figures. The National Medical Insurance Bureau released the "Statistical Bulletin on the Development of National Medical Security Undertakings in 2020", showing that the national insurance participation rate in 2020 was stable at more than 95%, and the total expenditure of the national basic medical insurance fund was 2103.2 billion yuan. In addition, China and most parts of the world have entered the aging society, and number of people with chronic diseases is also large. We should shift from the pharmacy to the kitchen, from medicine to medicinal and edible homologous plants, spreading traditional medicine and traditional culture, so that everyone knows food and medicine, and be the first person responsible for their own health, so as to realize everyone's medicine and lifelong medicine.

WHO clearly defines health as a state of physical, mental and social well-being, not merely the absence of disease or infirmity. Taking a holistic view of health, we need to rethink how we can get an overall concept of health for all organisms in a given ecosystem by effectively integrating the environment into the implementation. The concept of one health goes beyond the prevention of health crises and is closely linked to a holistic view of health between health, environmental quality, climate, food, agriculture and biodiversity, which needs to be articulated at the global level.

The four ancient civilizations, especially the Chinese traditional medicine and traditional culture of at least 7,000 years of food and medicine history, lead to promote the reform of the pharmaceutical industry, and then the lifestyle system changes. People live according to the law of time and space, to achieve changes in philosophy and culture. People respect heaven and love, and enhance internal awareness. People recognize the importance of one world, one health and one planet. From the perspective of the solar system and the universe, we can understand the unity of heaven and man, respect nature, promote the earth ecology, and build a beautiful society for mankind.

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Acknowledgements are usually put in the end of the paper, between the reference and the content. There should be no number in this part.

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