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## RESEARCH ARTICLE

# COVID-19 PANDEMIC IN INDIA AND CURRENT HEALTH STRATEGY ADAPTATION

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### ABSTRACT

The coronavirus (COVID-19) pandemic has demonstrated high intensity to affect human beings in the world—and how each individual responds can potentially affect everyone else. Initially observed in the Wuhan province of China, now vastly spreading around the world. In the world, the 80 percent death was recorded from Europe and American continents only. As redemption how could be improved socio-economic - health condition of the countries. This virus is known as the novel one and the aetiology and pathobiology is unable to understand. The structure of coronavirus spike protein is a multifunctional molecular machine that mediates coronavirus entry into host cells. The spike protein exists in two structurally distinct conformations, prefusion and postfusion. The pandemic corona also stroked in India has been severely spreading in all the pockets in the country. The prevention and precaution strategies are following However being a novel corona virus the treatment is not very sure due to non- availability of effective diagnostics and prophylactics like confirmed vaccine. This article reviews current knowledge about the structures and functions of coronavirus spike proteins illustrating how carriage the serious health threats to humans all over the world. Institute of Bio- Research and Human Development (I-BIRD) suggested for the improvement in the diet supplementation and the immunity to boost with proper protection measures of personal hygiene during the corona infection. Vaccination of COVID-19 has been started through health workers from January, 2021 in the India.

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## INTRODUCTION

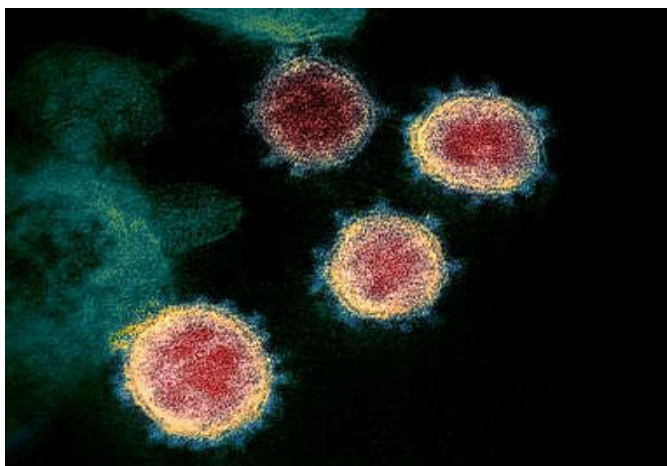
Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the previously unidentified severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) that first appeared as an outbreak in Wuhan, China, in December 2019. According to a recent structural analysis, the virus probably originated in bats and transmitted to humans after mutation in the spike glycoprotein and nucleocapsid protein, after then from human to human [Benvenuto *et al* 2020]. COVID-19 is characterized by respiratory illness with flulike symptoms such as dry cough, fever, fatigue, shortness of breath and in more severe cases, pneumonia, acute respiratory syndrome and death [WHO 2020 a]. The World Health Organization (WHO) declared the outbreak a pandemic on 11 March 2020 because > 118,000 cases had been reported in 110 countries with a sustained risk of further global spread [WHO 2020 a]. At the time of writing (26 March 2020), 416,686 COVID19 cases, with 18,589 total deaths, had been reported in 196 countries [WHO 2020b]. Coronaviruses pose serious health threats to humans and other animals also. From 2002 to 2003, SARS-CoV infected 8,000 people, with a fatality rate of ~10%

[WHO 2020c, Ksiazek, *et al* 2003, Peiris *et al* 2003, Marra 2003]. Since 2012, Middle East respiratory syndrome coronavirus (MERS-CoV) has infected more than 1,700 people, with a fatality rate of ~36% [Rota *et al* 2003, Zaki *et al* 2012 8-9]. Since 2013, porcine epidemic diarrhoea coronavirus (PEDV) has swept throughout the United States, causing an almost 100% fatality rate in piglets and wiping out more than 10% of America's pig population in less than a year [Groot *et al* 2012, Mole 2013, Stevenson *et al* 2013]. Coronaviruses are capable of adapting to new environments through mutation and recombination with relative ease and hence are programmed to alter host range and tissue tropism efficiently [G Chen *et al* 2014, Enjuanes *et al* 2006, Perlman & Netland 2009]. Viruses are more difficult to deal with than other microorganisms, so preventive measures are the best way to protect people from COVID-19. Whereas developed countries are facing serious problems in the prevention and management of COVID-19, low- and middle-income countries (LMICs) are even more vulnerable. Local, national and international organizations and healthcare institutions must take the utmost care to protect people from this serious infection. Following dispersal by a sneeze or cough, droplets containing the coronavirus are airborne and remained active in

up to 3 h. [Khadka *et al* 2010]. Developed countries have greater expertise in the investigation and management of such cases than LMICs because of a lack of awareness, compliance, financial status, infrastructure, human resource and expertise. Therefore, LMICs must prioritize science-based preventive measures in the pre-crisis phase such as regular hand washing; cleaning with soap and water or sanitizer, especially after touching a surface in a public place; using masks and gloves; covering the mouth and nose while coughing and sneezing; not touching the face with unclean hands; and social distancing [Graham & Baric 2010]. Consumption of products of vitamin C, citrus fruits, boiled water and gargling with saline water may provide symptomatic relief for the common cold, but no evidence exists for these approaches in the treatment or prevention of COVID-19 [Bucher & White 2016, Can vitamin C intake ward off coronavirus? 2020]. As COVID-19 is a viral infection and no medicines or vaccines have yet been developed, prevention of virus transmission is crucial, and confirmed cases may require treatment of symptoms during the peak over. In general, coronaviruses cause widespread respiratory, gastrointestinal, and central nervous system diseases in humans and other animals, threatening human health and causing economic loss [Li F 2013, Li *et al* 2006, WHO 2020d, Doremalen *et al* 2020]. The alternate strategy is suggested for the improvement in the diet supplementation and the immunity to boost with proper protection measures during the corona infection. Various activities conducted with the sponsorship of project by IBRHD, Allahabad assessing the food and nutritionally rich food products by using drumsticks and fish and developed the products like biscuits, papad, jams, and cakes. The outcome reported sees to shown good health by improving resistance with COVID-19, due to improved sanitation habit by IBRHD, and followed guidelines as prescribed by MoHFW, government of India [I-BIRD 2018, Tandon *et al* 2020].

### Structure of Corona Virus

Coronaviruses belong to the family Coronaviridae in the order Nidovirales and classified into four genera: Alpha coronavirus, Beta coronavirus, Gamma coronavirus, and Delta coronavirus (Figure 1). [Li 2016].



**Fig. 1.** Transmission electron microscope image shows SARS-CoV-2, the virus that causes COVID-19, isolated from a patient in the U.S. The spikes on the outer edge of the virus particles give coronaviruses their name, crown-like (Current situation in the world: <https://www.worldometers.info/coronavirus/>[26]

Recent SARS-CoV (human coronavirus) representative by beta coronaviruses. Coronaviruses are large, enveloped, positive-stranded RNA viruses. They have the largest genome among all RNA viruses, typically ranging from 27 to 32 kb. The genome is packed inside a helical capsid formed by the nucleocapsid protein (N) and further surrounded by an envelope. Associated with the viral envelope are at least three structural proteins: The membrane protein (M) and the envelope protein (E) are involved in virus assembly, whereas the spike protein (S) mediates virus entry into host cells. Some coronaviruses also encode an envelope-associated hemagglutinin-esterase protein (HE). Among these structural proteins, the spike forms large protrusions from the virus surface, giving coronaviruses the appearance of having crowns (hence their name; corona in Latin means crown) (Figures 1 and 2). In addition to mediating virus entry, the spike is a critical determinant of viral host range and tissue tropism and a major inducer of host immune responses [Wrapp 2020].



**Fig. 2.** Atomic-level structure of the SARS-CoV-2 spike protein. The receptor binding domain, the part of the spike that binds to the host cell, is colored green. UT Austin, McLellan Lab (27).

The researchers found that the SARS-CoV-2 spike was 10 to 20 times more likely to bind ACE2 on human cells than the spike from the SARS virus from 2002. This may enable SARS-CoV-2 to spread more easily from person to person than the earlier virus. (The study was funded in part by NIH's National Institute of Allergy and Infectious Diseases (NIAI) [WHO 2020e, <https://www.researchgate.net/publication/340078234>]. The transition from prefusion to postfusion conformation of the spike protein looks like triggered one, leading to membrane fusion. Human history is observing a very strange time fighting an invisible enemy; the novel COVID-19 coronavirus. Despite similarities in sequence and structure between the spikes of the two viruses, three different antibodies against the 2002 SARS virus could not successfully bind to the SARS-CoV-2 spike protein.

This suggests that potential vaccine and antibody-based treatment strategies will need to be unique to the new virus. Needed further detail discuss on the evolution of these two critical functions of coronavirus spike proteins, receptor recognition and membrane fusion, in the context of the corresponding functions from other viruses and host cells [26]. Understanding the structure and virology of coronaviruses and controlling their spread have important implications for global health and economic stability.

## MATERIAL AND METHODS

During the past four months from January to April, 2020, IBRHD conducted several awareness and health camp programmes in the rural and slum areas of Allahabad district of India to make the community aware on Covid 19, its seriousness, use of personal hygiene and nutrition the poor and uneducated people. During the health camp diagnose of COVID-19 was carried out in coordination of Medical college

**Table 1. Source: District CORONA Control Society: Status of Testing at Allahabad, U.P., India –June,2020**

S. No.	Area/ Population	Number of Medical / paramedic al Staff	Number of Testing (symptomatic) for COVID -19	Treatments and refer to hospital / Quarantine / Distribution of Hygiene kit	Positive with Co-morbidity
1	Urban Primary Health Centre , Kareli (48000)	20	48	0	1
2	Urban Primary Health Centre , SultanpurBhawa (45000)	17	36	1	1
3	Urban Primary Health Centre Ghausnagar (35000)	17	15	0	0
4	Urban Primary Health Centre Karelabagh (32000)	17	8	0	0
5	Urban Primary Health Centre, Dariyabad (36000)	16	12	1	1
6	Urban Primary Health Centre Ranimandi (120000)	36	52	2	1
7	Urban Primary Health Centre, Rajruppur (46000)	17	38	2	1

Allahabad and awareness on chronic and pandemic diseases, distributed health and hygiene kit to targeted people for prevention of the diseases during the programme. In the urban area numbers of health awareness programme were organised in the slum area of Allahabad around the Urban Primary Health Centre with the help of medical staff and approximate 200 people assembled in every meeting, status of testing of COVID-19 is given Table-1. The Institute distributed health kit and prepared nutritious food supplements in a slum area of Allahabad where staying about 500 people [Fig. 3] not only this to aware the general people of urban area about the currently pandemic disease distributed pamphlet also. The pandemic data of world were collected from reliable publish reports [I-BIRD 2018].

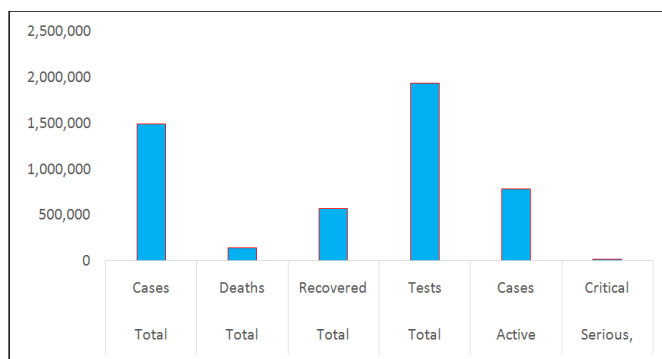


**Fig. 3. I-Bird distributed hygiene kit to poor rural people including farmers and labour to maintain their personal hygiene. It made by necessary hygiene items such as one nail cutter, towel, Dettol soap, mask and a box [24]**

## RESULTS AND DISCUSSION

The result of corona virus (COVID-19) as total case, total death, active cases, cured patient, number of testing are based on published data on several newspapers and other reliable sources *Worldometer's COVID-19 data* [<https://www.Worldometer's COVID-19 data>, <https://www.worldometers.info/coronavirus/>] in the month of May, 2020.

**Epidemiological/Pandemic status:** Current status of CORONA -19 as Total Cases, Total death, Total Recovered, Active Cases, Serious Critical and total test have been describe for six continents namely Europe, North America, Asia, South America, Africa, Oceania. In Europe continent cover-up 47 countries as per world map. It is found that maximum cases (250561) was recorded in the Spain and it's followed by Italy, UK, France, and Germany approximate in same percentage. Number of total testing was high in Italy and Germany. Whereas the minimum cases was recoded in Vatican City. The maximum death rate was recorded in the Italy and followed by Spain, UK, France, Germany, and Russia etc [Fig. 4]. In Asia continent concealment 50 countries. Maximum cases and death rate was recorded in Iran and Turkey followed by China, India and minimum was Yemen and Bhutan. The testing was also high in Iran and Turkey [Fig. 5]. Currently from July, 2020 India showed second position (64 lakh) in the world COVID-19 list, whereas number of testing have also increased. In South America continent is spread on 14 countries. The maximum cases and deaths was recorded in Brazil whereas maximum testing for covid-19 was recorded in Peru is shown in [Fig. 6]. In Africa continent cover-up 57 countries. The maximum case 7,220 and number of testing 257,541 was recorded in South Africa but death was high in Egypt. There is no death was recorded in Reunion in Africa continent till now shown in [Fig. 7].



**Fig. 4. Impact of Covid-19 in Europe Country**

In North America continent is spread of 37 countries. The maximum cases (121835), death (69921) and testing (7,462,431) was recorded in USA and followed by Canada, Mexico, and Dominican Republic etc. There is still no cases were recorded in ten countries of this continent [Fig. 8]. In Oceania continent is spread of 6 countries namely, Australia, New Zealand, French Polynesia, Fiji, New Caledonia, Papua New Guinea. The maximum cases (6,825), Death (95) and total testing (650,214) were recorded in Australia than 1507, 20 and 152,696 respectively in New Zealand. Still there is no death was recorded in the Oceania continent among the rest four countries [Fig. 9]. The Table No. 2 is showed that effeteness of Covid-19 in the India and its found that the maximum cases (16758), death (651) and cured (3094) at the Maharashtra then 6625, 396, 1500 respectively at the Gujrat. It is followed by Delhi, Tamil- Nadu, Rajasthan, Madhya Pradesh and Uttar Pradesh ect. The Fig10. is showed that more than eighty percent deaths were recorded from European and North America continents only whereas less than 20 percent from Asian, South America, Africa and Oceania continents. Mankind has observed various pandemics throughout the history where some of were more disastrous than the others to the humans. We are observing a very tough time once again fighting an invisible enemy; the novel COVID-19 coronavirus. Initially observed in the Wuhan province of China, now fastly spreading around the world [https://www.worldometers.info/coronavirus/]. Globally CORONA -19 cases reported are approximately 40 lacs till May 9, 2020, while deaths reported so far is around 2.74 lacs; and there is no vaccine/no exact medicine. In India, the total cases till May 9, 2020, are about 56342; and deaths reported are about 1886. Now more than 202 countries are in the grip of the pandemic CORONA -19. A health crisis can happen at any time and have devastating effects that disrupt the normal pattern of existence.

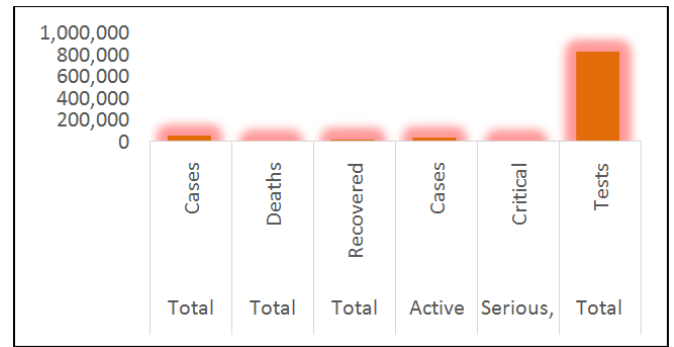


Fig. 7. Impact of COVID -19 in African Countries

The outbreak of novel beta-coronavirus (COVID-19) represents a pandemic threat that has been declared a public health emergency of international concern. The Cov spike glycoprotein is a target for vaccines, therapeutic antibodies and diagnosis. The WHO is regularly updating the whole world, as well as trying its best to evolve some concrete strategy advised be maintain health and hygiene, necessary to wear Mask, Glove, maintain physical distancing and increase immune with nutritive food products for protection [https://www.Chapter -1 WHO ].



Fig. 8. Impact of COVID-19 in Oceanian Countries

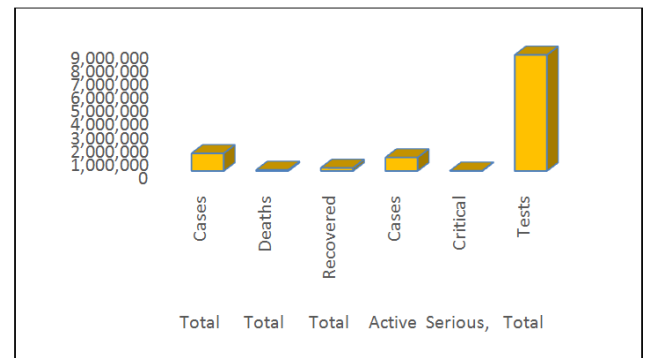


Fig. 9. Impact of COVID-19 in North American Countries

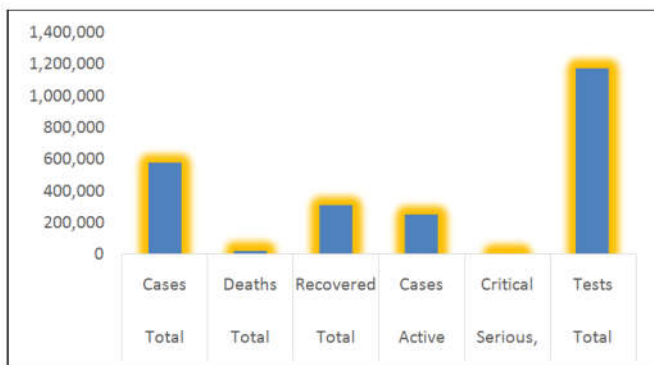


Fig. 5. Impact of Covid-19 in Asian country

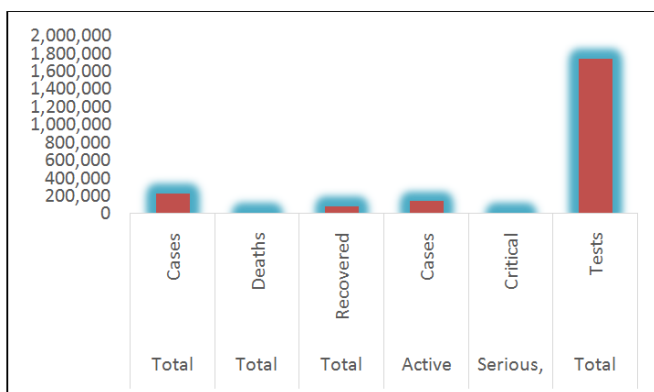


Fig. 6. Impact of COVID-19 in South America Countries

While medicine/vaccine may cure the only infected patients, but prevention is needed for the safe life. Therefore, it is advice to follow of "Prevention is better than cure". Covid-19 infection cases continue to surge despite many worst-hit nations reporting a decline in new infections. Russia and Brazil are emerging as new hotspots as both nations continue to report more than 10,000 new cases. Globally, more than 57 lakh cases of Covid-19 have been recorded with more than 3.5 lakh deaths. India has reported 1.5 lakh cases of Covid-19 in 20 May, 2020, and gradually increased but sharply increase from July to so far, while peak was observed in the month of September, 2020 (almost 500 positive cases every day reported in Allahabad city). Now Global economies are struggling to revive demand in the aftermath of Covid-19.

Coronavirus lockdowns have halted production across most sectors and nations. Now most of the countries have decided to ease their lockdowns to allow resumption of economic activities.

- Focus on measures that prevent the spread of COVID-19, such as campaigns to raise awareness, disprove myths and induce compliance.
- Recognize that prevention and overall management of such health crises may be more difficult in LMICs than in developed countries.
- Manage the global threat by establishing preparedness and mitigation plans prior to potential health crises, response plans during the crisis, and response and recovery plans after the crisis.
- Ensure the cooperation of healthcare providers and administrative bodies at local, national and global levels.

by handshake, hag, kissing) and low immunity (because most of the people generally suffering from chronic disease like high B.P., Diabetics, cancer ect). (NCD deaths are projected to increase by 15% globally between 2010 and 2020). The greatest increases will be in Africa, the Eastern Mediterranean, and South-East Asia, where they will increase by over 20% [Khadka *et al* 2020].The urban American people are showing healthy but sophisticated and not able to fighting the disease where as in the rural area people physically stronger can fight the disease. In the Iran, Iraq and UAE having more religious places of Muslim so foreign visitors transmitted the disease more in these cities than India, Pakistan and other adjacent countries in initial days. The Italy, Japan and other countries which having old and child population are more were effected more by covid-19 than the country which having youth population because immunity rate more in youth than old and children.

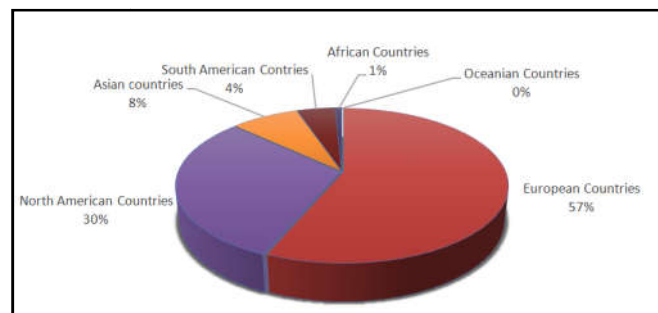


Fig. 10. Number of deaths in different continents




Fish Chakri and Namkin	Moringa Guava and Amla Jelly	Different taste of cookies of Moringa																																																																		
																																																																				
<p><b>Energy: 2240 kj- 538 Kcal / 100g</b></p> <table border="1"> <thead> <tr> <th>Test parameters</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>Fat</td> <td>31.9g</td> </tr> <tr> <td>Carbohydrate</td> <td>54.4g</td> </tr> <tr> <td>Fibre</td> <td>2.6g</td> </tr> <tr> <td>Protein</td> <td>6.9g</td> </tr> <tr> <td>Salt</td> <td>1.5g</td> </tr> </tbody> </table>	Test parameters	Results	Fat	31.9g	Carbohydrate	54.4g	Fibre	2.6g	Protein	6.9g	Salt	1.5g	<p><b>Biochemical analysis of Red Guava jelly fortified by Moringa leave powder / 100g</b>  <b>Energy : 337.9 Kcal</b></p> <table border="1"> <thead> <tr> <th>Test parameters</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>Moisture</td> <td>15.43g</td> </tr> <tr> <td>Protein</td> <td>6.81g</td> </tr> <tr> <td>Fat</td> <td>0.45g</td> </tr> <tr> <td>Carbohydrate</td> <td>76.66g</td> </tr> <tr> <td>Crude Fibre</td> <td>0.22g</td> </tr> <tr> <td>Total Phenolic Content</td> <td>175.75mg</td> </tr> <tr> <td>Total Flavond Content</td> <td>0.184mg</td> </tr> <tr> <td>Antioxidant test</td> <td>35.90µmol</td> </tr> <tr> <td>Calcium</td> <td>24.23mg</td> </tr> <tr> <td>Phosphorus</td> <td>35.51mg</td> </tr> <tr> <td>Iron</td> <td>0.22mg</td> </tr> <tr> <td>Total Ash</td> <td>0.43g</td> </tr> <tr> <td>Vitamin C</td> <td>75.78mg</td> </tr> </tbody> </table>	Test parameters	Results	Moisture	15.43g	Protein	6.81g	Fat	0.45g	Carbohydrate	76.66g	Crude Fibre	0.22g	Total Phenolic Content	175.75mg	Total Flavond Content	0.184mg	Antioxidant test	35.90µmol	Calcium	24.23mg	Phosphorus	35.51mg	Iron	0.22mg	Total Ash	0.43g	Vitamin C	75.78mg	<p><b>Biochemical analysis of Biscuit fortified by Moringa Leaves powder /100g – Energy: 482Kcal</b></p> <table border="1"> <thead> <tr> <th>Test parameters</th> <th>Results</th> </tr> </thead> <tbody> <tr> <td>Total ash</td> <td>1.72g</td> </tr> <tr> <td>Protein</td> <td>2.57g</td> </tr> <tr> <td>Fat</td> <td>24.12g</td> </tr> <tr> <td>Carbohydrate</td> <td>63.59g</td> </tr> <tr> <td>Crude Fibre</td> <td>3.75g</td> </tr> <tr> <td>Total Phenolic Content</td> <td>264.2 mg</td> </tr> <tr> <td>Total Flavond Content</td> <td>0.27mg</td> </tr> <tr> <td>Antioxidant test</td> <td>29.78µmol</td> </tr> <tr> <td>Calcium</td> <td>800mg</td> </tr> <tr> <td>Phosphorus</td> <td>230mg</td> </tr> <tr> <td>Iron</td> <td>4.25mg</td> </tr> <tr> <td>Vitamin C</td> <td>9.36mg</td> </tr> </tbody> </table>	Test parameters	Results	Total ash	1.72g	Protein	2.57g	Fat	24.12g	Carbohydrate	63.59g	Crude Fibre	3.75g	Total Phenolic Content	264.2 mg	Total Flavond Content	0.27mg	Antioxidant test	29.78µmol	Calcium	800mg	Phosphorus	230mg	Iron	4.25mg	Vitamin C	9.36mg
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Fig. 11. Food products development by Fish and Moringa

Developed countries like America, Spain, Britain, France, Germany, Iran, UAE, Japan and Turkey are having more tourism for business, education, job and religious places purpose were affected more than other undeveloped countries of the world by this disease. The other reason of transition of the disease is country wise manner and etiquette (like welcome

The health and hygiene facilities is higher in America, Italy, Spain, Britain, France, Germany than India and other developing countries but death rate was recorded higher showed that low immune capacity of people as well as low temperature in those countries is also responsible. Protection and invention is needed for controlling the pandemic so, most of the countries have adapted lockdown and closed the way of

transmission of the disease as airway, train, bus, school, college, offices, industries and shops etc. of the cities. WHO has released guideline to maintain physical distance, wearing of mask and glove and use sanitizer for hand wash. Still active cases are increasing day by day, so rapid evolving healthcare emergencies necessitate the quick dissemination of research, responsible medical staff duties, quarantine and isolation. [Kaushal et al 2012]. As the COVID-19 outbreak in modern cities of developed countries like America, Brazil, Italy, Spain, Britain, France, Germany and Belarus has entered the community transmission phase. The country needs to introduce community-wide steps to increase physical distancing in any way, according to the recommendations of a team of WHO experts at the end of its assessment of the country's response to the pandemic. As per the collected data and published report it is found that although active cases are increasing in double rate in the India but still not faced community transmission till June, 2020. The Table 2 showed that maximum cases were recorded in metro city of India as Mumbai (Maharashtra), Ahmedabad (Gujrat), Delhi, Tamilnadu, Indore, Bhopal (M.P), Jaipur (Rajasthan) and Lucknow, Agra (Uttar Pradesh), because foreign visitors of other countries as well as visitors of one state to other state also visited during the organised social gathering programmes such as Namaste India, oath ceremony of political party in M.P. and religious programmes. Migration of huge labours from one state to others state is also responsible for spreading the pandemic diseases in the India. Mostly they are illiterate, ignorant, and malnourished or suffering from hidden hunger belong to backward community.

**Table 2. Effect of COVID-19 state wise In India**

STATE NAME:	TOTAL CONFIRMED	CURED	DEATH:
Andaman and Nicobar	33	32	0
Andhra Pradesh	1777	729	36
Arunachal Pradesh	1	1	0
Assam	45	32	1
Bihar	542	188	4
Chandigarh	120	21	1
Chhattisgarh	59	36	0
Dadra and Nagar Haveli	1	0	0
Delhi	5532	1542	65
Goa	7	7	0
Gujarat	6625	1500	396
Haryana	594	260	7
Himachal Pradesh	45	38	2
Jammu and Kashmir	775	322	8
Jharkhand	127	37	3
Karnataka	693	354	29
Kerala	503	469	4
Ladakh	41	17	0
Maharashtra	16758	3094	651
Manipur	2	2	0
Meghalaya	12	10	1
Mizoram	1	0	0
Madhya Pradesh	3138	1099	185
Odisha	185	61	2
Puducherry	9	6	0
Punjab	1516	135	27
Rajasthan	3317	1596	92
Tamil Nadu	4829	1516	35
Telangana	1107	628	29
Tripura	43	2	0
Uttar Pradesh	2998	1130	60
Uttarakhand	61	39	1
West Bengal	1456	364	144

While we are all currently focused on how to treat COVID-19, the serious consequences of this global pandemic, it will

challenge us its detrimental effects on child education, food insecurity and health. With schools closed around the world, more than 368 million children in 202 countries who rely on school meals are no longer receiving them. A new report by World Bank Group and Unicef [https://economictimes.indiatimes.com], South Asia has the second highest share at nearly 36% -with over 30% of extremely poor children in India alone. (unicef/ articleshow/54685244.cms?tm\_source=contentofinterest&utm\_medium=text&utm\_campaign=cppst[36]).

**Precautionary measures to protect:** To fight the virus, they must be provided balanced and nutritious diet; as a healthy immune system can only defeat invading pathogens. For a developing country like India with so much of population pressure, it is not an easy task. The first author has done extensive research for developing such nutritious but cheap functional food, which could be an ideal food supplement for malnourished and infected, population of India. These products are tested and verified by the governmental and non-governmental agencies. The method of preparation of such nutraceuticals/functional food has been described in detail, by [Breman 2008]. The Institute distributed hygienic kits in the poor people of rural area is also useful for increasing the survival rate among them till the investigation of perfect medicine of this pandemic disease. For experiment Institute of Bio-Research and Human Development (I-BIRD) distributed above mentioned health and hygienic kit along with prescribed dose of already developed nutritious food products among 500 people in a slum colony of Kareli, Prayagraj. It is noticed that there no patient recorded for COVID-19 from this area till date of September, 2020 in comparison to same dense populated slum area of Dharavi, Mumbai. So it could be ensure that if increase hygiene and nutrition diet in regular life it may be benefited to protect them current pandemic disease. The Plasma therapy is also giving successful result with the help of cured Corona virus patient (Successful trials were recorded on cure patient of Tabligi Jamati). This has shown good health and people found resistant with the proper sanitation and protection measures prescribed by the MoHFW, government of India. The supplementation immunity products MoringaAmla Guava Jelly and Moringa biscuits developed by Moringaoleifera and fortify with Amla and Guava [Rizvi et al 2018, Rizvi 2015 and Fig. 11]. When treatment is not very sure due to non-availability of effective diagnostics and prophylactics particularly the unviability of vaccine.

**Vaccination:** India has already rolled out a massive coronavirus vaccination drive using two vaccines, Covishield and Covaxin. Covishield has been developed by AstraZeneca and Oxford University and is being manufactured by Serum Institute of India. COVAXINTM, India's indigenous COVID-19 vaccine by Bharat Biotech is developed in collaboration with the Indian Council of Medical Research (ICMR) - National Institute of Virology (NIV). Dr. S A M Meesum (senior medical officer) the author of the paper has been given first dose of vaccine in January, 2021. In India has been vaccinated 50% health workers till February, 2021.

## Conclusion

On the 2<sup>nd</sup> October, 2020, there have been 35,437,478 confirmed cases of COVID-19 in the world including 1,042,344 deaths and 26,645,438 recovered as reported by

WHO. There America is still first ranking with total cases (7,637,066) while India is second position including the first author (I was victim of this pandemic in the month of Sep.,2020) with total cases (6,626,291) in world COVID -19 list. The confirm cases and number of deaths still increasing in most of the countries day by day but still has not been discovered confirm vaccine to control the pandemic disease. So, it is concluded that take care every person by personal hygiene and boost immunity through available nutritious food and effective vaccination.

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