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Impact Of Coronavirus Disease (Covid-19) On Human Body, Eating Habits And Lifestyle Related Activities: A Review

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Abstract
In late 2019, there was a burst of a novel infectious coronavirus (SARS CoV2) which became global pandemic and named as Coronavirus disease (CoViD-19) by World Health Organization (WHO). In the starting phase of pandemic, lockdown was imposed in the entire world. Due to this, the access to fresh foods has been disturbed, their routine life was confined in the home. As people have to stay inside the house, their physical activity was also effected. In this fearfull situation, people faced stress and to reduce their stress, some of them have increased their alcohol consumption. On the other hand, more time at home may have resulted in some positive habits including an increase in cooking. The characteristics and symptoms related with the actual COVID-19 pandemic made the physical activity interventions a valuable prevention and treatment factor. Physical activity improves body composition, the cardiorespiratory, metabolic, and mental health of patients. This review paper includes tracement of coronavirus in human body. The aim of this review was to find that how corona virus have effected human body and to assess dietary changes, lifestyle changes during the first lockdown.

Keywords: COVID-19, coronavirus, lockdown, physical activity,human body, alcohol consumption.

1.Introduction

Pandemic, a breakout that spreads beyond countries or continents and affects more people and destroys more lives apart from an epidemic. It's definition given by WHO is "worldwide spread of a new disease". Pandemic takes place all over the history and seems to be growing in number especially because of the increasing arrival of viral disease from animals. The 2019 Coronavirus Disease also known as COVID-19, is a severe acute respiratory syndrome caused by SARS coronavirus 2 (SARS-CoV-2). It was expected that in December 2019, SARS-CoV-2 outwardly pass from animals to humans at the Huanan seafood market and swiftly spread from Wuhan City of Hubei, Province of China and to the skies of the world.[1] In January 2020, the world faced an outbreak of coronavirus disease 2019.[2] In view of as growing cases were arrived at Chinese and international locations, on the 30th January 2020, the WHO Emergency Committee

announced a global health emergency.[3] And therefore, it was declared a pandemic in March 2020.[4-6] COVID-19 acts different people in different means. All most, infected people will grow mild to moderate illness and improve without hospitalization.

Covid-19 compared to other common conditions [7]:-

SYMPTOM	COVID-19	COMMON COLD	FLU	ALLERGIES
Fever	**Common**	Rare	Common	Sometimes
Dry cough	**Common**	Mild	Common	Sometimes
Shortness of breath	**Common**	No	No	Common
Headaches	**Sometimes**	Rare	Common	Sometimes
Aches and pains	**Sometimes**	Common	Common	No
Sore throat	**Sometimes**	Common	Common	No
Fatigue	**Sometimes**	Sometimes	Common	Sometimes
Diarrhea	**Rare**	No	Sometimes	No
Runny nose	**Rare**	Common	Sometimes	Common
Sneezing	**No**	Common	No	Common

Table no. 1

Most common symptoms: Fever, cough, tiredness, loss of taste or smell.

Less common symptoms: Sore throat, headache, aches and pains, diarrhoea, rashes on skin, or discolouration of fingers or toes, red or irritated eyes.

Serious symptoms: Difficulty breathing or shortness of breath, loss of speech or mobility, or confusion, chest pain.[8] Usually, it takes 5–6 days from when someone is infected with the virus for symptoms to show, however it can take up to 14 days.

Structure of Coronavirus

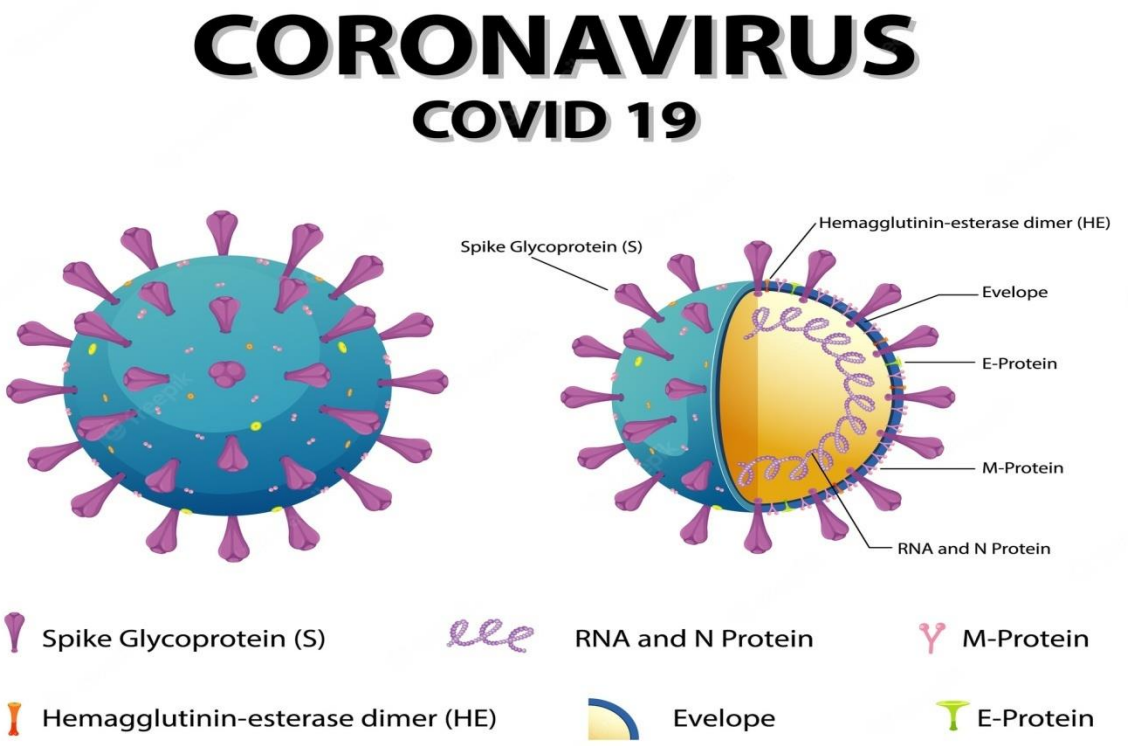

Figure :- 1

The coronavirus particles are established with long RNA polymers closely filled into the center of the particle, and enveloped by a protective capsid, that is a screen of repeated protein molecules known as coat or capsid proteins. In case of coronavirus, these proteins are called nucleocapsid (N). The coronavirus core particle is extra enclosed by an outer membrane envelope made of lipids (fats) in which proteins are added. These membranes are carried from the cells in which the virus was last assembled but are changes to contain specific viral proteins, including the spike (S), membrane (M), and envelope (E) proteins.[9]

2. Coronavirus in body

Tracking Coronavirus in Human Body [10]

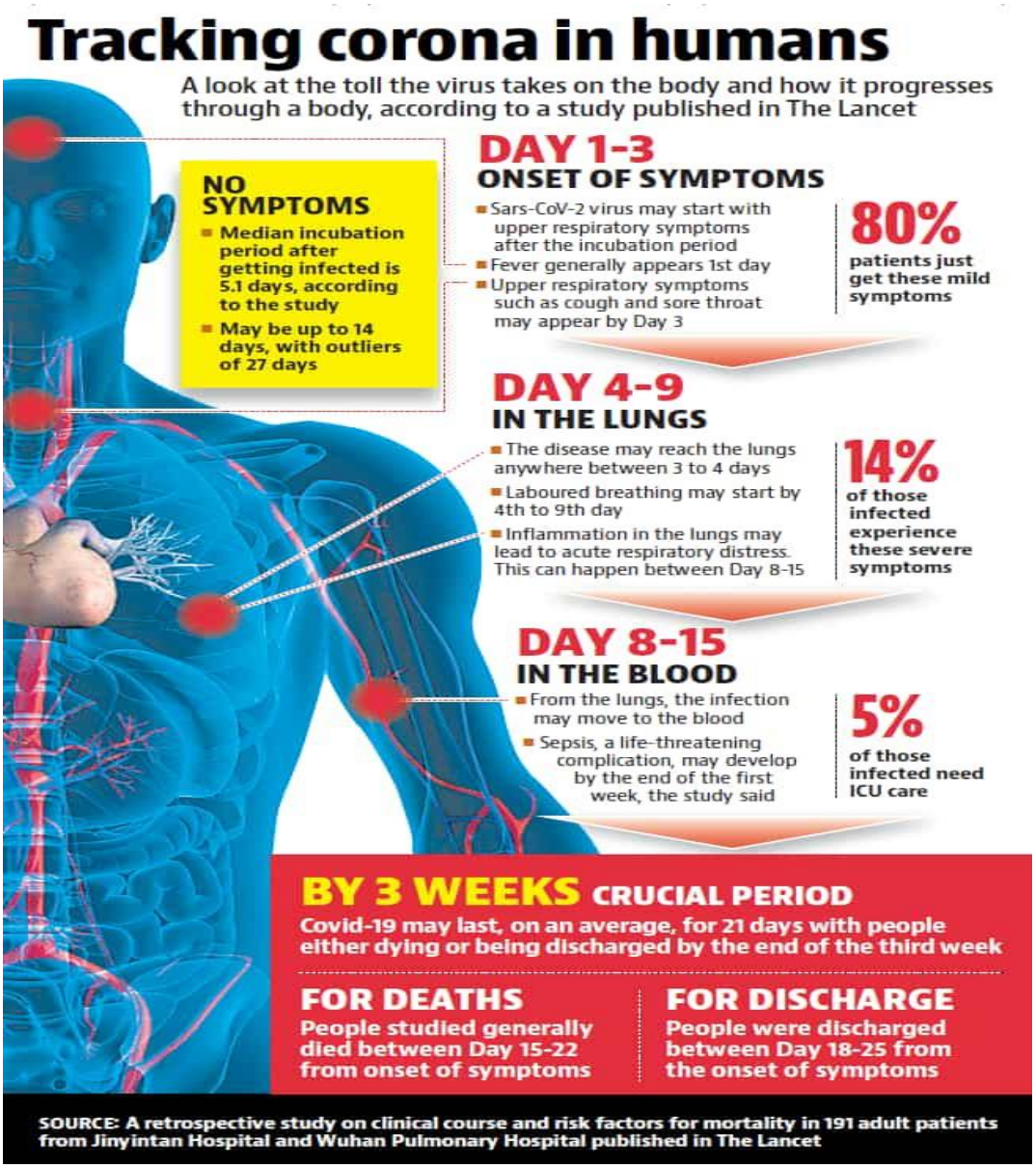

Figure :- 2

a. Corona Virus and lungs

As the virus enters in the body, it links with the mucous membranes that lined up the nose, mouth, and eyes. The virus penetrates into a healthy cell and utilises the cell to build new virus parts. As they grows and multiplies, then the new viruses infect nearby cells. Trachea or windpipe splits into smaller and smaller branches in the lungs. By the end of each branch, there are tiny air sacs called alveoli. And this is where oxygen goes into our blood and carbon dioxide comes out.

The new coronavirus can infect both the upper or lower part of our respiratory tract. It moves down in the airways. The lining can develop into irritated and inflamed. Also in some cases, the infection can move all the way down into the alveoli.[11]

Mild and Moderate Cases:-

As the infection moves towards the respiratory tract, immune system fights back. Lungs and airways swell and become inflamed. This can be happen in one part of lung and spread.

As 80% of people who are suffering COVID-19 get mild to moderate symptoms eg., dry cough or a sore throat. Some people have pneumonia, a lung infection in which the alveoli are inflamed.

Severe Cases:-

About 14% of COVID-19 cases are severe, in which both the lungs are affected. At the time when, swelling gets worse, lungs fill with fluid and debris. So, facing more serious pneumonia. The air sacs fill with mucus, fluid, and other cells that are trying to cop up with the infection. This can results in making it harder for body to take in oxygen. Thus, having trouble breathing , feel short of breath or may also breathe faster..

Critical Cases:-

In critical cases i.e, 5% of total cases, the infection can harm the walls and linings of the air sacs in the lungs. When the body tries to fight it, lungs become more inflamed and fill with fluid. Thus results in making it harder for them to swap oxygen and carbon dioxide.

The end result may be, severe pneumonia or acute respiratory distress syndrome (ARDS). In the most critical cases, lungs need help from a machine called a ventilator to complete their job.

A study revealed that 20-30% of the critically ill patients can develop clots in the lungs, heart, brain and legs, some of which are life threatening.[12]

b. Corona Virus and heart

Doctors have noticed a number of heart issues in people with COVID-19, especially in those who are seriously ill.

These are stated below:

1) Arrhythmia**-** Bouncing or racing heartbeats.
2) Cardiomyopathy- Heart becomes fragile , thick and stiff heart tissue.
3) Acute cardiac injury- Body releases high levels of a protein called troponin. This commonally happens when the heart is damaged.
4) Shock- Heart can't pump enough blood for the body.[13]

c. Corona Virus and brain

COVID-19 seems to cause problems with the nervous system including seizures. They can be due to swelling in the brain or inflammation of central nervous system. Some other symptom could be :

1) Loss of consciousness

2) Loss of sense of smell

3) Stroke [14]

d. Corona Virus and Liver

COVID-19 patients who are in the hospital have enzyme levels in their blood that signal liver damage. It may not be the virus itself that causes it. The reasons may be medication or an overworked immune system too.[15]

e. Corona Virus and Blood Vessels

COVID-19 also infects the cells that lined up the blood vessels. Alongside from heart issues, it can also developd blood clots that lead to a stroke or pulmonary embolism. Seriously ill with COVID-19 cases, often have much more of a substance doctors call "D-dimer" in their blood. That signals more blood clots.[16]

3. Eating habits in COVID-19

Food, a key to personal health [17], and to the health of the planet given that current patterns of food production and consumption have considerable environmental impacts.[18]

The pandemic has influenced food approach and acquisition behavior: decreased shopping trips, stockpiling, online shopping, etc. [19], food consumption patterns and eating habits [20], including food wastage behavior [21]. In some cases, the pandemic generated a greater stress on health and nutrition and on the other hand unhealthful eating habits and repeated snacking [22], particularly for individuals having eating disorders.[23]

The consumption of fresh foods, especially fruit, vegetables and meat or fish have decreased due to the confined access to daily groceries, the highly processed food such as, junk foods, snacks, and ready-to-eat cereals, seems to be high in fats, sugars, and salt were more consumed due to their availability . This crisis results to alter emotional responses of individual that a negative effect in human psychology [24,25], besides this ,the availability also modified food habits leading to stress eating or "emotional eating".[26,27]

Boredom has been directly linked with a greater energy intake, as well as the consumption of higher levels of fats, carbohydrates, and proteins.[28] Further, as the COVID-19 cases were increasing contiuously, this developed stressful condtitions. Necessarily, the stress knockes people toward overeating, mostly looking for sugary "comfort foods".[29] This desire to consume a specific kind of food is defined as "food craving", which is a multidimensional concept including emotional (intense desire to eat), behavioral (seeking food), cognitive (thoughts about food), and physiological (salivation) processes.[30]

4. Physical activities in COVID-19

Physical Activity (PA), any bodily movement produced by skeletal muscles that require energy expenditure.[31] During the COVID-19 pandemic it becomes more important for all people to be physically active. Whether, it is only a short break from sitting and doing some walking or stretching.
Physical inactivity has been termed as "doing no or little PA at work,
at home, for transport or in discretionary time".[32]

A study found that relationship between PA and COVID-19, that adults who had symptoms of this virus had a low level of PA, whereas those who showed no symptoms had light-to-moderate levels of PA.[33] During the lockdown, PA reduced compared to a normal week and this decrease was larger in men than in women.[34-35] Interestingly, PA
was decreased in the starting of lockdown and evenly increased during lockdown without reaching levels of a normal week. Bearing in mind, the specifc domains of PA, daily occupational, transportation, and sporting activities lowered in lockdown, but leisure-time activities increased.[36] During the lockdown, physical activities such as jogging and sports decrease, whereas watching TV, using electronics, and social media increased.[37]

Physical inactivity affested all aspects of human function eg., neuromuscular, cardiorespiratory, and metabolic systems. Physical inactivity is related with positive energy balance, fat deposition, and low-grade systemic inflammation.[38] This positive energy balance might further develops overeating habits during home confnement.[39] Thus increased caloric intake and reduced PA , induced weight gain during lockdown.[40]

6. Drinking habits in COVID-19

Pandemic has changed people's lifestyles, including their drinking habits i.e.,quantity, frequency and place of drinking have been elevated. Comprehensively, most people did not change their drinking amount but those who have changed their drinking amount, they have increased their consumption. People increased their drinking frequency, but binge drinking frequency has not greatly modified. Alcohol sales in bars, pubs, restaurants and nightclubs have been failed because of the lockdowns. But alcohol consumption increased at home, by the increase in sales in retail or onlinestores. Increased alcohol use is common after traumatic events, and excessive alcohol consumption can be a response to high stress levels.[41]

7. Conclusion

It is evident from the above discussion that coronavirus has almost affected all bodily functions of human ranging from mild to severe. COVID-19, has induced lockdown, thus there has changes in dietary patterns can potentially result in weight change as a result of lower physical activity, changes in food consumption, diet quality, stress and overeating.It is also concluded that women, parents of young children, middle-age people, people with higher income and individuals with depressive and anxiety symptoms reported the highest increase in alcohol consumption. Therefore, regular physical

exercise, balanced diet helps to maintain physical and mental well-being, which facilitates an
improvement in the quality of life of people. However, more research is required to support the eating habits, lifestyle related acivities effected by COVID-19. It recalls for the future research based on particular type of food to be consumed to boost the immune system.

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