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## Short Communications

# The world in lockdown: Unprecedented challenges and after-effects

Bhawna<sup>1</sup>, Rahul Sharma<sup>1,\*</sup>

<sup>1</sup>Dept. of Community Medicine, UCMS & GTB Hospital, Dilshad Garden, Delhi, India



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## ABSTRACT

COVID 19 pandemic has spread around all the corners of the globe. Many countries have adopted social distancing and imposed the nationwide lockdown to prevent human to human transmission. lockdown has proven effective in controlling outbreak but confinement at home is associated with several side effects. lockdown affects the physical, mental and social health of the people. Many chronic diseases and conditions are caused by physical inactivity. Due to mandatory home stay, unavoidably people have spent and are still spending long time on watching television, online gaming or social networking. Eradicating hunger and malnutrition are still a challenge to world. COVID 19 has increased food insecurity and further exposed the people to malnutrition. Prolonged lockdown or prolonged stay at home along with an unhealthy dietary habit of people and sedentary lifestyle will further magnify the risk of obesity. The pandemic and the related containment measures—namely quarantine, social distancing, and self-isolation—can have a detrimental impact on mental health. During this lockdown people are not only dealing with health crisis but also suffering from financial loss. Authorities at global and national level should create awareness among people and also find efficient remedies to prevent the undesirable after-effects of lockdown.

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## 1. Introduction

COVID 19 pandemic has spread around all the corners of the globe. Globally there have been more than 34 million confirmed cases of COVID 19 and the deaths due to the disease have crossed one million, at the beginning of October month of the year.<sup>1</sup> Many countries have adopted social distancing and imposed the nationwide lockdown to prevent human to human transmission. “More than a third of the planet’s population is under some form of restriction”.<sup>2</sup> Five hundred million people had been confined by March 18 which further rose to four billion in April. Around 58 percent of the world population was in confinement and the figures topped 4.5 billion, spanning 110 countries and territories.<sup>3</sup> Many countries are coming out of lockdown and some countries are again imposing lockdown because of surge up of cases.

Lockdown, a term conventionally used as a surrogate for “mass quarantine”, is typically based on “stay-at-home” or “shelter-in-place” ordinances given by a public (either national or regional) government or authority, for imposing social distancing and hence limiting or completely abolishing the movement of the population inside and outside a specific area. It is hence mostly used as for counteracting an ongoing outbreak, mandating residents to stay inside their homes, except for carrying out essential activities (health visits, tending to a vulnerable person, purchasing medicines, food, and beverages) or providing essential work (e.g. healthcare and social care sectors, police, and armed forces, fire-fighting, water and electricity supply, critical manufacturing). Other nonessential activities are hence stopped or carried out from home.<sup>4</sup> Lockdown has proven effective in controlling an outbreak in China. It was seen that there was a significant decrease in growth rate after the lockdown and has bought some time to the government authorities to strengthen the existing health care system<sup>5</sup> but

\* Corresponding author.

E-mail address: [studycorner@gmail.com](mailto:studycorner@gmail.com) (R. Sharma).

confinement at home is associated with several side effects.

Lockdown affects the physical, mental and social health of the people. Lippi et al, listed the undesirable effects of prolonged homestay such as physical inactivity, weight gain, behavioural addiction disorders, insufficient sunlight exposure and social isolation.<sup>4</sup> Because of mandatory homestay and fear of being infected, the countless number of people around the world became inactive or were compelled to live under the confinement. Around 35 chronic diseases and conditions are caused by physical inactivity.<sup>6</sup> Evidence shows that physical inactivity increases the risk of coronary heart and cerebrovascular diseases, type 2 diabetes mellitus, hypertension, several cancers (e.g. lung, prostate, breast, colon, others), osteoporosis/fractures and dementia, among others and also shorten life expectancy.<sup>7,8</sup> Furthermore, even a brief period of physical inactivity led to impaired insulin sensitivity and lipid metabolism, increased visceral fat and decreased fat-free mass and cardiovascular fitness in healthy adults.<sup>9</sup> Even exercise after prolonged inactivity provides no metabolic benefit as individual become resistant to it.<sup>10</sup>

Due to mandatory homestay, unavoidably people have spent and are still spending long time on watching television, online gaming or social networking. Many pieces of evidence showed that prolonged TV viewing is associated with greater risk of CVD events and all cause of mortality<sup>11</sup> and also increase the risk of obesity, insulin resistance, type 2 diabetes mellitus and hypertension.<sup>12</sup> Behavioural (i.e. internet, screen, or television) addiction disorders are also worsened during this period. The common side effects encompass psychological disturbances (e.g. sleep deprivation, self-harm), neurological complications (e.g. eye strain, headache), musculoskeletal disorders (i.e. low back pain, carpal tunnel syndrome) as well as increased risk of immobility related venous thrombosis.<sup>4</sup>

Eradicating hunger and malnutrition are still a challenge to world. According to Food and Agriculture Organisation of the United Nations, 9.2 percent of world's population were exposed to severe level of food insecurity in 2018. COVID 19 has increased food insecurity and further exposed the people to malnutrition. It's been said that the nutritional status of individuals represents an indicator against destabilization. The stressor such as inadequate nutrition can lead to long-lasting holistic effect.<sup>13</sup> As the number of days of lockdown increase, more and more people will suffer from poverty and malnutrition this will further expose the countless number of people to life-threatening hunger. Then this hunger pandemic will kill more people than the COVID 19 pandemic. Fear and anxiety can drastically affect the dietary pattern which many people are experiencing today around the world. Emotions like sadness and fear are associated with less desire to eat and with decreased enjoyment during eating.<sup>13</sup> Confinement to one's home has drastic effect on one's lifestyle. Prolonged

lockdown or prolonged stay at home along with an unhealthy dietary habit of people and sedentary lifestyle will further magnify the risk of obesity. Nutritional deficiency of energy, protein and specific nutrients are associated with depressed immune function and increase in the susceptibility to an infection. An adequate intake of iron, zinc, and vitamins A, E, B6, and B12 is predominantly vital for the maintenance of immune function.<sup>13</sup> Prolonged indoor stay leads to Vitamin D deficiency because of the insufficient sunlight exposure. Vitamin D not only is essential for bone health but also lowers the risk of obesity. Nutritional developing pathologies such as cardiovascular and autoimmune diseases, cancer, allergy and asthma and respiratory tract infection, mental disorders, metabolic syndrome and diabetes.<sup>4</sup> Many studies have been done and are still in focus on how vitamin D plays a crucial role in strengthening the immune system and prevent infection.

Lockdown has caused fear, anxiety, difficulty in concentrating, low motivation and a state of distraction among people. The pandemic and the related containment measures—namely quarantine, social distancing, and self-isolation—can have a detrimental impact on mental health. In particular, the increased loneliness and reduced social interactions are well-known risk factors for several mental disorders, including schizophrenia and major depression.<sup>14</sup> Social isolation amplifies the risk of neurocognitive, mental, cardiovascular and autoimmune problems and mental health problems among the elderly. Social isolation and loneliness place the elderly at a greater risk of anxiety and depression. It has already been established that social isolation is a serious public health concern.<sup>15</sup> In recent years, many studies have been done which show that the increased use of the internet accompanied with social isolation and loneliness drastically affects the mental health of adolescents and young adults.

During this lockdown people are not only dealing with health crisis but also suffering from financial loss. Pandemic is both a health and economic crisis. With increasing days of lockdown people are more concerned about their jobs, their business, health of their beloved ones and also the uncertainty of future. The fear of pandemic and lockdown both have heightened the feeling hopelessness and helplessness in the people. Despite all this, nationwide or region-specific lockdown is needed to stop the virus propagation. Strict restrictive measures are necessary. Authorities at global and national level should create awareness among people regarding the importance of physical activity and adopting a healthy diet and also find efficient remedies to prevent the undesirable after-effects of lockdown.

## 2. Source of Funding

None.

### 3. Conflict of Interest

None.

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### Author biography

**Bhawna**, P.G Resident

**Rahul Sharma**, Professor

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