



## Quarantine has its Impact on People Worldwide - A review

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### ABSTRACT

Coronavirus disease 2019(COVID-19), was first discovered in Wuhan, China which was then recognized by WHO as the novel coronavirus(nCoV). Since it is a highly communicable disease, it was declared as a pandemic, urging citizens to stay quarantined in their houses. Quarantine- isolation has led to many impacts in the people worldwide, being both advantageous and disadvantageous. It has encouraged the development of new skills, exercise to improve the immune system, de-stress, and have an altogether relaxed lifestyle. Some of the disadvantages may include the development of post-traumatic stress disorder, tension, depression, anger, confusion, financial loss, isolation, loneliness and these can prolong lifelong thereby threatening the life of the individual. Misinformation and loneliness can lead to individuals committing suicide or being affected by depression. Following the quarantine due to the nCoV, many countries have begun the implementation of emergency homeschooling due to school closure to prevent disease spread. The prolonged closure of schools and hence, the home isolation can stir a negative impact on the physical and mental health of children. Nonetheless, quarantine is of high importance during disease outbreaks, as it helps to curb the spread of disease and it is essential to overcome anxiety during these trying times by having a positive outlook.

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### INTRODUCTION

CoronaVirus disease (or COVID-19) is an infectious disease caused due to a newly evolved virus. A large

number of people infected with the virus experience respiratory illness and have a chance of recovering when administered with special treatment. The older age group, those with an underlying disorder such as diabetes and children, are most prone to the development of the disease. This virus spreads mainly through droplet transmission from saliva, cough or sneeze from an infected person affecting an unsuspecting individual. Since the outcome of the disease, there has been various researches underway for finding a vaccine or specific treatment to curb the disease. Since there is none available currently, it is of high importance to protect ourselves from the virus (Hassan *et al.*, 2020).

Quarantine is a period of isolation imposed to control and stop the spread of the disease. It

is done to separate a person or group that is 'believed' to be exposed to a disease that can be communicable to others, who have not yet been exposed to the disease; so as to curb the disease spread ([The Centers for Disease Control's Website, 2020](#)). Self-quarantine or voluntary quarantine is when a person voluntarily chooses to quarantine himself/herself although he or she is not informed to do so. Needless to say, the COVID-19 outbreak has introduced a wide range of terms to the general public like 'social distancing', 'isolation' and 'quarantine'. Social distancing is done to reduce the contact between groups of people; to avoid gatherings or maintain a 6-foot distance while doing so.

Recent times in quarantine have seen an increase in the online classes like game based learning ([MP and Nallaswamy, 2019](#)) and popplet learning ([Prashaanthi and Brundha, 2018](#))

that helps in better understanding of the subjects being taught. An increase in the number of newspaper articles and shows on the television regarding various diseases such as- nocturia ([D and P, 2016](#)), diabetes mellitus ([Preethikaa and Brundha, 2018](#)), hysterectomy ([Kalaiselvi and Brundha, 2016](#)), various dental developmental anomalies ([Harsha and Brundha, 2017](#)), breast cancer ([Balaji et al., 2016](#)), polycystic ovarian disease ([Shenoy and Brundha, 2016](#)), various equipment ([Ravichandran and Brundha, 2016](#)) and sty (e) ([Ferdioz and B, 2016](#)). These have helped in increasing awareness about them among the general public. Various research work has been underway for the development of new stem cells from pulp ([Timothy et al., 2019](#)), changes of red blood cells ([Brundha et al., 2019](#)), role of skin in Hansen's disease ([Brundha, 2015](#)), alteration of haemoglobin with age ([Shreya and Brundha, 2017](#)). Liquid paraffin- a mineral oil used in cosmetics and medicine, can be used for hand purification ([Hannah et al., 2019](#)).

Quarantine, however, is not so much of a 'pleasurable experience' to many as the separation from loved ones, boredom and disease state can create drastic impacts on individuals. Many articles and studies have found that quarantine causes 'negative psychological effects' such as PTSD, frustration, anger, boredom and mental confusion. This coupled with a wide group of people going into financial loss (due to loss of jobs) leading to inadequate supplies; panic due to disease spread among young and old results in long term effects ([Barbisch et al., 2015](#); [Sharma et al., 2020](#); [Brooks et al., 2020](#)). This article aims to review the many psychological, physiological impacts that quarantine had introduced to people worldwide.

## COVID-19 Pandemic

The first case of the coronavirus 2019 was first reported in Wuhan, China on 31st December, 2019. WHO officially confirmed that the respiratory illness that affected a significant number in Wuhan (after its first case) as the novel coronavirus(nCoV). The transmission of this new viral disease has taken a significant rise when compared to SARS(that occurred in 2003) ([Li et al., 2020](#)). This virus has been given a fatality rate of 1% which is more extreme than a seasonal influenza, as the new CoV affects healthy individuals and older age groups (targeting especially those having an underlying disease) ([Zu et al., 2020](#)). The COVID-19 transmission is at an exponential rise affecting more people than it is curing. It has already caused ten times more cases than SARS ([B, 2020](#)).

Although various measures are underway for the development of vaccines and medications to treat the coronavirus, it is of extreme importance to protecting ourselves from the trap of the virus by undergoing safety measures like- use of hand sanitisers, washing hands with soap for at least 20 seconds, wearing masks and maintenance of a safe '6 feet' distance from another individual. The symptoms of the new disease are evolving from time to time, from causing respiratory illness, to causing liver damage and blister appearance. Many of the signs and symptoms are being discovered, and it is our personal response by keeping ourselves and our loved ones protected to control the spread of the disease ([Haigh et al., 2020](#); [The Centers for Disease Control's Website, 2020](#)).

## Quarantine and self-isolation during covid-19 pandemic

Since the outbreak of coronavirus, the health authorities of various infected countries have called for self-quarantine for those affected and quarantine in general for the public to prevent the spread of the disease ([Haigh et al., 2020](#)). Individuals at 'risk of exposure' are quarantined for at least 14 days, not allowing themselves to come in contact with family, loved ones, friends, workplaces or any other public place ([Cava et al., 2005](#)).

This being said, isolation of the affected individual lasts until the person is free of all symptoms and tests negative. While in quarantine (or isolation), it is of high importance to not leave the house unless extremely required. Other activities to be implemented to protect ourselves is to frequent the handwashing habit or increase the use of sanitisers. Although it may be natural to get anxious, it is of high importance to 'stay calm' to combat the anxiety. Staying in quarantine helps in slowing the

spread of the disease, thereby flattening the curve and reducing the burden on the health care workers and staff (Cascella *et al.*, 2020).

### Positive impacts of quarantine

Apart from 'flattening the curve' or slowing the rate of infection, quarantine can also be beneficial in a number of ways to the general public. It can be used as a time for 'unwinding' our day and to engage ourselves in activities like drawing, knitting, cooking, improves creativity and fights off boredom. Since there is plenty of free time, it may be important to move around a little and spend some time exercising. Exercising, of any kind, improves the immune system and helps in the management of anxiety and stress (Chatterjee and Chauhan, 2020; Board on Global Health and Forum on Microbial Threats, 2004). Some time can be reserved for spending with oneself, by taking adequate amounts of rest. Engaging in meditation, listening to music can help in the relaxation of the body as well as the mind.

### Psychological impact of quarantine

A study (Board on Global Health and Forum on Microbial Threats, 2004) of hospital staff when quarantined due to SARS had the most predictive symptom- acute stress disorder. It was also reported that they had suffered from anxiety, exhaustion, irritability, insomnia, poor concentration, indecisiveness (Brooks *et al.*, 2020). Another study concluded that the PTSD in hospital employees (Post Traumatic Stress Disorder Syndrome) lasted even after three years (Wu *et al.*, 2009). A study (Sprang and Silman, 2013) comparing post-traumatic stress disorder symptoms between children and their parents concluded that the symptoms were four times higher in children than adults. Most of the studies searched for the review, concluded that those quarantined have a high prevalence of post-traumatic stress disorder, or other psychological disorder. Other reported symptoms from the study were emotional disturbances (Yoon *et al.*, 2016), depression (Hawryluck *et al.*, 2004), insomnia, low mood (Lee *et al.*, 2005), anger (Marjanovic *et al.*, 2007) and emotional irritability (Maunder, 2003).

One study compared the undergraduates who were quarantined to those who were not quarantined (after quarantine) and found no difference in their post-traumatic stress syndrome.

Reasons for increased stress during quarantine may be due to longer duration of quarantine as stated in studies leading to avoidance behaviour, anger and higher PTSD than whose quarantine period wasn't prolonged (Hawryluck *et al.*, 2004; Reynolds

*et al.*, 2008) fears of infection (Braunack-Mayer *et al.*, 2013; Desclaux *et al.*, 2017) and boredom (Jeong *et al.*, 2016; Blendon *et al.*, 2004).

Financial loss can also be considered as a prime reason for the development of stress during quarantine. This can cause problems to the individual's psychology even after the quarantine period is over (Jeong *et al.*, 2016). Studies reveal that individuals with lower household income and financial loss have higher depression and PTSD than others (Hawryluck *et al.*, 2004). To prevent depression due to financial loss, those with lower household incomes must require additional support and supplies provided to them whenever needed. This can help the needy.

### Impact of quarantine on older adults

The novel coronavirus (nCoV) is known for its target on older adults and elderly with pre-existing conditions (Hassan *et al.*, 2020; Shahid *et al.*, 2020). Although quarantine implores people to stay within the household, physical activity is of high importance- especially to the older adults; as inactiveness can lead to a sedentary lifestyle and increased health problems. Older individuals long 'social ties' and they are a necessary part in helping these adults in physical activity (Fingerman *et al.*, 2020). The reduced social ties during quarantine can decrease in the engagement of physical activities. Loneliness only results in physical and cognitive impairment (Zhong *et al.*, 2017). Some of the older adults are unable to take care of themselves- which can lead to worsening of health complications (Goethals *et al.*, 2020). Lack of attention can lead to deterioration of health (Marchiondo *et al.*, 2019).

Self isolation and loneliness only worsens the physical and mental health outcome in the long run (National Academies of Sciences, Engineering, and Medicine, 2020). This can heighten the risk of cardiovascular disease, obesity, hypertension and even death (National Institute on Aging, 2019).

The elderly may not be extremely aware and updated with 'true' information related to the infection which may lead to misinformation leading to anxiety and an increased fear of succumbing. Grief, due to either loss or distancing from families can also increase their risk in PTSD, and may also lead to a majority of individuals committing suicide (Lebret *et al.*, 2006). Stress impacts immunity, leading to an increase in infection. Many elderly individuals have a lack of attainment of proper basic care amenities- like food, medicines and are hence, struggling with this and a fear of the growing pandemic (R and B, 2020).

### Impact of quarantine on children

Following the quarantine due to the nCoV, many countries have begun the implementation of 'emergency homeschooling' due to school closure to prevent disease spread. Prolonged closure of schools and hence, the home isolation can stir a negative impact on the children's physical and mental health (Brazendale *et al.*, 2017; Brooks *et al.*, 2020). Being confined to homes and the lack of physical exercise, making them less active physically; longer screen time and irregular sleep patterns leading to weight gain and worsening health conditions (Wang *et al.*, 2020). Stressors for children and adolescents could be the fear of infection, decreased social contact, boredom, frustration and monotonous schedule (Brooks *et al.*, 2020). Rates of individual going into depression, taking up vaping and even committing suicide have gone up naturally.

### Mitigating consequences of quarantine

Increasing the period of quarantine, often causes poor psychological outcomes and can hence lead to a marked increase in stress in the long run. Restriction of the duration of home isolation can lead to minimising the frustration when compared to quarantine with longer duration (Rona *et al.*, 2007). It is also highly important to 'feed' the public with accurate information regarding the infection. This can reduce worrying in people and the spread of misinformation (Rubin *et al.*, 2016). Provision of necessities well in advance may also be useful for families. Relieving boredom and improving communication with family and friends reduces feelings of stress or panic during isolation. Engaging in activities such as exercising, cooking, painting (Brooks *et al.*, 2020) can divert one's mind and help in relaxing.

### CONCLUSIONS

Overall, this article concludes that the impact of quarantine varies and can even be long lasting. Although the negative impacts question the need for quarantine, it must be understood by individuals that quarantine is definitely required in order to curb the infection spread. Since quarantine is absolutely essential, adequate measures must be taken to make the quarantine more tolerable, by providing basic needs, giving appropriate information and most importantly reassuring the general public. Coronavirus is definitely on the rage and is pandemic, easily picking up targets. It is the prime responsibility of the individual to stay alert and safe so that once the pandemic is over, the world can go back to its normal schedule and people to their usual life.

### Conflict of interest

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