

# A Snapshot on popular beliefs and misconceptions associated with COVID-19 pandemic

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## Abstract

Misinformation and misconceptions about certain diseases and infections have always triumphed in the world creating a sense of horror among people. Without proper guidance and counseling, ties with these myths cause panic and agitation giving an incentive to believe in them thoughtlessly. SARS-COV2, globally known as Coronavirus disease 19 emerged as a dreadful viral condition affecting millions of people all across the globe. With the rise in the frequency of cases of COVID-19, myths started to escalate resulting in a reduction in actually needed practices and precautionary measures. With passage of time various facts and invalid information has emerged disrupting the course of life. This paper highlights the role of misconceptions that spread like wildfire during COVID-19 pandemic.

*A Snapshot on popular beliefs and misconceptions associated with COVID-19 pandemic*

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*Abstract:*

Misinformation and misconceptions about certain diseases and infections have always triumphed in the world creating a sense of horror among people. Without proper guidance and counseling, ties with these myths cause panic and agitation giving an incentive to believe in them thoughtlessly. SARS-COV2, globally known as Coronavirus disease 19 emerged as a dreadful viral condition affecting millions of people all across the globe. With the rise in the frequency of cases of COVID-19, myths started to escalate resulting in a reduction in actually needed practices and precautionary measures. With passage of time various facts and invalid information has emerged disrupting the course of life. This paper highlights the role of misconceptions that spread like wildfire during COVID-19 pandemic.

*Introduction:*

A novel coronavirus disease known as COVID-19 was declared as pandemic by the World Health Organization (WHO) on January 20, 2020 (“Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-NCoV),” 2020) This outbreak was first reported in Wuhan, the city of China and captured the whole world under its violent spread; it was the worst hit after a Spanish flu in 1998. Over the decades, the world never saw such a horrible economic, social, and ecological downfall. The mortality rates were tremendously high; many were dead while the ones left were severely traumatized (Sohrabi et al., 2020).

As it spread violently, its havoc and negativity were ingrained in people’s minds, initially it was not even taken seriously but after increasing no. of cases and its contagious nature many people came up with varied range of perspectives, opinions regarding how to tackle the disease. From inception to its outbreak, unverified information, misbeliefs have taken over the world. Various families and homeopathic doctors came up with homemade traditional remedies such as use of lemon, hot beverages, hot climate prevents disease and many more preventions (Olapegba et al., 2020).

#### *Various myths and believes Circulating about the COVID-19 Pandemic:*

Since the pandemic many researchers are working on to give details about the etiology and epidemiology of the coronavirus but along with this outset many unsubstantiated information and beliefs were circulated in the society about how it was introduced and how it can be prevented further. These misconceptions were mainly due to lack of knowledge and information about the features of the virus. This misinterpretation has been trending in society and leads to negligence in terms of health-related practices.

The initial misconception that spread like wildfire was that COVID-19 is prevented by hot temperatures above 25 degree, in-fact it was agreed upon by Donald Trump as well, when he stated that this disease may go away upon exposure to hot climate (Matthews Chris, 2020). The preceding research denies the given speculation stating that temperature and humidity would be the least protective factor against COVID-19. Scientists came up with factual evidence against the myth stating that the effect of weather in COVID-19 cases is quite minimal and mobility seems to have more impact on disease spread instead of weather for sure (Jamshidi et al., 2020). In addition to that, a WHO study also found out that weather is one of the least affecting parameters, as a fact sun exposure or living in higher temperatures doesn’t guarantee that you won’t get infected by COVID-19 (“Coronavirus Disease (COVID-19) Advice for the Public: Mythbusters,” 2020).

In the early 2020, it was believed that taking hydroxychloroquine (anti-malarial drug) can safeguard you from COVID-19 infection and this myth got support from an article that found out that, chloroquine has been sporadically used in treating SARS-CoV2 infection by controlling the cytokine storm that occurs in body as a protective mechanism after being exposed to any pathogen (Yao et al., 2020). Currently, there is no evidence suggesting this. In a cohort study conducted in the UK by researchers to see whether hydroxychloroquine use before SARS-CoV-2 infection could prevent mortality from COVID-19. They included 30,569 patients with systemic lupus erythematosus and rheumatoid arthritis who were already taking hydroxychloroquine for 6 months before, but they had no sort of prophylaxis against COVID-19 and 164 068 patients with these rheumatic diseases who did not use hydroxychloroquine. They highlighted that there was no significant association of hydroxychloroquine with mortality rates in COVID-19 patients (0.23% among hydroxychloroquine users and 0.22% among non-users) (Jorge, 2021).

It came out as a common belief among mass population derived from social media and mass communication platforms that under-developing or low economic countries such as Africa and India will hypothetically to be affected less than the high income, developed countries such as USA, UK France, and Italy etc from the COVID-19. As per statistics of 20<sup>th</sup> April 2020; 92,472 with 10,023 no. Of deaths in Italy, 1,23,776 cases with around 2229 deaths in the USA versus 987 cases out of which only 25 deaths occurred in India and 29 deaths out of 454 cases in Algeria have surely strengthened this belief (Geldsetzer, 2020).

The above misconception has been proved substantially wrong as various countries might be at different stages during the pandemic, therefore, CFR(Case Fatality Rate) is a more significant and reliable index to

judge the prevalence of disease among countries than the no. of total cases per million population across variety of countries. It was found that CFR is not affected by income levels of respective countries. So, the economically poor countries have better immunity is a mere misconception (Geldsetzer, 2020).

A false belief reported in a Nigerian study stated that consumption of gins, garlic, herbal mixtures, and African foods/ soups as well as gargles and drinking hot liquids as preventive measures against COVID 19 pandemic (Yao et al., 2020). However, guzzling down hot liquids is unlikely to raise the temperature of the body in the respiratory tract to kill any virus and even if it does, the temperature of hot liquid needs to be around 132-degree Fahrenheit (Gray Richard, 2020).

A study that included participants from the USA and UK believed that children were at an especially high risk of death when infected with SARS-COV-2 and included that it was necessary to stop eating Chinese restaurant food to stay healthy (Geldsetzer, 2020). WHO and other major stakeholders from different countries in the world especially in the African region and Nigeria have not ceased dismissing some of these misconceptions about COVID pandemic among people as false and misleading.

Few of the reports mentioned that many people believed that drinking alcohol protects against being infected with the COVID-19 virus. However, it was published by a WHO report that drinking alcohol doesn't protect you against COVID-19 and can have various consequences (*Alcohol and COVID-19: What You Need to Know*, 2020).

Mosquitoes might be potential carriers or vectors of SARS-CoV-2, more so with the impending summer season approaching the mosquito breeding rate will be high. Tettnang Virus – a coronavirus has successfully been isolated from *Aedes cantans* mosquito in Czechoslovakia. Additionally, efficient replication of human enteric virus has been observed in *Aedes albopictus* C6/36 cell line. It is useful as various gut associated problems were observed in COVID-19 patients. To detect whether field mosquitoes contain SARS-COV-2, a total of 1165 *Culex* and *Anopheles* mosquitoes were collected from Wuhan during Pml/ may in 2020.

qRT -PCR detection assay for SARS COV-2 determined that all tested pools of mosquitoes were negative for the virus (Xia et al., 2020).

There have been a lot of rumors circulating around the world about COVID-19 vaccines. The myths that we hear a lot about how it can cause women infertility, substitute genetic material and various impacts on human health and behavior. Some rare cases of bell palsy and other neurologic disease along with fatal blood disorder have been reported after getting the vaccine. However, there is no proof that would suggest any relation between vaccines and above such disease (Higgins-Dunn Noah, 2020)(Grady Denise & Mazzei Patricia, 2021) Unfortunately, these misconceptions impede the acceptance of vaccines and its desired effects.

### **Impacts:**

As the COVID-19 cases increased when the pandemic started, the myths related to it grew uncontrollably. It included the misconceptions about its spread, contraindications, and presumptions. Many people were affected by this ambiguous communication. According to the World Health Organization (WHO), many countries are involved not only in combating coronavirus but also eradicating the misconception and false information related to it ("UN Tackles 'Infodemic' of Misinformation and Cybercrime in COVID-19 Crisis," 2020). Due to these misconceptions, doctors' jobs became complicated and they faced problems while treating their patients' problems. Because of their lack of awareness and experience in the face of the COVID-19 pandemic, many people hold some popular misconceptions. This was a major factor in the COVID-19 pandemic's rising number of infected cases and fatalities.

In the northwest of Ethiopia, the Muslim participants were less likely to have the misconceptions regarding COVID-19 than Orthodox Christians as they minimized physical contact by performing their religious practice at home while Christian went for spiritual services to church ignoring the social distancing recommendations. They also believed that this pandemic could only end by the help of God. Consequently, people were ignoring the instructions of the health system and had firm belief in the religious norms and principles (Mekonnen et al., 2020). Many people fail to understand the importance of handwashing and wearing masks

because of their misconceptions about COVID-19 pandemic. Eventually, this hinders the significance of prescribed measures and treatment for SARS-CoV-2.

#### *Conclusion:*

Countless rumors and theories have circulated since the first case of COVID-19 was reported, and they intend to stay in the loop for as long as expected. Several organizations have taken steps to educate the public, but it requires further efforts to get constructive results. Many rumors also circulated as people started to get vaccinated for SARS-COV-2 around the world, people became hesitant and scared about taking the vaccine considering its safety and effectiveness.

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#### *References:*

- Alcohol and COVID-19: what you need to know* . (2020). Retrieved from <http://www.euro.who.int/>
- Coronavirus disease (COVID-19) advice for the public: Mythbusters. (2020). *World Health Organization* . Retrieved from <https://www.who.int/>
- Geldsetzer, P. (2020). Use of Rapid Online Surveys to Assess People's Perceptions During Infectious Disease Outbreaks: A Cross-sectional Survey on COVID-19. *Journal of Medical Internet Research* ,22 (4).<https://doi.org/10.2196/18790>
- Grady, D., & Mazzei, P. (2021). Doctor's Death After Getting the Covid-19 Vaccine Is Investigated. *The New York Times* . Retrieved from <https://www.nytimes.com/>
- Gray, R. (2020). Coronavirus\_ Will hot drinks protect you from Covid-19. *BBC Future* . Retrieved from <https://www.bbc.com/future/>
- Higgins-Dunn Noah. (2020). FDA staff recommends watching for Bell's palsy in Moderna and Pfizer vaccine recipients. *CNBC* . Retrieved from <https://www.cnn.com/>
- Jamshidi, S., Baniasad, M., & Niyogi, D. (2020). Global to USA County Scale Analysis of Weather, Urban Density, Mobility, Homestay, and Mask Use on COVID-19. *International Journal of Environmental Research and Public Health* , 17 (21).<https://doi.org/10.3390/ijerph17217847>
- Jorge, A. (2021). Hydroxychloroquine in the prevention of COVID-19 mortality. *The Lancet Rheumatology* , 3 (1).[https://doi.org/10.1016/S2665-9913\(20\)30390-8](https://doi.org/10.1016/S2665-9913(20)30390-8)
- Matthews Chris. (2020). Trump says coronavirus could be thwarted by summer heat, citing DHS study. *Market Watch* . Retrieved from <https://www.marketwatch.com/>
- Mekonnen, H. S., Azagew, A. W., Wubneh, C. A., Belay, G. M., Assimamaw, N. T., Agegnehu, C. D., Azale, T., Azene, Z. N., Merid, M. W., Muluneh, A. G., Geberu, D. M., Kassa, G. M., Yenit, M. K., Tilahun, S. Y., Gelaye, K. A., Tamiru, A. T., Rade, B. K., Taye, E. B., Taddese, A. A., ... Alemayehu, M. (2020). Community's misconception about COVID-19 and its associated factors among Gondar town residents, Northwest Ethiopia. *Tropical Medicine and Health* , 48 (1).<https://doi.org/10.1186/s41182-020-00279-8>
- Olapegba, P. O., Ayandele, O., Kolawole, S. O., Oguntayo, R., Gandi, J. C., Dangiwa, A. L., Ottu, I. F. A., & Iorfa, S. K. (2020). A Preliminary Assessment of Novel Coronavirus (COVID-19) Knowledge and Perceptions in Nigeria. In *medRxiv* .<https://doi.org/10.1101/2020.04.11.20061408>
- Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., Iosifidis, C., & Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). In *International Journal of Surgery* , 76, 71-76 .<https://doi.org/10.1016/j.ijsu.2020.02.034>

Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). (2020). *World Health Organization*. <https://www.who.int/news/>

UN tackles ‘infodemic’ of misinformation and cybercrime in COVID-19 crisis. (2020). *United Nations*. <https://www.un.org/en/>

Xia, H., Atoni, E., Zhao, L., Ren, N., Huang, D., Pei, R., Chen, Z., Xiong, J., Nyaruaba, R., Xiao, S., Zhang, B., & Yuan, Z. (2020). SARS-CoV-2 Does Not Replicate in Aedes Mosquito Cells nor Present in Field-Caught Mosquitoes from Wuhan. In *Virologica Sinica*, 35(3), 355-358. <https://doi.org/10.1007/s12250-020-00251-0>

Yao, X., Ye, F., Zhang, M., Cui, C., Huang, B., Niu, P., Liu, X., Zhao, L., Dong, E., Song, C., Zhan, S., Lu, R., Li, H., Tan, W., & Liu, D. (2020). In Vitro Antiviral Activity and Projection of Optimized Dosing Design of Hydroxychloroquine for the Treatment of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). *Clinical Infectious Diseases*, 71 (15). <https://doi.org/10.1093/cid/ciaa237>