

July - December 2021

Volume 30

Issue 2

PRINT ISSN: 2277-1867

ONLINE ISSN: 2277-8853



# JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

Official Publication of Medicolegal Association of Maharashtra

**Editor-in-chief**

Dr Ravindra Deokar

**Associate Editors**

Dr Sadanand Bhise

Dr Sachin Patil

**MULTISPECIALITY, MULTIDISCIPLINARY, NATIONAL  
PEER REVIEWED, OPEN ACCESS, MLAM (SOCIETY) JOURNAL  
Indexed with Scopus (Elsevier) & Index Copernicus (Poland)**

**Editorial Office Address**

Department of Forensic Medicine & Toxicology, Third Floor, Library Building, Seth G S Medical College & KEM Hospital, Parel, Mumbai, Maharashtra, India. Pin-400 012. Email id: [mlameditor@gmail.com](mailto:mlameditor@gmail.com) Phone: 022-24107620 Mobile No. +91-9423016325.



# JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

(Official Publication of Medicolegal Association of Maharashtra)  
Email.id: [mlameditor@gmail.com](mailto:mlameditor@gmail.com)

PRINT ISSN:  
2277-1867

ONLINE ISSN:  
2277-8853

## Original Review Article

### Medico-legal and Ethical Issues in Context to COVID-19 Pandemic

Sachin S Patil<sup>a\*</sup>, Ravindra B Deokar<sup>b</sup>, Rajesh C Dere<sup>c</sup>, Hemant G Kukde<sup>d</sup>, Narendra B Kumar<sup>e</sup>

<sup>a</sup>Associate Professor, <sup>c</sup>Professor & Head, <sup>d</sup>Professor (Additional), <sup>e</sup>Assistant Professor; Department of Forensic Medicine & Toxicology, LTMMC & LTMG Hospital, Sion, Mumbai, Maharashtra, India-400022.

<sup>b</sup>Professor (Additional), Department of Forensic Medicine, Seth G S Medical College & KEM Hospital, Mumbai, Maharashtra, India-400012.

#### Article Info

**Received on:** 14.07.2021  
**Accepted on:** 30.08.2021

#### Key words

Epidemic Diseases Act,  
Emergency Disaster  
Management,  
Shortage of Resources,  
Psychological Impact,  
Healthcare impact.

#### Abstract

In addition to the dearth of resources and technology, there was absence of awareness about the pandemic in the general public. Apart from this, there has been a severe psychological impact on the masses due to the mortality and morbidity caused by COVID 19 disease. COVID 19 has displayed itself as a challenge to the human race in the context of resources, planning, manpower, healthcare infrastructure, emergency disaster management responses and policy making. It is extremely significant that various policies in COVID-19 pandemic are controlled by ethical and moral principles. Common danger cannot be tackled without collective effort. As there is wide variation in health infrastructure and healthcare systems in various countries, ethical insight and legal view do differ among the countries over the globe. As far as India is concerned, with the average healthcare system, failed to tackle the COVID 19 pandemic. But even the developed countries with the best healthcare system struggled to overcome the challenges posed by this COVID 19 pandemic leading to multiple ethical and medical legal issues.

#### 1. Introduction

The new corona virus was first reported in the Wuhan city in the Hubei province of China in the wholesale fish market on 26th December 2019. Subsequently, there was reporting of numerous cases of pneumonia of unknown origin. China shared with the world the genetic sequence of this new coronavirus and termed it SARS-COV-2, and the disease was labelled as COVID 19 (Corona virus disease 2019).<sup>1</sup> In contrast to the epidemics of previous coronavirus like SARS and MERS which were restricted to particular parts of the world, SARS COV-2 managed to spread throughout the world and was declared a pandemic by WHO. The COVID 19 pandemic has impacted significantly on all the

countries in view of loss of life, physical impairment, financial loss and psychological distress.<sup>2</sup>

Till date there are about 17.2 crore people infected with COVID 19 out of which 37.2 lakhs of people have lost their lives. As far as India is concerned, about 2.86 crore people are infected with COVID 19 disease and about 3.44 lakhs of people have died due to this fatal disease.<sup>3</sup>

This pandemic has affected people of almost all ages, but mortality rates were higher in older individuals, especially in those associated with comorbidities. This pandemic has severely exposed the flaws in the healthcare system of almost all the countries, including the developed countries having a

**How to cite this article:** Patil SS, Deokar RB, Dere RC, Kukde HG, Kumar NB. Medico-legal and Ethical Issues in Context to COVID-19 Pandemic. J For Med Sci Law 2021;30(2):57-62.

**\*Corresponding author:** Dr Sachin S Patil, Associate Professor, Department of Forensic Medicine & Toxicology, Lokmanya Tilak Municipal Medical College & LTMGH, Sion, Mumbai, Maharashtra, India. Pin-400022. Email: [sachinpatilmdfm@gmail.com](mailto:sachinpatilmdfm@gmail.com) (M): +91- 9136667077.

very good healthcare system. The healthcare system experienced a massive effect as a result of a sudden surge in patients of COVID-19 requiring treatment. In the earlier phase, there was meagre knowledge about its pathophysiology putting extra burden on the healthcare system.<sup>4</sup>

The pandemic has resulted in severe economic losses as well as communal disturbance. Millions of people have been pushed into poverty, particularly the industries grossly effected by the COVID pandemic and its preventive measures. About half of the working force globally has lost its livelihood, most of them have a dearth of financial stability and provision of health care of good quality<sup>5</sup>

In addition to the dearth of resources and technology, there was absence of awareness about the pandemic in the general public. Apart from this, there has been a severe psychological impact on the masses due to the mortality and morbidity caused by COVID 19 disease. COVID 19 has displayed itself as a challenge to the human race in the context of resources, planning, manpower, healthcare infrastructure, emergency disaster management responses and policy making. It is extremely significant that various policies in COVID 19 pandemic are controlled by taking into consideration of ethical and moral principles. The common danger needs to be tackled without collective effort.<sup>4</sup>

## **2. Medicolegal issues in context to COVID 19 pandemic.**

Lockdown and restricting the transport of people related to emergency service were the measures taken by the government to contain the spread of COVID 19 disease. But many people claim that every individual has freedom to move and work anywhere, which was imparted to them by the constitution and deprived them of their basic rights during this pandemic. There were protests against this in various developed countries and lockdown and other restrictions.<sup>6</sup> As far as India is concerned, this leads to violation of the fundamental right enshrined in article 21 of the constitution of India which indicates that no person should be deprived of the right of life or liberty.<sup>7</sup> But governments of various countries defended this by stating that it is of utmost importance to safeguard the health of society in the larger interest.

The government has responsibility of making the public aware about the hazards and precautionary measures as well as their responsibility in restricting the spread of the disease. Violation of the rules

amounts to a crime of disobedience of the provisions of the government.<sup>6</sup>

In India, the Ministry of Health, Government of India gave an appeal to state governments to apply provisions of section 2 of Epidemic diseases act 1897. This act governs healthcare emergencies in India was enacted during the British era to contain the spread of bubonic plague in Bombay state. This act empowers the government machinery to make regulations to restrict the spread of epidemic disease. Violation of these regulations amounts to a punishable offence and also gives immunity to officers and people involved in imposing the restrictions. Many state governments, including Maharashtra, have imposed lockdown and other regulations for preventing the spread of COVID 19. It also deprives the public of the right of privacy in the legitimate aim of safeguarding people. But in the Puttaswamy judgement, the court has put some limitations on the state machinery for imposing the restrictions as follows-

- a. The action should be endorsed by law.
- b. The planned action should be for the purpose of an authentic goal.
- c. The degree of the intrusion by state machinery should be comparable to the requirement of such intrusion.
- d. There should be technical assurances to prevent exploitation of the people against such intrusion.<sup>8</sup>

People who tested positive and refrain from getting quarantined or even if quarantined escaped from the quarantine center can lead to the spread of fatal infectious diseases, amount to criminal acts and are liable for punishment. Section 269<sup>9</sup> and 270 IPC<sup>10</sup> pertaining to negligent and malignant acts leading to spread of infectious disease is liable for punishment up to 6 months and 2 years and/or a fine respectively. Noncompliance with the rule of quarantine imposed by the state is a punishable act for 6 months imprisonment or fine as per section 271 IPC.<sup>11</sup> Section 188 IPC<sup>12</sup> mentions disobedience to order duly promulgated by a public servant. Section 133 CrPC<sup>13</sup> describes a conditional order to remove the nuisance.

There were two instances where two people were booked under section 270 when then returned from Dubai and Singapore each and not informing the authorities and subsequently testing positive for COVID 19. Similarly, famous Bollywood singer Kanika Kapoor was booked under sections 269, 270 and 188 IPC when she attended three gatherings in Lucknow including

one party having political leaders and tested positive for COVID 19 afterwards.<sup>14</sup>

This is also in concordance with Article 47<sup>15</sup> of the constitution of India which describes the responsibility of the state to provide nutrition, enhance the standard of living along with the quality of healthcare. The measures taken by the state are in concordance with this article. Since COVID 19 is a highly infectious disease with high mortality, disseminating it is considered terrorism in some countries like Italy. One of the factors responsible for the spread of the disease was that it was considered a hoax or a fake resulting in making people complacent towards preventive measures for COVID 19.<sup>6</sup>

Since the commencement of the pandemic, there have been regular advancements being done in the diagnostics and treatment protocol which is due to regular updating the knowledge in relation to pathophysiology and other information of corona virus. This has resulted in regular change in protocol for diagnosis and treatment of COVID 19 by various health organizations including WHO causing less trust among the general public for healthcare management. This could be one of the reasons for enhancement in the incidences of violence against doctors and surge in the number of cases in criminal and civil courts. The other factor responsible for dissent among the general public is the inability to meet their relatives in COVID wards and unable to get regular updates about the development of patients. This causes them to be enraged when they receive the news of the death of their patient when the patient was under treatment. Another factor for poor quality of healthcare is the huge number of patients seeking healthcare simultaneously causing low availability of life-saving methods such as ventilators or oxygen cylinders further increasing the annoyance among the deceased relatives.<sup>6</sup>

This crisis situation has forced the governments to extreme steps of lockdown and extemporary solutions to this problem like developing new hospitals within a short time frame (Jumbo hospitals), contractual recruitment of new doctors and paramedical staff with hefty salaries, involvements of residents of all departments for COVID management, interns and even students of the final year MBBS. But this can give rise to the medico legal issues in the case of death of COVID patients. If the relatives file the charge of negligence against the treating doctors, it will create a dilemma against investigative and judicial authorities to decide

the medical negligence in view of the COVID-19 pandemic.<sup>16</sup>

In recent times, many countries have either enacted or thought of awarding immunity from civil or criminal negligence suits to the healthcare workers involved in the treatment of COVID 19 patients.<sup>17,18</sup> But this has given rise to a number of issues and challenges for these provisions made.

One of the issues is cardio pulmonary resuscitation in COVID 19 patients. Performing CPR in COVID patients in ICU is less likely to survive. But there is a very possibility of medical staff getting exposed to COVID infection, especially in case of shortage of PPE kits. Performing futile CPR can endanger their life, but the denial of CPR can make relatives of the deceased angry and can file litigations against the doctor for not performing their duty. During COVID-19 pandemic, there was a shortage of resources like ventilators, oxygen cylinders, beds, PPE kits and manpower like doctors, nurses, ward attendants etc. Therefore, many hospitals and healthcare organizations demand for standard protocol of treatment in case of emergency, especially in cases of shortage of resources and also conceding legal immunity to doctors in case of adverse event.<sup>19</sup>

The next issue will be about the way in which these legal immunity laws to doctors are made functional and its impact on present and future waves of the COVID-19 pandemic. In view of the shortage of resources in COVID 19, the priority of treatment of the patients by the doctors can raise the issue of discrimination among patients, thereby enhancing the incidence of litigations against the doctors. Another issue is about the courts to comprehend the legal immunity status of doctors and terms, including shortage of resources to decide the fate of litigation against the doctor. No such laws implemented or proposed to be implemented in India.<sup>19,20</sup>

In this pandemic, litigation claims settlement can have an impact not only in pecuniary terms but will also put the burden on administration.<sup>21</sup> There was clear evidence that the majority of deaths occurred in the first wave of the COVID 19 pandemic among the elderly, especially with those having comorbidities.<sup>22</sup> This was confirmed later from the various studies all over the globe.<sup>23</sup> Quality of care for the elderly people in old age homes was always underrated in many countries over the globe. Due to this pandemic, the level of care and resources dedicated for the elderly were insufficient. Efforts taken to contain the spread of

the pandemic were inadequate.<sup>24, 25</sup> There is considered to be ambiguity about the civil and criminal responsibilities of a few old age homes where the quality of care is not at par with national standards.<sup>26</sup>

The doctors getting infected while performing the duty of treating the patients of COVID 19 is considered to be caused by coming in contact with patients and to be labelled as an occupational disease as well as the compensation to be given for subsequent disability or death. Also, there was a sudden spike in the incidence of violence within the houses during lockdown which can be attributed to increased frustration or monetary constraint.

Other points of medicolegal significance are involuntary confinement of all COVID 19 positive patients was a very cumbersome procedure and also leads to mental stress to the people confined. Handling and transport of COVID 19 death bodies was under police surveillance to testify that relatives of the patients follow proper protocols set by government authorities to contain spread of the disease.<sup>4</sup> Performing the clinical autopsy is of great significance in comprehending the pathophysiology of the disease causing the death of the person.<sup>27, 28</sup> Avoiding the autopsy in the cases of COVID 19 can prevent the understanding of the precise mechanisms of the disease. Hence there was need for conducting post-mortem examination in cases of deaths due to COVID 19.<sup>29</sup>

Investigation into the causes of mortality is one of the foundations of epidemiology and acts as an instrument in arriving at the conclusions and taking steps in controlling the COVID 19 epidemic. The data provided in the death certificate can be of utmost importance and as per the recommendations of WHO.<sup>30</sup> Many countries including Italy, India etc also issued the circular to curtail the autopsies of COVID 19 patients or suspected COVID 19 people including those in unnatural deaths. Not performing the autopsies on COVID 19 patients was a debatable issue. Since autopsies performed constitute a cornerstone for understanding the pathophysiology of the disease. Avoiding autopsies on COVID 19 patients leads to delay in accumulating information about COVID 19, which was essential in developing the protocol for prevention, diagnosis and treatment. The aim behind refraining from conducting autopsies of COVID 19 patients was to prevent the spread of the infection among the doctors, medical staff and police people handling the dead bodies, but that will ultimately result

in loss of valued time required for saving the lives of people.<sup>4</sup>

### **3. Ethical issues in context to COVID 19 pandemic**

#### **3.1 Universal ethical issues**

Common ethical issues in this COVID 19 pandemic comprises of extensive involvement of people in containment of COVID 19 pandemic, investigation of the disease and intrusions of newer diagnostic and treatment modalities. Expecting the involvement of people by the government is confronting with basic rights of every individual to act freely without any fear, pressure or compulsion. Similarly, the introduction of novel diagnostic techniques and treatment modalities without sufficient data about its utility in treatment of the disease is like considering the people experimental guinea pigs. Same is applicable for vaccines like Covaxin which was introduced for use without sufficient data.

In the similar manner, imposing ethical compulsion on the doctors and other paramedical staff to treat COVID 19 patients is a basic duty to provide healthcare to the population.<sup>31</sup> In this pandemic, it is a very big challenge in front of administration to maintain equilibrium between ethical principles and liberty of the public.<sup>32</sup>

#### **3.2 Ethics of preparedness**

Due to the shortage of resources, the apportionment of resources is considered a big ethical dilemma. But proper measures have to be taken to show it as morally correct and rational. First preference should be given to healthcare workers and other frontline workers, as they are very essential for providing healthcare and other essential services. Similarly, priority should be given to the congested areas more likely to spread the disease like slums. In addition, preventive measures such as vaccination should be made available to people of older age and those with co morbidities.<sup>33</sup>

Similarly, disaster management or preparedness for epidemics is deficient in many developing countries. This makes people of those countries more vulnerable to epidemics in addition to factors like malnutrition and low healthcare facilities.<sup>34</sup> Since India is a signatory to the International Health Regulations, 2005 (IHR), it has to launch a suitable health response to prevent the dissemination of infectious diseases. The government should prepare the Integrated Disease Surveillance Program (IDSP) for initiating the public health response.<sup>8</sup>



Having access to the information is one of the basic rights of every individual, which appears to be of great significance in these crisis situations. Lack of information to the public about health response measures and preventive steps like Lockdown measures makes them highly susceptible to this crisis situation.<sup>35</sup>

Ethically, it is the moral responsibility of the government to provide reimbursement to the general public for the loss of daily wages or other expenses due to preventive measures like quarantine, isolation, lockdown etc initiated by the government for containing the spread of the epidemic. Though many state governments had made provision for making availability of food to people as well as provided financial support to people below the poverty line, but it has not reached every individual regularly.<sup>4</sup>

#### 4. Conclusion

As there is wide variation in health infrastructure and healthcare systems in various countries, ethical insight and legal view do differ among the countries over the globe. As far as India is concerned with the average healthcare system, there was great difficulty in tackling the COVID 19 pandemic. But even the developed countries with the best healthcare system struggled to overcome the challenges posed by this COVID 19 pandemic leading to multiple ethical and medicolegal issues.

There were multiple ethical issues arising among the healthcare professionals due to the limited supply of resources. As a result, the health services have been faced with ethical dilemmas such as deciding who to treat considering the shortage of resources and incompetence in providing treatment to every individual. This is against the principles of ethics like justice, non-maleficence, autonomy and the right of dignity irrespective of the helpless situation. Proper elucidation of the current situation is extremely essential to defend the treating doctors and paramedical staff who are pushed to serve the society in this vulnerable condition. This pandemic has not only brought significant changes in the lives of people but also for the medical fraternity and exposed the flaws of the healthcare system.

**Funding:** None.

**Conflict of interests:** None declared.

#### References

1. World Health Organization. Novel Coronavirus (2019-nCoV) Situation Report – 1. 21<sup>st</sup> January 2020. [Cited 05 June 2021]. Available from: [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf?sfvrsn=20a99c10_4)
2. El Zowalaty ME, Järhult JD. From SARS to COVID-19: a previously unknown SARS-CoV-2 virus of pandemic potential infecting humans—call for a one health approach. *One Health*. 2020; 1:100124
3. World Health Organization. WHO Coronavirus (COVID-19) Dashboard. June 2021 [cited 05 June 2021]. Available from: [https://www.google.com/search?q=corona+statistics+in+world&rlz=1C1CHBF\\_enIN893IN893&oq=&aqs=chrome.69i59i450l3.2356986j0j15&sourceid=chrome&je=UTF-8](https://www.google.com/search?q=corona+statistics+in+world&rlz=1C1CHBF_enIN893IN893&oq=&aqs=chrome.69i59i450l3.2356986j0j15&sourceid=chrome&je=UTF-8)
4. Barbería E., Pujol-Robinat A., Arimany-Manso J. Medico-legal issues of COVID-19 pandemic. *Spanish Journal of Legal Medicine*. 2020; 46(3): 89-92.
5. Chriscaden K. World Health Organization. Impact of COVID-19 on people's livelihoods, their health and our food systems. 13 October 2020 [cited 05 June 2021]. Available from: <https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people's-livelihoods-their-health-and-our-food-systems>
6. Barabara B. et al. Legal scenario in coronavirus time: Medicolegal implications in the aspects of governance. *Legal Medicine* 2021; 101832 (48):1-4.
7. Constitution of India, 1950. Article 21 protection of life and personal liberty. [Cited 05 June 2021]. Available from: [https://www.constitutionofindia.net/constitution\\_of\\_india/fundamental\\_rights/articles/Article%2021](https://www.constitutionofindia.net/constitution_of_india/fundamental_rights/articles/Article%2021)
8. Legal Aspects of Pandemic in India (Covid-19). *Legal Services India.com*. June 10 2020 (cited 07 June 2021). Available from: <http://www.legalservicesindia.com/law/article/1494/24/Legal-Aspects-Of-Pandemic-In-India-Covid-19>
9. Central government act. Section 269 IPC. [Cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/734195/>
10. Central government act. Section 270 IPC. [Cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/1164731/#:~:text=%E2%80%94%94Whoever%20malignantly%20does%20any%20act,with%20fine%2C%20or%20with%20both>
11. Central government act. Section 2 IPC. [Cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/1726256/>
12. Central government act. Section 188 IPC. [Cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/1432790/#:~:text=%E2%80%94%94Whoever%2C%20knowing%20that%2C%20by,disobedience%20causes%20or%20tends%20to>

13. Central government act. Section 133 CrPC. [cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/983382/>
14. The Indian Express. Explained: Sections 269 & 270 IPC, invoked against those accused of spreading disease? 07<sup>th</sup> June 2021 [cited 07 June 2021]. Available from: <https://indianexpress.com/article/explained/explained-what-are-sections-269-270-ipc-invoked-against-those-accused-of-spreading-disease-6336810/>
15. Constitution of India, 1950. Article 47 Duty of the State to raise the level of nutrition and the standard of living and to improve public health. [Cited 05 June 2021]. Available from: <https://indiankanoon.org/doc/1551554/>
16. Bolcato M, Aurilio MT, Aprile A, Di Mizio G, Della Pietra B, Feola A. Take-home messages from the COVID-19 pandemic: Strengths and pitfalls of the Italian national health service from a medico-legal point of view. *InHealthcare* 2021 Jan (Vol. 9, No. 1, p. 17). Multidisciplinary Digital Publishing Institute.
17. Cohen IG, Crespo AM, White DB. Potential legal liability for withdrawing or withholding ventilators during COVID-19: assessing the risks and identifying needed reforms. *JAMA*. 2020; 323(19): 1901- 1902.
18. 2015 New York Laws. PBH - Public Health. Article 30 - (Public Health) EMERGENCY MEDICAL SERVICES. 3000-A - Emergency medical treatment, Justia US Law NY Pub Health L x 3000-A (2015).
19. Klitzman R.L. Legal Immunity for Physicians during the COVID-19 Pandemic Needs to Address Legal and Ethical Challenges. *Chest*.2020; 158(4): 1343-5.
20. Mehta A. R., Szakmany T. and Sorbie A. The medicolegal landscape through the lens of COVID-19: time for reform. *JRSM*. 2021; 114(2):55–9.
21. Yau CWH, Leigh B, Liberati E, et al. Clinical negligence costs: taking action to safeguard NHS sustainability. *BMJ*. 2020; 368: 552.
22. Zhang JJ, Dong X, Cao YY, Yuan YD, Yang YB, Yan YQ et al. Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. *Allergy*. 2020; 75(7): 1730-1741.
23. Verity R, Okell LC, Dorigatti I, Winskill P, Whittaker C, Imai N. et al. Estimates of the severity of coronavirus disease 2019: a model-based analysis. *Lancet Infect Dis*. 2020; 20(6): 669- 77.
24. Financial Times. UK care homes struggle with wave of Covid-19 cases. [cited 05 June 2021]. Available from: <https://www.ft.com/content/574ca84a-e735-4e42-8faf62c641953>
25. Arends B. Opinion: The nursing home COVID-19 tragedy — how did this happen? [cited 05 June 2021]. Available from: <https://www.marketwatch.com/story/the-nursing-home-covid-19-tragedy-howdid-this-happen-2020-04-2>
26. Cioffi A. COVID-19: The Invisible Massacre of the Elderly and the Possible Professional Liabilities. *Medico-legal Update*. October-December 2020; 20(4):56-8.
27. Pomara C, Volti GL, Cappello F. COVID-19 Deaths: Are We Sure It Is Pneumonia? Please, Autopsy, Autopsy, Autopsy! *J Clin Med* 2020; 9(5):1259.
28. Parekh U, Chariot P, Dang C, Pedersen AS, Druid H. A roadmap to the safe practice of Forensic Medicine in the COVID-19 pandemic. *J Forensic Leg Med*. 2020; 76: 102036.
29. Salerno M, Sessa F, Piscopo A, et al. No Autopsies on COVID-19 Deaths: A Missed Opportunity and the Lockdown of Science. *J Clin Med*. 2020; 9:1472.
30. Rao C. Medical certification of cause of death for COVID-19. *Bull World Health Organ*. 2020; 98, 298-298A.
31. World Health Organization. Guidance for managing ethical issues in infectious disease outbreaks; 2016. ISBN: 9789241549837. [Cited 05 June 2021]. Available from: <https://apps.who.int/iris/handle/10665/250580>.
32. World Health Organization. Ethical considerations in developing a public health response to pandemic influenza. Geneva: World Health Organization; 2007. [Cited 05 June 2021]. Available from: [https://apps.who.int/iris/bitstream/handle/10665/70006/WHO\\_CDS\\_EPR\\_GIP\\_2007.2\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/70006/WHO_CDS_EPR_GIP_2007.2_eng.pdf?sequence=1&isAllowed=y)
33. Wang Z, Tang K. Combating COVID-19: health equity matters. *Nat Med*. 2020; 26(458). <https://doi.org/10.1038/s41591-020-0823-6>.
34. Whitworth J. COVID-19: a fast-evolving pandemic. *Trans R Soc Trop Med Hyg*. 2020; 114(4):241.
35. Ahmed F, Ahmed NE, Pissarides C, Stiglitz J. Why inequality could spread COVID-19. *Lancet*. 2020; 5(5): 240.