



Strengthening health care research and academics during and after COVID19 pandemic- an Indian perspective

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ABSTRACT

The world-wide crisis of COVID-19 pandemic has disrupted daily lives, global economies, intra/inter-countries political outlook and educational systems. Schools and colleges in India and abroad are under lock-down to maximize social distancing and minimize the spread of infection amongst students and teaching staff. Health sciences related universities and researchers are forced to adopt non-contact teaching and research.

Present article highlights the positive impact and opportunities provided by COVID-19 crisis to health care research and academic set-up. We have compiled ethical, effective and practical guidelines to mitigate the impact on health care related research and academic front during these pandemic times in an Indian perspective. These guidelines and management suggestions can be modified to suit region based cases and can be applied in global perspective also.

The suggestions in the current article provide a working collaboration of students and teachers to effectively connect on virtual platforms to strengthen their research output, giving suggestions of data-sharing and rapid review of proposals by online review ethical boards. This time is proposed to be used for generating a positive impact on health and research sector to use each adversity as an opportunity.

Contributions

Credit - Conceptualization: Chowdhry A. Investigation: Chowdhry A, Kapoor P, Popli DB. Review: Kapoor P, Popli DB.

Writing - original draft preparation: Chowdhry A. Review: Chowdhry A, Kapoor P, Popli. Editing: Chowdhry A, Kapoor P.

1. Introduction

The Background: Corona viruses (CoVs) are a family of zoonotic RNA beta-coronaviruses and its seventh strain emerged in Wuhan (China), on December 12th, 2019, from a local fresh seafood market.^{1,2}

On February 11, 2020, International Committee on Taxonomy of Viruses coined “severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)” as the name of this novel virus causing the coronavirus disease of 2019, i.e. COVID-19.³

The Problem: The world-wide crisis of COVID-19 pandemic, challenges us all with uncertain, disruptive circumstances. This pandemic has majorly changed daily lives, global economies, intra/inter-country political outlook and educational systems. Schools, universities and

researchers haven't faced this magnitude of disruption in generations, with nearly total closures of schools, universities and colleges with approximately 1.725 billion learners are currently affected world over. As per UNICEF data of impact on global student population, 98.5% are believed to be affected with 186 countries on complete and eight on local shut down.⁴

Since March 16, 2020, Indian schools and colleges are under lock-down to maximize social distancing and minimize the spread of infection amongst students and teaching staff.⁵ Important changes have been made pan-India, in relation to online teaching, admission and student assessment.

“Journal of Oral Biology and Craniofacial Research (JOB CR) is publishing contributions in platform for both clinical and translational research and to promote interdisciplinary sciences.”⁶ Hence this perspective article attempts to highlight positive impacts and opportunities provided by COVID-19 pandemic period to health care research and academic set up. The article also enlists numerous challenges, both short-term and long-term in academics and research in Indian health care setup, during and after COVID 19 pandemic and proposes ways and policies to shape up post-coronavirus health care universities

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landscape in future by collective efforts.

2. COVID-19: positive impact on health care research and academic set-up

“In the time of crisis we should be aware of danger – but also recognise the opportunity.”

-J.F. Kennedy

While COVID-19 pandemic is a genuine danger to human wellbeing, with diminishing degrees of contamination it very well may be considered as surprisingly positive development,⁷ making environment a health friendly one. Respiratory illnesses (such as influenza, parainfluenza, respiratory syncytial virus, and human metapneumovirus) have shown decline at children hospital in San Diego.⁸

Due to less traffic as a result of lockdown doctors and para medical staff don't need to drive significant distances to get to medical clinics and dispensaries, this can prompt better quality and quantity of rest. Home cooking and eating is being done, which is a healthier option than eating out in these infectious times.⁹

COVID-19 has made a positive impact on patient to doctor interaction dynamics. Nelson B 2020 brings up COVID-19 pandemic may cause public to be more willing to adapt and act on public health and wellbeing messages.⁸

COVID-19 pandemic has already changed health care technology and its usage for distant consultations using telecom technology. Telehealth visits are booming as doctors and patients embrace distancing amid the coronavirus crisis.¹⁰ Quarantine management program, Real time patient managements, SARS-CoV-2 vaccine are few opportunities for research and transforming how health care will be delivered beyond 2020.¹¹

Government of India and its Prime Minister have commended the job of medical community in these pandemic times. Indian government has amended Epidemic Diseases Act of 1897 for providing safety to doctors, medical attendants, paramedical staff. Medical community can now perform duties fearlessly and translate data generated into good ethical research.¹²

3. Recommendations in healthcare research and academics in COVID -19 context

After careful appraisal of literature and addition of personal reflection/opinion, authors have compiled following points and management suggestion to mitigate the impact on research and academic front (Fig. 1):

1. **Prepare to work and collaborate virtually:** Laptop, charger, webcam will be most required armamentarium to disseminate knowledge. World has already shrunk and it is quite easy to engage and convince stalwarts and eminent scientists to share their knowledge on various live streaming software's.

As suggested in previously, new authors in scientific writing are recommended to join experienced researchers, this is can be easily done by virtual collaborations.^{13,14} Collaborations with experienced and expert stalwarts in ethics, politics, or public policy have positive implications on final submitted research work for publication.¹⁵ Topics like Biomedical ethics can be easily imbibed at grass root level by these online team work.

2. **Check Deadlines:** It is obviously possible that federal agencies and other funders (including Indian Council of Medical Research/ Department of Biotechnology/Department of Science and Technology) might extend deadlines for project submissions in these pandemic times. Principal investigator should take a lead here and share how the crisis has affected team-work and how team plans to

keep progressing, with deadlines in mind.¹⁶

It is recommended that students are not pressurised for deadlines and that teachers show flexibility in submission dates as many of students might be stranded or might be compromised in establishing communication due to limited online resources. Authorities should know that too many deadlines, pressure to publish and API (annual performance index) score for promotion are responsible for plagiarism.¹³

3. **Alter research methodology:** Online institutional review board should be constituted in all the universities so that virtual approval can be provided. Many of the project and research work might change methodologies, which rely on face-to-face interaction to collect data.
4. **Have plan B:** These are infectious times and chances of co-workers falling sick is possible. Hence cross training of staff is important. Single investigator maintaining and storing entire data should be avoided. Maintaining data on spread sheet with multiple access is recommended.
5. **Maintain communication and virtual socialization:** Frequent communication is key to not only keeping the research going but also safeguarding mental health of students and researchers.¹⁷ Bregman D et al., 2020 suggests “What we need in a pandemic is not social distancing, but physical distancing with social connectedness.”¹⁸

Many of the stalwarts can use these pandemic times for self-promotion of own articles ethically for increasing scientific impact/citation. Blogging/tweeting/research gate etc platforms can be used for increasing academic foot print. It may be noted here that sharing data ethically does lead to increased citations over a longer period of time.¹⁹

6. **Time to upgrade:** The pandemic crisis lock down time gives each student and academician, a chance to increase their academic outputs. The researchers can utilise their time in writing proposals for grants and simultaneously also enhance their skills and knowledge by various online pedagogical learning courses or discussions. Government of India (www.swayam.gov.in) has initiated and designed online courses which are interactive, free of cost available to any learner.
7. **Build-up a support system:** As a student it's important to keep in touch with authorities so that a support system can be build up to tackle any kind of critical situations. Since many of universities have told students to vacate hostel immediately, It's important that teachers ensure that students reach respective homes safely.
8. **Rapid sharing of data:** In a policy brief developed by the WHO Working Group on Ethics & COVID-19 states that “Research projects should be coordinated nationally and internationally to avoid wasteful duplication and underpowered studies, and to ensure that priorities and activities are consistent with response efforts.”²⁰
9. **Pandemic Reading and Writing:** COVID-19 has disrupted life all over the world, but one practice relatively unaffected by the pandemic is reading. Students and academicians should have a daily read list to make best out of these social distancing times. Online free access journals can be handy in this. Teachers and mentors should share favourite titles and abstracts to initiate discussions and drive students to read articles. Various online modes like google classrooms can be effectively used for sharing presentations, books, assignments and also hold quiz or interactive discussions with students.

Students, teachers, researchers, etc can hone skills of writing both scientific and casual text during these crisis times. The entire focus can be to disseminate knowledge, which can be utilized by students and researchers once lockdown and isolation conditions are removed.

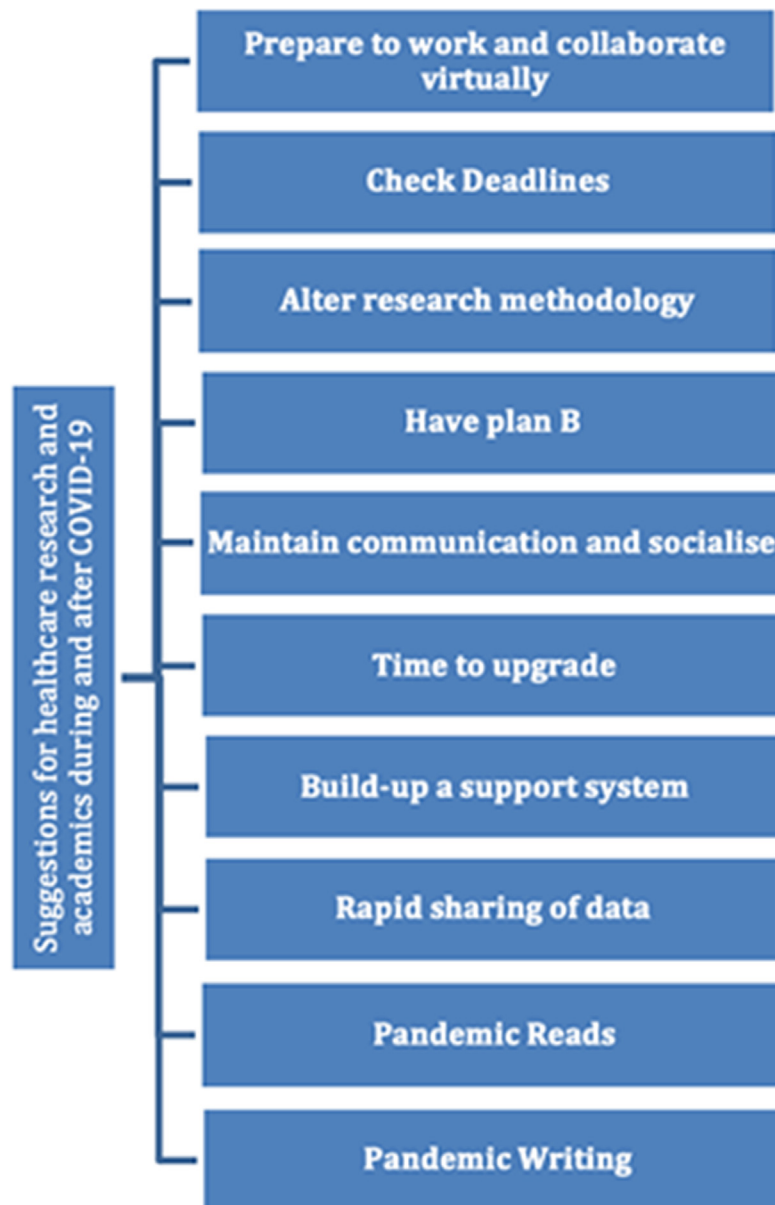


Fig. 1. Suggestions for healthcare research and academics during and after COVID-19.

Above mentioned suggestions are not exhaustive and can be modified as per individual situations. Since the scientific knowledge and related data keeps on increasing, these guidelines can be modified to suit region based cases. Most of the recommendations provided can be applied in global perspective also.

4. The solution (road ahead)

“The show must go on” - Freddie Mercury / Queen (Bohemian Rhapsody)

WHO had declared COVID-19 outbreak as pandemic on the March 11, 2020 and entire world including Indian sub-continent has been under lock down. Isolation has given science a whole new perspective on health care related research and academics. Non-contact mode of teaching and research is new mantra of safe-studying at universities, including ones involving health care givers. However, at the same time it has also given an opportunity to healthcare researchers, academicians and also students to build up their research quotient utilising virtual connectivity and spend their time effectively to upgrade their skills and

knowledge. The article suggests online ethical reviews for speeding up proposals while easing the deadlines in the current scenario. Also, at the same time compliments the government on their initiatives of quality online courses for benefit of academic community.

In the midst of all the confusion and shock caused by COVID-19, it is crucial that universities and research intuitions providing health care should stick to their basic principles and ethical standards, which will offer a sense of direction and legitimacy to patient care, academics and research. India and abroad medical community comprising of doctors, nurses, paramedical staff, and accredited social health workers and students shall face these dark times fearlessly, collectively and shall act today to define future of mankind.

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