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Impact of the COVID-19 on Academic Researchers; A Questionnaire Study on Research Institute across India

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Abstract

The COVID-19 pandemic has disrupted clinical research across the world. Though these disruptions pale in comparison to the enormous amount of human loss and suffering caused by the disease, they have a significant impact on study teams that have the ability to complete research studies and may significantly affect study results.

Method: Data collection took place after a few months after the covid-19 pandemic was almost reduced. The study was conducted for a month via an online survey;51 subjects were included in the data analysis from India.

Results: Covid-19 had majorly affected the researchers and their research. Due to this, it was difficult for the researchers to continue the lab-based research from home thus, it resulted in the failure of their ongoing research.

Conclusion: The conclusion to the problem of continuing research or suggestions for the future pandemic-like situation were suggested by almost 49-51% of people from the survey conducted.

Keywords: COVID-19; Pandemic; Clinical research; Disease, Health catastrophe; Severe acute respiratory syndrome; Outbreak

Introduction

The global COVID-19 health catastrophe has quickly altered the life science landscape, including our working routines, with partial or whole institutional shutdowns in numerous nations. Due to COVID-19-related job constraints or the necessity to care for children as a result of the shutdown of schools and kindergartens, some life scientists may feel essentially "trapped" today and unable to conduct studies. Young life scientists who typically have short-term contracts and may be concerned about their future careers may find this to be a particularly terrifying experience. Other researchers have started working from home during closures and curfews to advance their scientific endeavours. Scientists were significantly impacted by COVID-19, which resulted in stress and work interruptions, but we are also witnessing the emergence of new patterns of regional and global cooperation, idea sharing, and electronic learning. Scientists involved in COVID-19-related research activities, the impact of COVID-19 on the daily operations of life scientists is discussed in this editorial. We emphasize who in the life sciences community may be particularly vulnerable in the current circumstances as well as how the current health crisis has impacted employment patterns in the field. A significant portion of this editorial was based on a survey that we conducted among colleagues in India and at the international level, where the highest number of responses were from Maharashtra state, India.

Abbreviations

SARS: Severe acute respiratory syndrome

ARDS: Acute respiratory distress syndrome

MoHFW: Ministry of Health and Family Welfare, Government of India

MERS: Middle East respiratory syndrome

ICMR: Indian council of medical research

Introduction

A pandemic is an epidemic that spreads across the globe. The phrases endemic, outbreak, epidemic, and pandemic refer to the occurrence of a disease in comparison to its expected rate, as well as its geographic spread. An endemic disease spreads through a community at a known rate. An outbreak occurs when the number of people who appear with a health condition or the occurrence of cases in a new location increases unexpectedly. An epidemic is a disease outbreak that spreads across a vast territory [1].

Background

There have been many such outbreaks in history out of whichcholera was common in Asia until 1817, when a pandemic broke out in India and spread to other parts of the globe. This pandemic (Figures 1- 7). Occurred amid an era of increased globalization as a result of advancements in transportation technology. The flea-borne bacteria Yersinia pestis causes plague and has been responsible for at least three human plague pandemics. The most famous example is the 1918 Spanish influenza which infected more than a third of the world's population and killed around 50 million people. Since 1918, there have been three influenza pandemics: 1957, 1968, and 2009's H1N1. Bubonic plague (the Black Death) in the 14th century, the severe acute respiratory syndrome (SARS) virus in 2003, and HIV/AIDS are all examples. The spread of a disease is influenced by a variety of circumstances. Two of the most significant are the ease with which the disease can be passed from one person to the next and the movement of people, particularly by airplane, because diseases can be spread to other parts of the world in hours. These definitions may appear simple,

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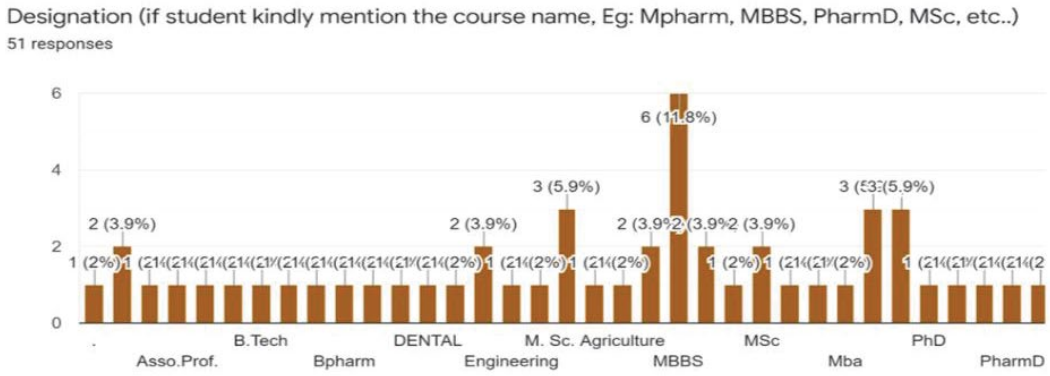

Figure 1: Responses to question – Designation.

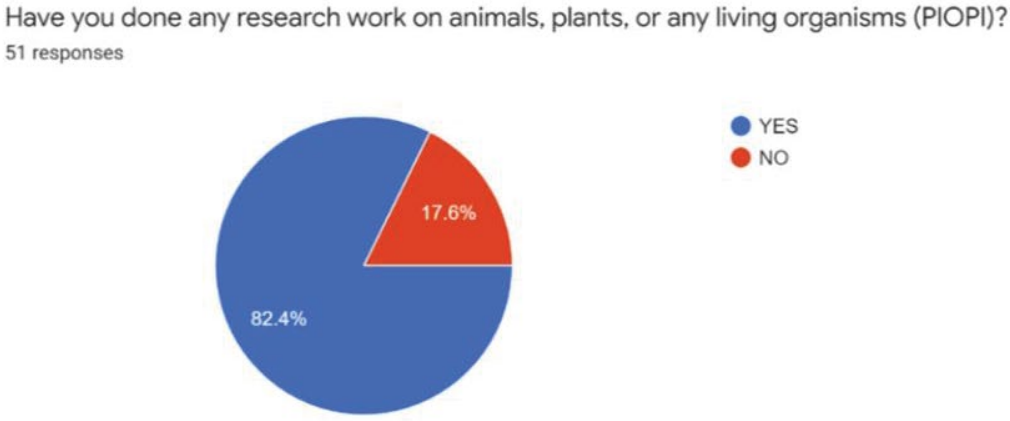

Figure 2: Response to the question - Have you done any research work on animals, plants, or any living organisms (PIOPI)?

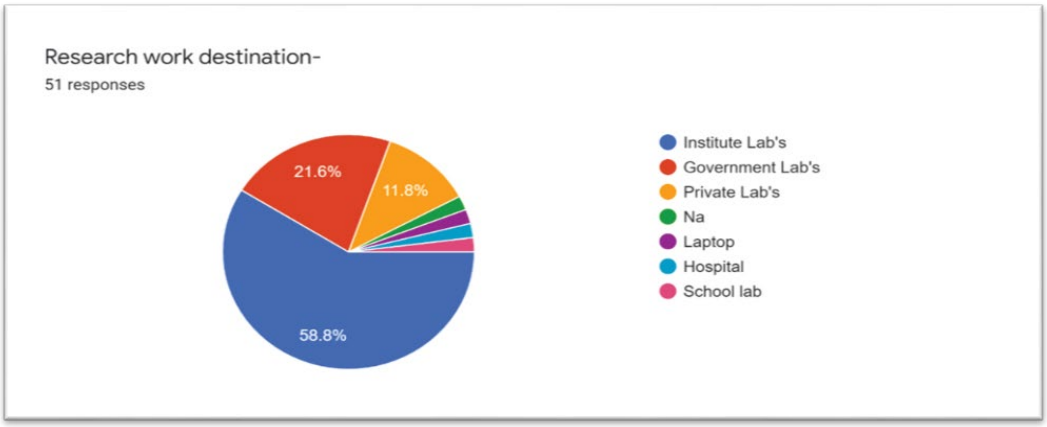

Figure 3: Response to the question- Research work destination?

but putting them into practice in changing real-world settings is difficult. HIV, for example, began in West Africa, spread throughout Africa for decades, and eventually became a pandemic by the late twentieth century. However, two decades into the twenty-first century, it is reasonable to conclude that HIV is currently endemic in various parts of the globe. [1, 2]. Coronavirus disease (COVID-19) is caused by the SARS-CoV-2 virus, an infectious disease. The novel coronavirus infection (COVID-19) epidemic, which began at a seafood market in Wuhan, Hubei Province, China, in mid-December 2019, has already spread to 215 countries, territories, and places throughout the world. [3] This out of the blue situation had a huge influence on the careers of people of different fields. Among those who develop symptoms, most (about 80%) recover from the disease without needing hospital treatment. About 15% became seriously ill and required oxygen and 5% became critically ill and needed intensive care. Respiratory failure, acute respiratory distress syndrome (ARDS), sepsis and septic shock, thromboembolism, and/or multiorgan failure, including harm to the heart, liver, or kidneys, are all possible causes of mortality. WHO is cooperating with our Global Technical Network for COVID-19 Clinical Management, researchers, and patient organizations around the world

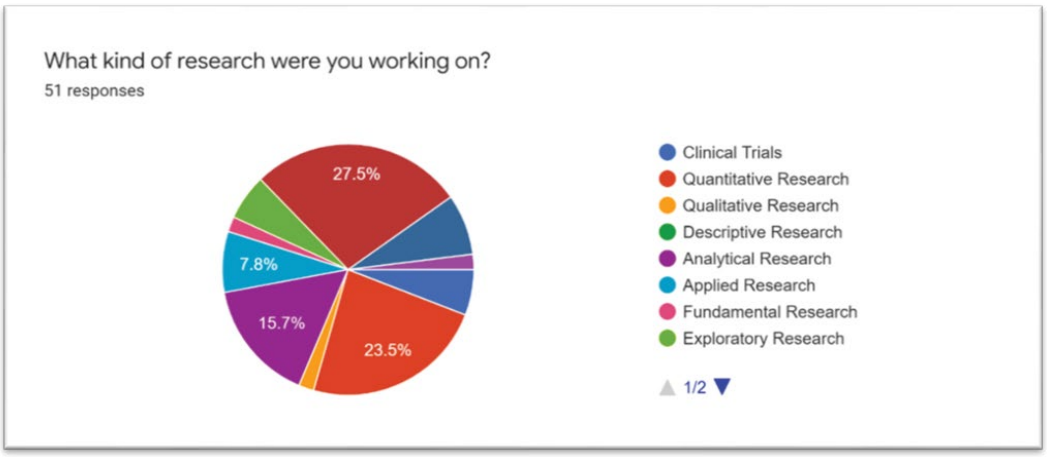

Figure 4: Response to the question- What kind of research were you working on?

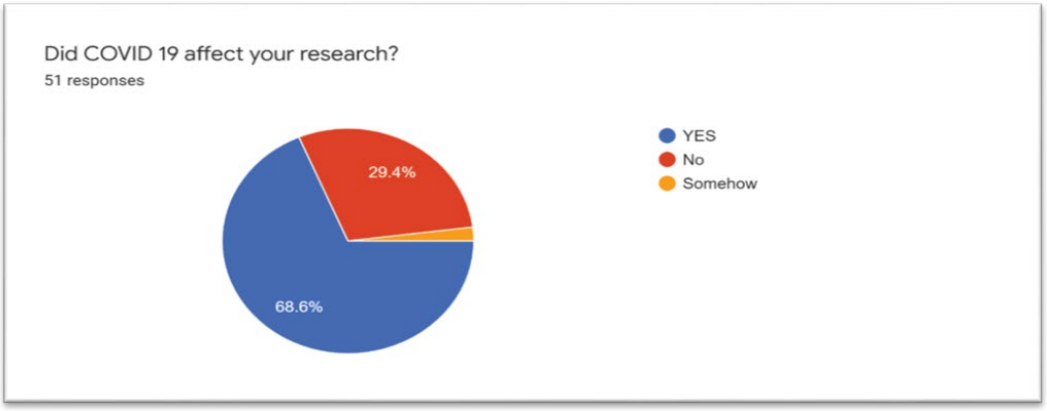

Figure 5: Response to the question- Did Covid 19 affect your research?

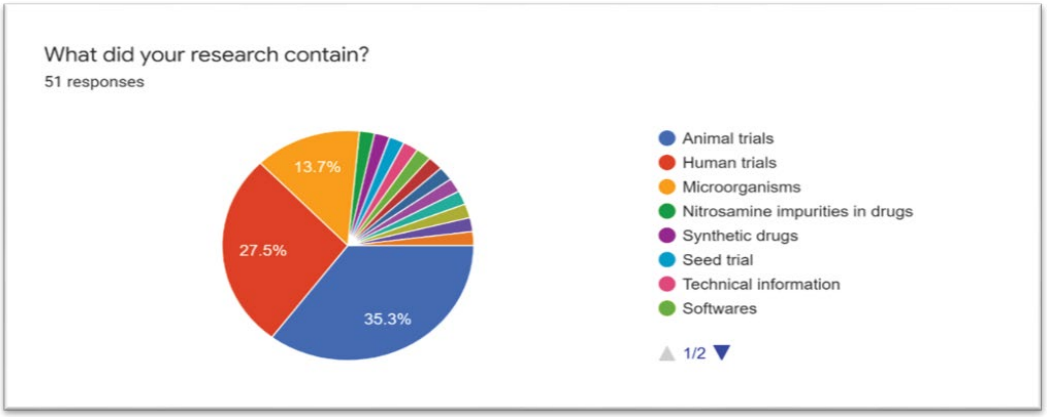

Figure 6: Response to the question-What did your research contain?

to design and conduct studies of patients beyond the acute course of illness to better comprehend the proportion of patients experiencing long-term effects, how long they last, andwhy they occur?These studies will be used to develop further guidance for patient care [4].

Methods

Impact of COVID-19 on daily life

The present situation of virus is affecting people and increasing the number of deaths daily globally irrespective of environment and location. There are several reports related to the Coronavirus outbreak. In India the first case of coronavirus was reported on 30th Jan 2020. As on 30th April 2020, the cases by the Ministry of Health and Family Welfare, Government of India (MoHFW), 24162 active cases, 8372 cured and discharged, 1075 deaths were reported [5]. In order to prevent this potential pandemic (COVID-19) (Figures 8- 14) outbreak, we have to take care about all the situations and solutions with guidelines of Governments and the international community to develop the solution of these problems and vaccines. This situation has impacted on the daily human life, industries, businesses, organizations,

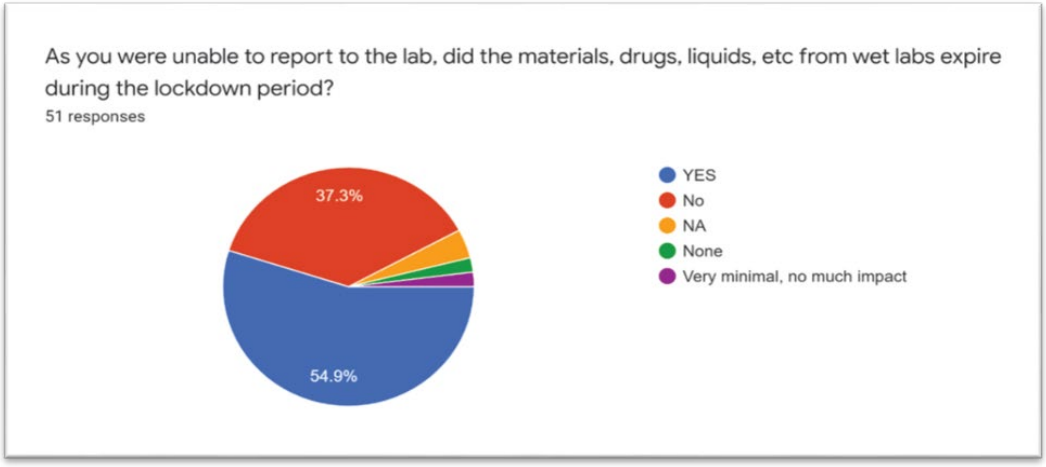

Figure 7: Response to the question- As you were unable to report to the lab, did the materials, drugs, liquid, etc from wet labs expire during the lockdown period?

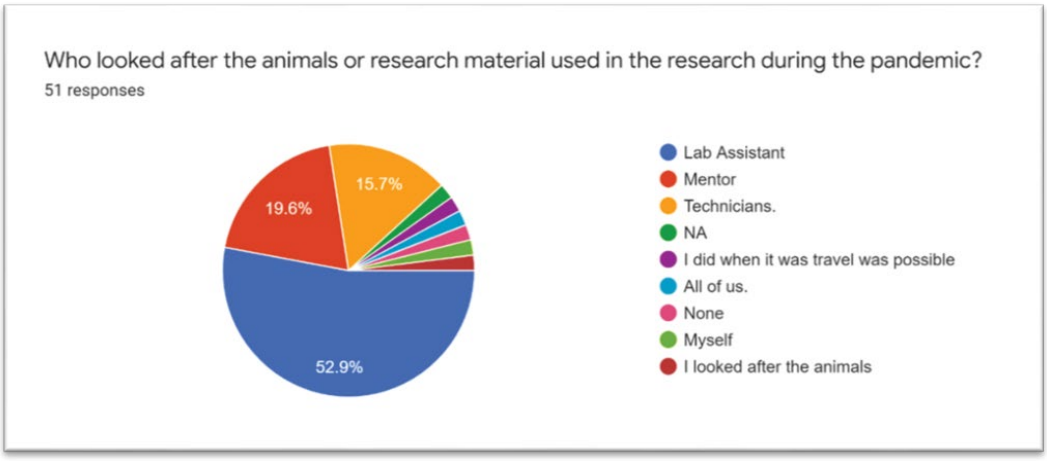

Figure 8: Response to the question- Who looked after the animals or research material used in the research during the pandemic?

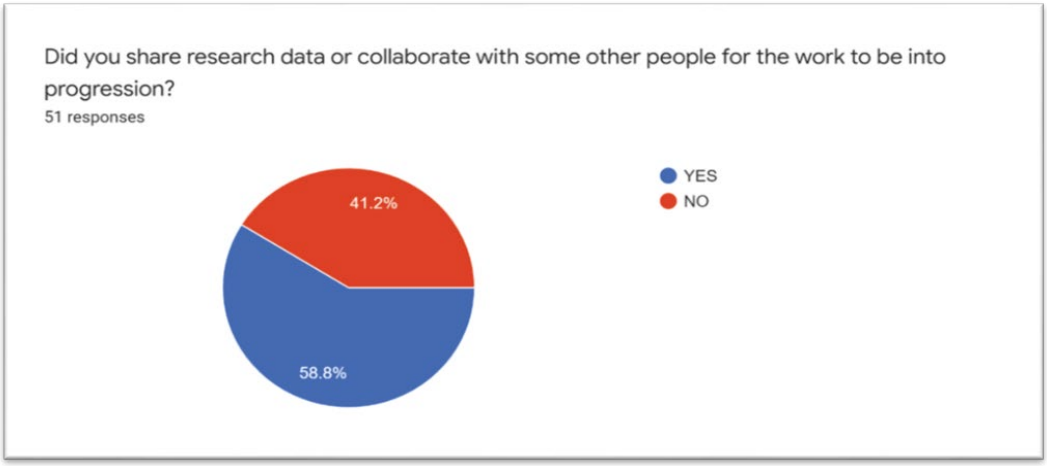

Figure 9: Response to the question- Did you share research data or collaborate with some other people for the work to be into progression?

companies, personally, professionally, at social level, heath level, more impact on global economic and at various levels globally [6]. This outbreak also showed impact on other areas and industries like pharmaceutical, solar, travel and tourism, Information and electronic, Education organizations, Insurance. All govt. and other healthcare agencies of different countries, areas and territories are continuously focusing and identifying the cases, affects and solutions of this pandemic (COVID-19). Healthcare professionals are facing many

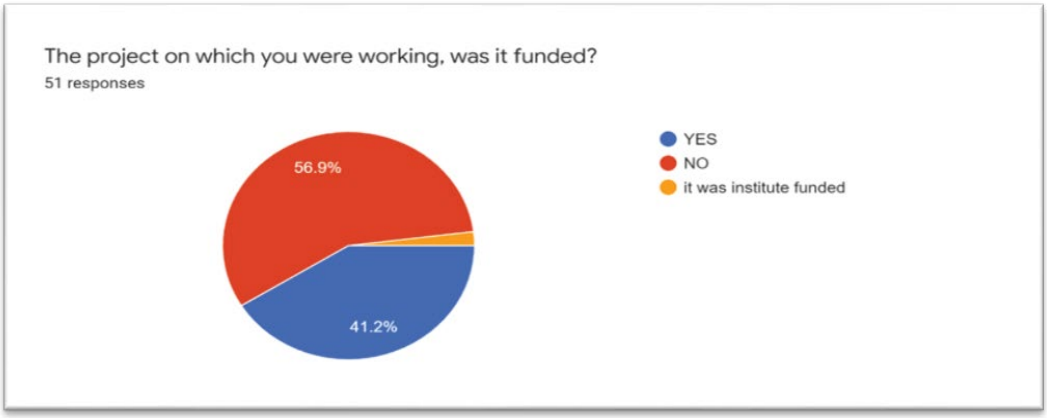

Figure 10: Response to the question- The project on which you were working was it funded?

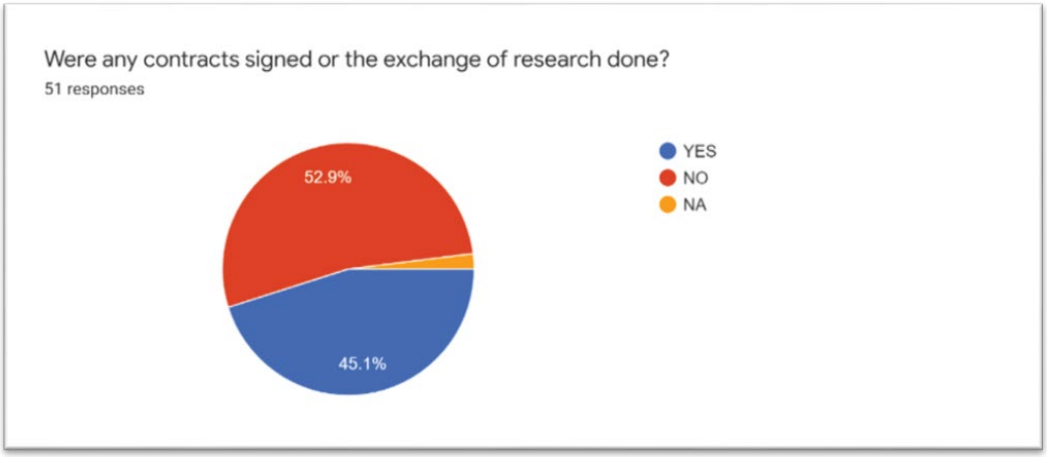

Figure 11: Response to the question- Were any contracts signed or the exchange of research done?

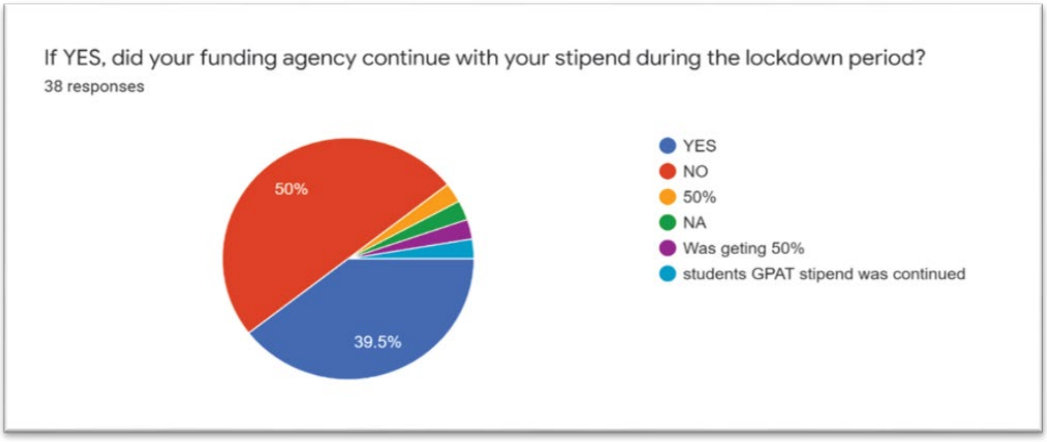

Figure 12: Response to the question- If Yes, did your funding agency continue with your stipend during the lockdown period?

difficulties to maintain the quality of healthcare at present time. And thus, the major impact was seen on the educational fields [6, 7].

Impact of covid in research

The sudden outbreak of covid-19 has shown a vast impact on education all over the world. As per the research covid-19 had vast ramifications on researchers as their on-going researches were suddenly stopped, which majorly affected the animals that were under research as their utmost care and handling of animals was not done due to lockdown. Overall, there are about 17 major In vivo animal labs in India and around 593 Pharmacy colleges in Maharashtra out of which around 10-12 colleges own their animal houses in Pune city which were affected. Thus, the major impact on animals like baboons, cats, cows, dogs, ferrets, fish, frogs, guinea pigs, hamsters, horses, llamas,

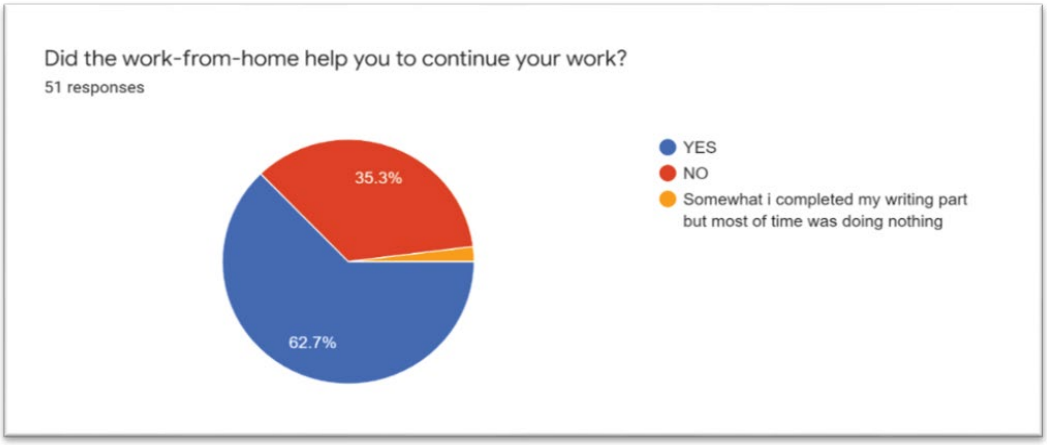

Figure 13: Response to the question- Did the work-from-home help you to continue your work?

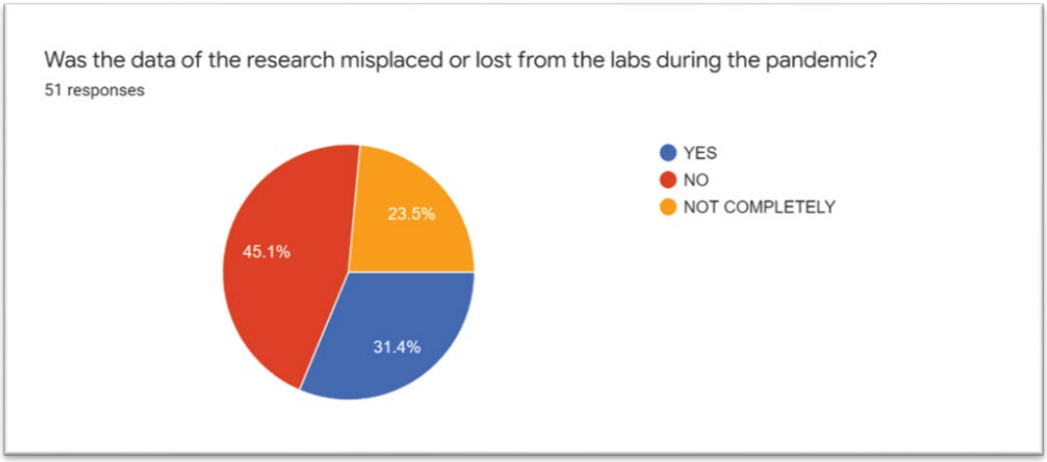

Figure 14: Response to the question- Was the data of the research misplaced or lost from the labs during the pandemic?

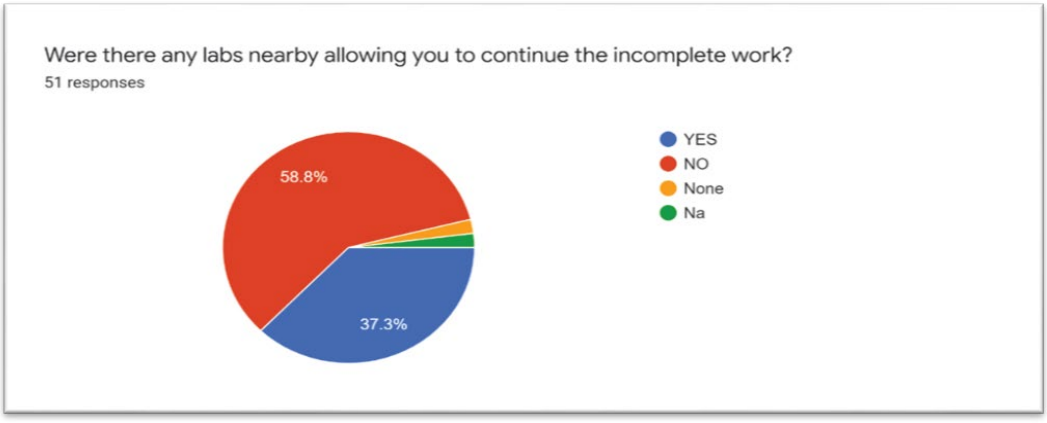

Figure 15: Response to the question- Were there any labs nearby allowing you to continue the incomplete work?

mice, monkeys (such as marmosets and macaques), owls, pigs, quail, rabbits, rats and sheep in the animal houses. Another massive impact of coronavirus outbreak is on the carrier of early researchers which comes as silver lining in these dark times [7].

Objectives

- To analysis how Covid-19 had a vast ramification on the health of researchers and how it affects their research work
- To evaluate the difficulties and Obstacles to continue their research work.

Literature Review

According to Sumitra Pokhrel et al (2021) the COVID-19 epidemic has wreaked havoc on education systems throughout the world, affecting approximately 1.6 billion students in over 200 nations. School, institution, and other learning facility closures have impacted more

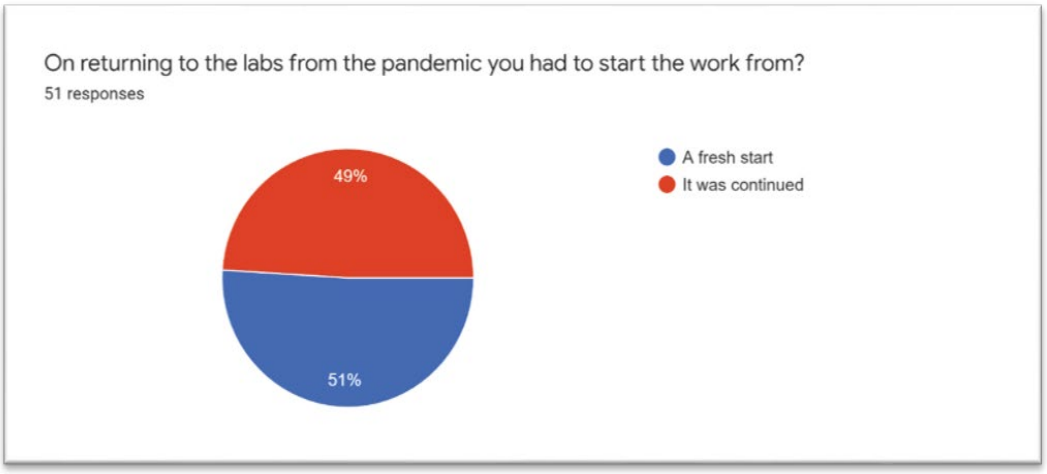

Figure 16: Response to the question- On returning to the labs from the pandemic you had to stary the work from?

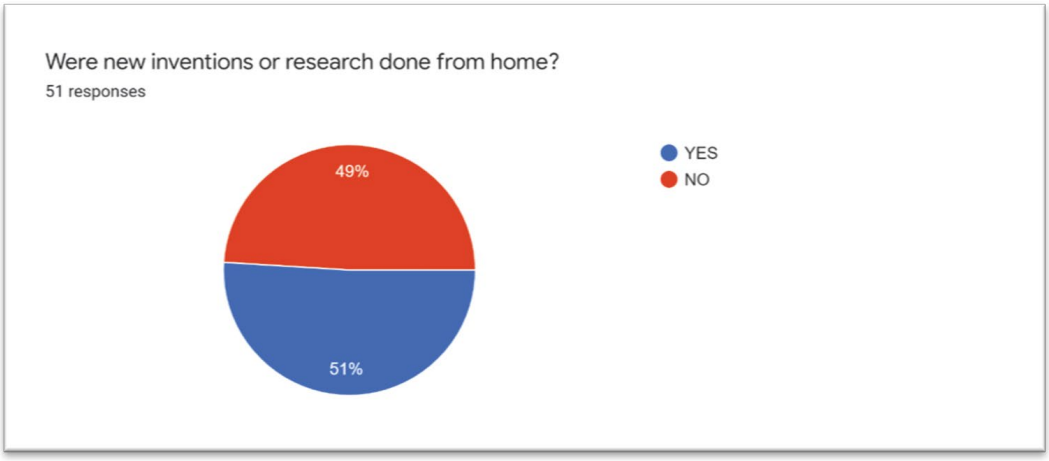

Figure 17: Response to the question- Were new inventions or research done from home?

than 94 percent of the world's student population. Social distancing and restrictive movement policies have significantly disturbed traditional educational practices [8]. The need of the hour is to innovate and implement alternative educational systems and assessment strategies. Basilaia and Kvavadze (2020)states that the COVID-19 pandemic has provided us with an opportunity to pave the way for introducing digital learning. As of July 2020, the epidemic has infected 98.6% of learners globally, or 1.725 billion children and youth in 200 nations, from pre-primary through higher education [9]. Paul et al recommends that the mental and psychological well-being of the community, in particular older adults, be taken into careful account when developing epidemic control measures to combat the future outbreak of diseases in the community. In addition, it is important to alert family members to vulnerable individuals who are at potential risk because of their illnesses or anxieties [9]. M. Bishr Omary in (2020) said that Universities began to implement emergency operation plans, which rapidly escalated as SARS–CoV-2 began its exponential spread. Driven by both the imperative for social distancing and individual state executive orders, many research institutions have severely reduced onsite research to activities deemed essential supplemental material. They included three principles for the permitted and encouraged student's viz., (a) Noncritical research and research-related activities must be performed remotely, (b) strict adherence to social distancing is required, and (c) new projects that require in-person presence are not permitted, with the exception of COVID-19–related basic and clinical research. Unless explicit dispensation is required, "dry" laboratory research is conducted remotely, and active therapeutic clinical studies are still underway. Critical research activities are allowed, with one authorized "critical laboratory member" allowed on site at a time, with a possible rotating system if necessary. Graduate and postdoctoral fellows, but not undergraduate students, can be designated as critical personnel, but only if trainees and mentors agree [10]. L. Harper in his article of 2020 said that Virology research (including influenza) accounted for less than 2% of all biomedical research prior to the COVID pandemic. However, the number of laboratories and investigators that have shifted their focus to COVID-related research problems is astounding, perhaps accounting for 10e20 percent of all contemporary biomedical research, demonstrating the research community's extraordinary adaptability. The quick infusion of global money for COVID-19 research is in the billions of dollars. The speed and efficiency with which research findings and data are shared has never been greater. The crisis has also reintroduced poverty, health, and healthcare to the forefront of society concerns, and it will have a long-term influence on government expenditure. However, there is a drawback to all of this positivity and focus [11]. To begin with, M. Mehra in his article in the journal of paediatric urology wrote that the COVID-19 problem has resulted in a flood of publications. Not only are speciality journals besieged with submissions from writers who have unintentionally

been awarded much-needed writing time, but COVID publications have also saturated us. Since December 2019, more than 20,000 papers have been published, many of them in reputable publications. Preprint platforms, such as BioRxiv, are also seeing an increase in the number of publications submitted for quick distribution prior to peer review. However, we cannot assume that the amount of time and quality available for peer review will keep up with the increase in publishing. In the midst of this enormous rush of submissions, there is a need for enhanced care, especially because we are increasingly seeing these results being chosen. Several respected journals, including the Lancet and the New England Journal of Medicine, have retracted previous and potentially substantial COVID-related discoveries in recent weeks [12]. Travel, social, and financial constraints will all have a significant impact on scientific research throughout the world. COVID-19 initiatives have been given priority above all others in terms of research people and resources. Most non-COVID clinical research has been halted due to distance and transmission challenges, resulting in a decrease in study subject enrolment and a delay in data input into the clinical trial database. Due to travel restrictions, research-related employment has been halted, and young researchers who are not working on the pandemic may soon be out of a job. Indeed, while government-funded medical research organizations throughout the world declare they are dedicated to sustaining the continuity and range of biomedical research, it remains to be seen how the economic downturn will affect government investment. Furthermore, public-funding-based research funding is likely to plummet, and many academics will suffer a considerable reduction in funding options. Given the worldwide economic effect of the crisis, it's difficult to believe that future research funding will be unaffected.

Benefit to institution/society

Researchers play a vital role in bringing innovations and development to society. Their research bridges knowledge gaps and changes the way healthcare practitioners operate by providing solutions to previously unknown questions. It is critical in the development of novel medicines as well as ensuring that existing treatments are used to their full potential. Thus, it is important to take into consideration how and what researchers have faced in the Covid-19 pandemic.

Methodology

After the literature review, we have formulated a questionnaire.

Study design

Study type: Cross sectional study

Study setting: Across India

Study duration: 3 Months

Study sample: As per the response.

Materials and methods: After the literature review, we have formulated a questionnaire.

Source of data/sampling method

Simple random sampling

Inclusion criteria

The researchers who are working on animals, plants, microorganisms or any living organisms.

Exclusion criteria

The below 18 age people and researchers working in dry labs are excluded.

Sampling Size

Cumulative sampling

Ethical Issues

As the study involves human participants all the principles of biomedical research as given in the declaration of Helsinki and national ethical guidelines for health research (ICMR) involving human participants are upheld. The participation within the study would be voluntary after ensuring the understating by giving adequate information to the participants. The privacy and confidentiality of the participants will be taken care of and will not be revealed. All the documents will be kept safely in the laptop without access to people other than from the study team.

Biosafety issues (if applicable)

Not applicable

Result and Analysis

In total, we received 51 responses from Assistant professor, Bachelors from Pharmacy, MBBS, PharmD, MSc, and others. The highest number of responses was by MBBS students. Research work destinations were listed such as Institute Labs, Government Labs, private labs etc. As there are many types of research such as Clinical trials, qualitative research, quantitative research, descriptive research, analytical research, applied research, etc listed. The highest number of responses was found for quantitative research. Our survey confirmed that, overall, there has been a significant impact of institute closures on life scientists: 68.6% of people resounded saying that their research works were affected due to the Covid-19 pandemic.82.4% of people have already done or were working on animals, plants or any living organisms and 17.6% of people who responded didn't do lab-based research work 35.3% of respondent's research work included animal trials, 27.5% included human trials, 13.7% were micro-organisms, and the rest were others. During the shutdown, the lab was maintained by lab assistants. 54.9% of researchers lost their materials from the wet labs as it got expired. This is likely to result in financial consequences, as 57% of the research project was not sponsored or funded. The other projects 41.2% were sponsored, the funding agency did not provide stiffened by the sponsors to the 50% of scientists. To overcome this 58.8% of scientists collaborated or shared their work. The scientists were not allowed even to work at nearby labs the work from home helped 63% of scientists that led to certain inventions. On return back to labs after the government released rules to restrict in numbers allowed to visit the labs, 51% of scientists had to start their work from a scratch. On return back to labs after the government released rules to restrict in numbers allowed to visit the labs, 51% of scientists had to start their work from a scratch.

Conclusion

COVID-19 has already altered the globe, not just as a result of the sickness itself, but also as a result of the global response to the pandemic. While the pandemic may have had some silver linings, it is critical that present and future research be conducted in a wide and open manner, the least future pandemic preparation studies replicate the hard-won lessons of today. According to the 22 questions of our survey, we conclude that 49% people had the solutions to their research in the pandemic. Also, there are 51% people who have the solution / suggestion to their ongoing research if the pandemic-like situation arises again.

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