

Original Article

Impact of COVID-19 Pandemic on Health Science Educational Institutions in Kerala

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The impact of COVID-19 has shaken the world to its core. Severe short-term disruption is felt by all domains of human existence. Educational institutions around the world are not spared. The national lockdown of health science education institutions caused major interruption in students' learning, both theory and practice; disruptions in internal assessments and the postponement of qualifying University examinations. In order to assess the magnitude and the extent of the impact of the catastrophe on the Health Science education sector in the state, the Kerala University of Health Sciences (KUHS), Thrissur, conducted online surveys among faculty members, students, educational experts and institution managers of affiliated institutions during April-May, 2020. The findings were analyzed to explore the possibilities; by integrating classroom learning with e-Learning modes to build a Unified Learning System, effective educational practice for the capacity building of young minds and some careful planning, we might be able to limit the long-term consequences of this prolonged shutdown.

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Key words : COVID-19, Pandemic, Impact on Health Science Education, Online Teaching Learning, e-Learning.

The COVID-19 lockdown has created unprecedented havoc in all the areas of human life globally. Academics is one of the key areas affected; disruptions have occurred in Theory and Clinical Training, Internal Assessments and Conduct of University Examinations.

The COVID-19 pandemic is primarily a health crisis. But its containment involves social measures which are all-encompassing. Like the rest of the World, India too decided to close down all schools, colleges and Universities along with industrial and commercial establishments- steps to reduce interpersonal contact¹. Special Rules and Guidelines have been formulated for disease containment and 'Flattening of the Curve'. Situations and spaces for people aggregation have been limited. Public places like shops, malls, cinema and auditorium are closed. By halting public transport and mass transit, free movements of citizens have been curtailed. Personal measures like wearing face masks and hand sanitizing are made mandatory for all. Infection spread is prevented by Sequestering Containment Zones. Consequent to these measures, severe short-term disruptions are felt by many educational institutions around the World. The resulting home schooling-like situation is a massive shock to the students' social life, learning and career².

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Editor's Comment :

- COVID-19 pandemic has created an intermediate to long term disruption in all domains of human life and the Health Science Education sector is critically affected.
- To overcome this situation, we need face the challenges head-on with meticulous, well grounded planning, effective allocation of available infrastructure and resources and utilising every opportunity to bring in innovations.
- Present scenario emphasizes the need to integrating classroom learning with e-Learning modes to build a Unified Learning System.
- Teachers and students need to be trained to explore digital learning, preferably using learning platforms which are open source rather than branded.
- Establishing a comprehensive and effective educational practice for the capacity building of young minds will develop skills which will upscale their employability, productivity, health and wellbeing in the decades to come.

Desperate situations require desperate measures. The present situation necessitates the stakeholders to move into online teaching, a less tried and tested modality of Teaching-learning Method in an unprecedented scale^{3,4}. Student assessments might need to go online, which might further the uncertainty for everyone involved. As of now, many assessments have simply been postponed. Most importantly, these interruptions will not just remain short-term issues but can also have long-term consequences for the affected cohorts and are likely to increase inequality. The digital divide might widen further^{5,6}. Even in the face of a number of hurdles, KUHS is trying to ensure online education initiatives so that students can continue their learning during the lockdown period and keep up the momentum of educational activities.

MATERIAL AND METHOD

The KUHS was established for ensuring proper and systematic instruction, teaching, training and research in Modern Medicine, Homoeopathy, Dental, Nursing, Pharmacy, Indian Systems of Medicine including Ayurveda, Siddha, Yoga, Naturopathy, Unani and Allied Health Sciences. It provides uniformity in the various academic programs in the State of Kerala due to its state-wide jurisdiction. So far 312 professional colleges have been affiliated to the University. There are 13911 faculty members and nearly 100,000 students studying in these affiliated Institutions. In our study, responses were obtained through Semi structured questionnaires from faculty members (n=3162), educational experts (n=18), managers (n=121) and students (n=4044). Google forms were used to collect and analyze the responses online.

RESULTS

Impact of Lockdown : View of Teachers

Among the Health Science Faculty, 3162 teachers of Kerala University of Health Sciences affiliated Institutions participated in the study (Fig 1). 88.2% teachers opined that lockdown affected examination, 74.6% said it affected the classes (Fig 2). Since the Health Science Stream is practical oriented, other major area affected was clinical posting / practical experience, 11.41% teachers expressed their concerns regarding the loss of clinical hours. Fear of unemployment is shadowing the teaching and non-teaching members of staff within the Self Financing Health Science Education Sector. On the other hand, 53% of health science faculty members participated in online survey opined to continue online class after lockdown and they said online teaching learning activities are effective (Table 1).

Impact of Lockdown : View of Students

4044 students from different streams took part in the Survey (Fig 1). Among them, 67% students were from Private sector, 22% aided Colleges and 11% from Government sector. Most of the students (82%) were concerned

about the restarting of their classes (Fig 3). 60.5% felt that regularity in their schedules got affected, 38.4 % said they were missing out the one-to-one interactions with their teachers, peers and friends. As many as 31.6 per cent students missed their extra-curricular activities such as Physical Education, Sports, Art, Music, and Dance (Fig 3).

Conversely, among students surveyed 55.5% per cent respondents stated that their concentration is better Studying at Home. 76.5% said online teaching is effective in supplementing in your regular learning, 63% suggested it is effective in bridging the learning gap caused by lockdown and 34% of health science students participated in online survey opined to continue online class after lockdown (Table 1).

Impact of Lockdown : View of Managers

The management representatives expressed concerns over the unexpected lockdown. It has affected all the domains of the education sector, creating a standstill. The impact of lockdown in the health science education sector resulted in some students contemplating on discontinuation of the courses. Financial concerns are looming in the background, especially since there are no patients in the hospitals. The financial constraint due to the lagging in fee collection also is a major challenge before the management to meet the two ends. If the lockdown

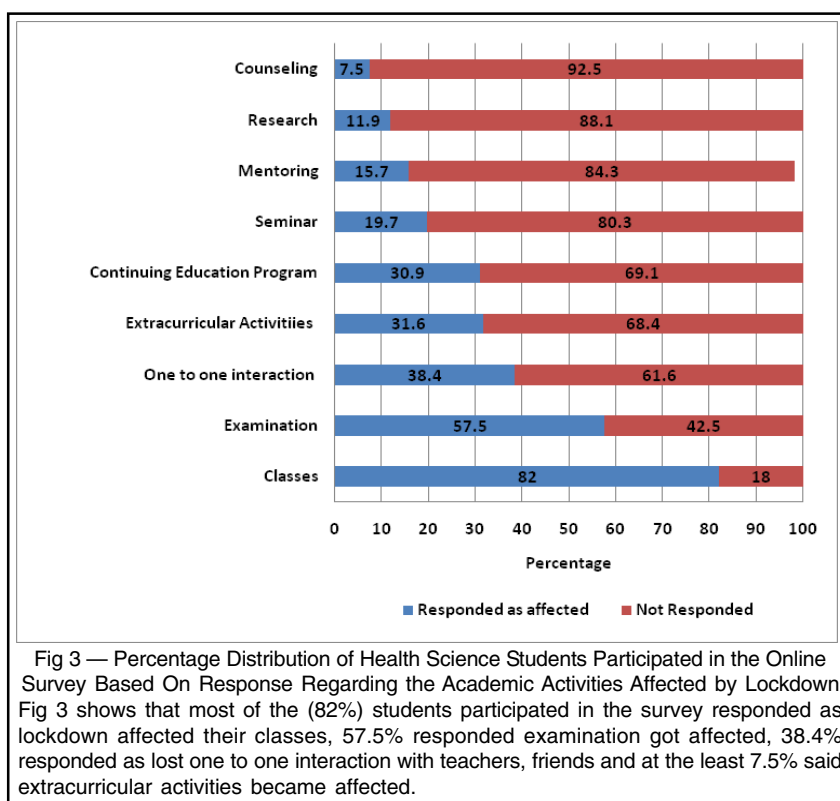


Fig 3 — Percentage Distribution of Health Science Students Participated in the Online Survey Based On Response Regarding the Academic Activities Affected by Lockdown Fig 3 shows that most of the (82%) students participated in the survey responded as lockdown affected their classes, 57.5% responded examination got affected, 38.4% responded as lost one to one interaction with teachers, friends and at the least 7.5% said extracurricular activities became affected.

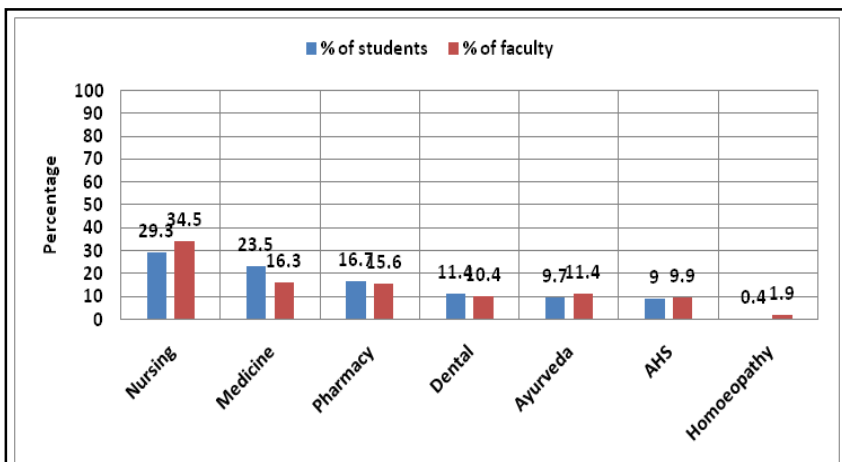


Fig 1 Percentage Distribution of Health Science Students and Faculty Members Participated in the Online Survey based on Stream

It is depicted in Figure: 1 that 29.3% of students participated in the online survey belongs to Nursing stream, 23.5 % from Medicine, 16.7 % from Pharmacy, 11.4% from Dental, 9.7 % from Ayurveda, 9% from Allied Health Science and 0.4 % from Homoeopathy stream, 34.5% faculty members participated in the online survey belongs to Nursing stream, 16.3% from Medicine, 15.6% from Pharmacy, 11.4% from Ayurveda, 10.4% from Dental, 9.9% from Allied Health Science and 1.9% from Homoeopathy stream respectively.

goes on for the long run, management may find difficulty to pay the salary for the teaching and non-teaching staff.

Impact of Lockdown : View of Educational Experts

Lockdown affects all Govt, Aided and Self-financing Health Science Education Sectors. Lockdown has been implemented without prior notice because of that unable to plan the day-to-day activities of colleges. Health Science Education sector has virtually come to a grinding halt. Those functioning are with skeletal staff and virtually no students. Lockdown affected the academic activities, timely completion of the portions and the teaching- learning process to certain extent. The clinical exposure to students is non-existent. Quality of education is reduced. As far as the students are concerned, online classes are on and difficulties are alleviated to some extent. But in the case of managements, income generation is likely to be affected and they find difficulty to meet the expenses. In future it may affect the admissions and thriving prospects of colleges. In order to completely shift

to a remote or online system, it is paramount to ensure that all students have or will be provided with the supportive infrastructure or resources, the findings noted.

DISCUSSION

It is obvious that the Lockdown has comprehensively affected the Health Science Education Sector. This is clear from the views and concerns of all stakeholders. The affected include Academic, Financial and Social Sectors.

(1) Academic : The most important aspect is naturally, the Teaching, Learning and Examinations. The absence of public transport, conversion of hostels into quarantines, closing down of class rooms have resulted in stoppage of conventional systems. Students are justified in expressing their anguish over absence of peer-interactions. Teachers have expressed their concerns in the near-monotonous online classes with a Virtual Community. Lack of ‘human’ skills like empathy and communication are of paramount importance. Overall, it is found that the

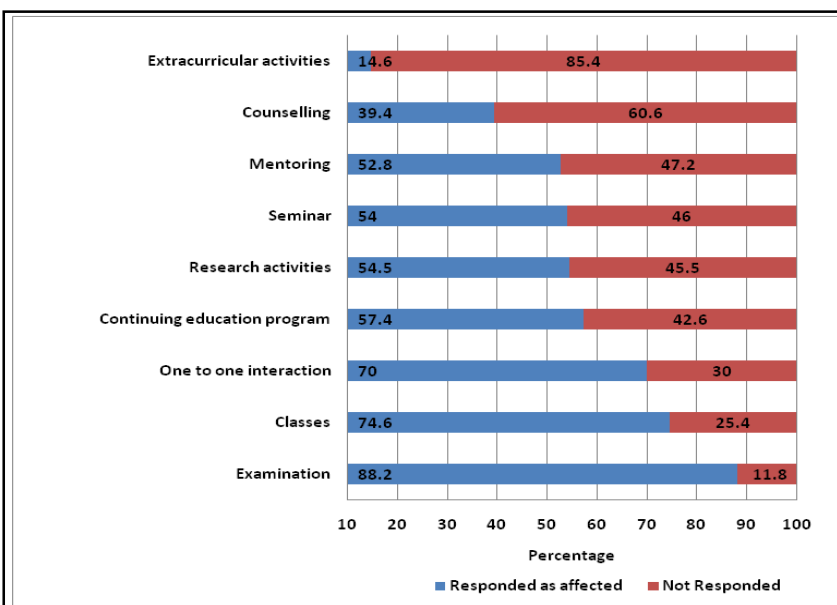


Fig 2 — Percentage Distribution of Health Science Faculty Members Participated In the Online Survey Based On Response Regarding the Academic Activities Affected by Lockdown
 Fig 2 depicts that most of the (88.2%) faculty members participated in the survey responded as lockdown affected the examinations, 74.6% responded classes got affected, 70% responded as lost one to one interaction with students,colleagues and at the least 14.6% said extracurricular activities became affected.

Table 1 — Percentage Distribution of Health Science Faculty Members and Students Participated in the Online Survey Based On Opinion Regarding Continuation of Online Class after Lockdown

Participants	n1=3162		n2=4044	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Faculty Members	1700	53.8	1462	46.2
Students	1375	34	2669	66

It is evident from Table 1 that, 53% of health science faculty members participated in online survey opinioned to continue online class after lockdown and 47% were not agreed upon continuation. At the same time, 34% of health science students participated in online survey opinioned to continue online class after lockdown and 66% were not agreed upon continuation.

human touch is lacking in online education. Conversion of hostels into quarantines is another factor which prevents outside students continuing their studies.

The worst affected is practical/clinical training. Lack of patients due to lockdown and fear of spread of the disease are the key elements. Staff cannot travel to the places of work.

Examinations in the KUHS pattern take the maximum brunt. Out-of-state examiners and out-of-zone examiners cannot report due to lack of travel facilities - air, road and rail. Indefinite postponement will disrupt the examination calendar prepared by the University.

Research has come to a near standstill. This is an area of great concern and should be addressed with earnestness.

(2) Financial : These are genuine concerns. Managements which barely thrive on the college alone might find the going tough. Already there are wage-cuts and employment layoffs in the news. There are also concerns that the online mode of teaching could result in lesser wages. Huge built-up areas are remaining un-utilized due to lockdowns, which, if continued, will accentuate the huge losses already accrued. Students and Teachers have expressed their concerns about the costs involved in the purchase of network time.

(3) Social : The insecurities created by COVID-19 are widespread and ubiquitous among all stakeholders. The availability of networks and the costs involved are areas of concern. This will enhance the digital divide. The quality of academic outcomes is affected. The parents of a few students, who were till now NRIs stationed in the UAE, expressed concerns over their ability to afford their wards' education in self-financing institutions.

On the contrary, there are positive outcomes also.

Online teaching gave an opportunity to innovate and execute newer pathways for Health Care Education. It has benefited for both the staff and students. Working from Home as a modality has become the new norm. Thus online classes have brought a great opportunity for digital revolution in education and transformation in the role of a teacher. It is safe to presume that this section of students does not seem to face any issues when transitioning from a college to home environment. It is also equally important to assess the quality and effectiveness of the learning materials being provided to the students.

Possible Solutions

- It is necessary to explore digital learning, digital skill of the teachers and students need to be emphasized^{6,7}.
- Specialized Teaching Methodologies have to evolve for Online Teaching.
- Teachers and students need to be trained for this.
- Jobs and Salaries of Teachers should be protected.
- On Campus-off Campus Teaching Systems can be tried in future.
- Measures should be taken to mitigate the effect of the pandemic on Internship Program, Research Projects and Job offers⁸.
- Integration of technology into Health Science Education like Simulation, Social Media should be actively explored.
- The Emotional Issues of Students in this scenario should be addressed^{9,10}.

CONCLUSION

The impact of COVID-19 is all encompassing and has shaken the World to its foundations. Its impact on Health Science Education Sector is similar to the damage every other is facing. But it is possible that, with some careful planning, we might be able to limit the long-term adverse consequences of this prolonged shutdown. Colleges need resources to rebuild the loss in learning, once they open again¹⁰. It is important to reconsider the current content delivery and pedagogical methods in colleges by seamlessly integrating classroom learning with e-Learning modes to build a unified learning system. The University should play a leadership role in these uncertain times to steer the ship in uncharted path. In this special circumstance, we need a well-rounded and effective educational practice for the capacity building of young minds. It will develop skills that will drive their employability,

productivity, health and well being in the decade to come and ensure the overall progress and leadership role Health Science Education Sector.

Limitations :

- The study was confined to small number of subjects in a State Level University, which limit the generalization.
- Google survey form was used to collect data due to National Lockdown. Other methods like Focus Group Discussions could not be used to gather in-depth data.

Conflict of Interests : Authors declare that they have no conflict of interest.

Ethical Issues : An online informed consent was taken from all participants during the study.

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