



IMPACT OF COVID-19 ON INDIAN MEDICAL POSTGRADUATES FROM DIAGNOSTIC BRANCHES

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KEYWORDS :

INTRODUCTION

The outbreak of respiratory illness caused by a novel corona virus (named "COVID-2019") was declared a global health emergency on 30 January 2020 and a pandemic on 11 March 2020 by the World Health Organization (WHO) (1). The function of laboratory medicine emerged during infectious disease outbreaks eruption has a well-established history(4). Clinical chemistry laboratories played a vital role in treating the COVID-19 pandemic in several ways, by establishing diagnosis, prognosis, disease staging, therapeutic medication monitoring, and epidemiologic surveillance investigations (5).

The postgraduate students, in the Diagnostic branches served tremendously in clinical laboratories. As a person who has already, graduated with a Bachelor of Medicine and Bachelor of Surgery they acted as health care professionals rendering their clinical services in COVID care centers. The post-graduation students who acted as trainees as well as frontline healthcare workers were very much impacted under stress (8).

The COVID-19 pandemic has affected significantly all Academic programs, particularly post-graduate medical education due to the impact on Curricular aspects, examinations, several offline training programs, Research works, etc. The pandemic has brought numerous problems to educational institutions as they try to meet the expectations of the healthcare workforce by graduating trained practitioners in different diagnostic branches (7).

A specified specialty-based structured curriculum and syllabus serve as the general foundation for postgraduate resident training in India(9). This curriculum typically includes lecture and patient-based learning, rotations in other specialties, and dissertation work, among other things. The rapid spread of the virus has impacted the way lectures are delivered, thus dwindling the education process. (10).

Innovative lecture methods were adapted to conduct online teaching and training classes by using different online platforms like Zoom, Google Classroom, Google Meet, etc to guide postgraduate trainees in light of the pandemic's enormous obstacles (2,3). The students gain Practical experience in a suitable healthcare setting is regarded as essential to producing well-rounded practitioners in any healthcare profession, regardless of the postgraduate medical student's educational and training program (6). When measured against historical norms, it was astounding how quickly the COVID-19 genome was mapped, diagnostic tests were created and put into use, and therapeutic clinical trials were started (11). Due to the increased workload in the clinical laboratories, post-graduates gained hands-on experience. However, that hands-on training was not in a structured manner designed for PG teaching and training. Dissertation work which is the foundation for a postgraduate medical graduate in the field of research is affected to a great extent by the pandemic.

This article is focused on the challenges of Postgraduate students who served as laboratory professionals during the COVID-19 pandemic were also succeeded in their academics thoroughly.

MATERIAL & METHODS

Both numbers and percentages were used to express the category variables. The Chi-square test was utilized to compute the associations. P values less than 0.05 are considered statistically significant. A sample size of 384 was determined using a 95% confidence level and a 5% absolute margin of error.

The survey has enrolled postgraduate (MD) trainees from diagnostic branches i.e., Biochemistry, Pathology & Microbiology of different medical colleges across the country over one month from 22 August to 22 September 2023. A semi-structured online questionnaire was created to evaluate the difficulties postgraduates encountered while engaging in teaching and research activities associated with their tenure as postgraduate students, the degree of stress brought on by the shortcomings that emerged during the pandemic, new advances in the laboratories they worked during the pandemic and the methods used to overcome those obstacles [Annexure 1]. Fifteen experts were sent the questionnaire to ensure its validity. Ten specialists from a variety of fields answered our request and assigned it a grade based on the guidelines we provided. Quantitative content validity was determined using the Content Validity Index (CVI). The content validity index for individual items (I-CVI) can be calculated by dividing the total number of validating experts by the number of experts that rate each questionnaire item as "very relevant." The percentage of items rated as "very relevant" by all participating specialists is known as the content validity index of the overall scale (S-CVI). With an I-CVI of 0.80 and an S-CVI/Average of 0.9, the validation process was entirely fulfilled.

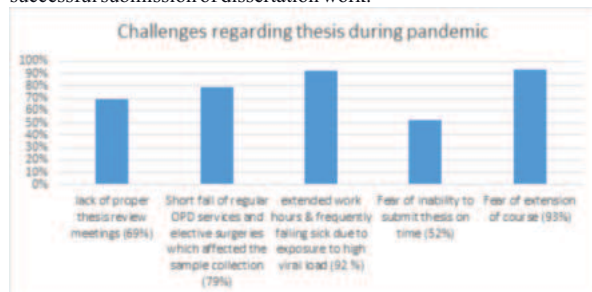
Following validation, this survey was converted into an online Google form, and the link was sent via email and social media sites including Facebook, WhatsApp, and Telegram. As part of a snowball sampling technique, participants were urged to roll out the questionnaire to as many people as possible. Using the aforementioned networks, teaching faculty members in the investigators' social circle from various specializations at several medical institutions across the country distributed the Google form to the Senior residents at their institute. Following their click on the link, participants were given a brief explanation of the purpose of the survey and asked for their agreement. The participants were required to respond to a series of mandatory questions that appeared one after the other after giving their permission to participate in the survey. There were no questions in the survey that would reveal the identity of the individual or the institute, and the answers were kept private. Following this, the survey was closed, and all of the results were combined, sorted, organized, and examined.

RESULTS

This Google Form questionnaire was distributed to 750 participants (including Senior residents newly joined lab consultants and newly joined assistant professors) by colleagues via different social media platforms. A total of 623 responses were received but only 410 were fully answered among them. Among these 419 participants, 30 (7.1%) were not working anywhere during the time of study. The major challenges regarding the thesis during the pandemic were a lack of proper thesis review meetings, a Shortfall of regular OPD services and elective surgeries which affected the sample collection, extended work hours & frequent falling sick due to exposure to high viral load. Fear of

the inability to submit the thesis on time which may lead to an extension of course was one of the major stress practices for the participants during the pandemic.

However, the reduction of sample size helped 238 participants for the successful submission of dissertation work.

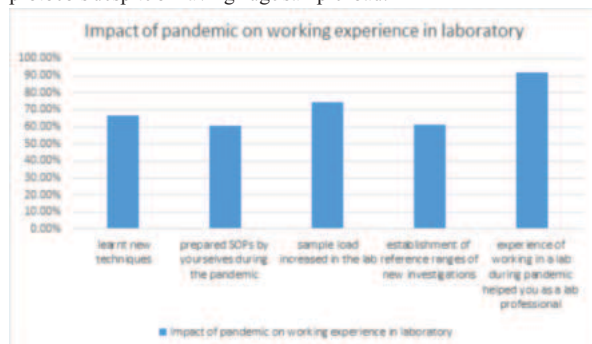


Three hundred and ninety-three (93.7%) participants were infected by corona virus at least once and among them three hundred and seventy-two participants felt all the regular academic activities were affected badly due to pandemic. Lack of adequate exposure to routine investigations as a result of normal services being suspended was another key worry during the pandemic (56.5%), $P = 0.329$. The other Fear of course extension (49.2%), $P = 0.01$, postponement of future plans (45.1%), $P = 0.03$, contracting COVID-19 (43.4%), $P = 0.01$, extended working hours (24.5%), $P = 0.12$, and not being able to pursue further education overseas (15.9%), $P = 0.60$ were among the concerns raised.

Almost all the participants felt that studying was difficult during the pandemic and they also stated that online platforms were used for regular academic activities. 254 participants stated that their PG exam result was below their expectation (60.6%, $P = 0.002$). They also stated that psychological stress was also a reason for under performance in the exams.

Among 419 participants 379(90.4%) participants stated that new equipment was installed during the pandemic in the lab where they were trained. The majority of participants, stated that they learnt new techniques in the lab during the pandemic (66.4%, $P = 0.001$) and prepared SOPs by yourselves during the pandemic (60.6%, $P = 0.002$). They also stated sample load increased in the lab where they were being trained (54.4%, $P = 0.75$), participated in establishment of reference ranges of new investigations introduced in the lab (61.1%, $P = 0.002$), got a chance to learn techniques of other departments (70.3%, $P = 0.0007$), and experience of working in a lab during pandemic helped you as a lab professional (91.9%, $P = 0.0002$).

Additionally, as the post graduates worked in the laboratory during pandemic they got trained to work with a heavy sample load and restricted turnaround time. The participants also expressed they found out ways to proper maintenance of quality control and sample handling protocols despite of having huge sample load.



DISCUSSION

According to the conducted google form-based survey, study participants encountered significant difficulties undergoing normal academic activities and carrying out their theses. Additionally, academics were greatly impacted in all disciplines, mostly as a result of clinical staff being diverted to COVID-19 care areas and internet platform connectivity problems. In most instances, this led to elevated levels of tension and anxiety. This can be major reason for lack of interest in academics (12). We discovered that, when it came to the

difficulties associated with thesis conduct, the institutions had only acted in 40.8% of the cases. Majority of the dissertation topics were planned for elective patients and often requires both diagnostic laboratory and imaging services. Social distancing standards to prevent COVID-19 transmission have hindered Planned hospitalizations as many treating hospitals became COVID care centres. So samples availability for dissertation work is most affected.

In our study, one of the major concerns was lack of exposure to the research work during the pandemic. Many participants expressed their dissatisfaction in lack of proper structured post graduate academic schedule during pandemic. A schematic academic programme and an intense training in the research activities are core mandates in a post graduate education (13), we can understand that is one of the reasons for under performance in the examinations.

However, Updates that were available over years or decades, but not widely used suddenly came in to practice (11). These were predominant in diagnostic laboratories. Laboratory managements adapted to the new requirements (16). In order to cope up many laboratories have installed new equipment and introduced new test and new methods. As a part this the post graduates who were being trained in such laboratories got plenty of opportunities to formulate new SOPs, learn new techniques, establishing reference ranges and collaborating with other departments for certain investigations. As a lab professional these are the most important practical issues which help in the career (18).

CONCLUSION

COVID-19 will continue to have an impact on the health care system and education sectors well and beyond. This difficult period has presented numerous chances to reconsider clinical education for Postgraduates. Unquestionably, innovations took place rapidly during the pandemic in clinical laboratories and clinical education setups. Owing to the absence of a set academic timetable, postgraduates in diagnostic fields have had many struggles with their dissertations and research projects but they got numerous opportunities as young lab professionals to learn many new things. This experience of working in a clinical laboratory during the pandemic helped them as young lab professionals in their career.

Conflicts of Interest: There are no conflicts of interest.

Financial Support and Sponsorship: Nil.

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