Article • Evaluation of Online Optometry Learning Programs and Webinars During Covid-19 Lockdown in India – Post-One Year of Lockdown Period: Outcomes of a Survey

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ABSTRACT

Background: In late 2019, in response to the worldwide spread of the disease COVID-19, the authorities of India ordered a nationwide lockdown, which extended through 2021. In the wake of the pandemic, optometric education faced massive changes. This study aimed to evaluate the impact of online learning platforms from the student's perspective on the benefits and difficulties encountered.

Methods: An online survey was conducted for students of optometry across India. A list of colleges was made that provided the B.OPT/M.OPT degrees and fellowships in different specialties. The questionnaire was circulated to the colleges through e-mail and multiple social media platforms (LinkedIn, WhatsApp, and Instagram). The survey requested demographic information and details related to different online learning programs and the status of education provided during the COVID-19 pandemic.

Results: A total of 465 questionnaires were circulated, and 237 (50.96%) completed responses were received. The average age of students was 21.9 ± 2.14 years. The majority of the respondents (82.2%) were enrolled in bachelor's degree in optometry, 15.1% were in Masters in Optometry/M. Phil. programs, 1.68% were pursuing a Diploma in Optometry program, and 0.8% of the respondents were in fellowship. About 87.7% of the students responded that the lockdown had negatively impacted their learning programs. Ninety-seven percent of students responded that their college/university faculty were providing online lectures. The students responded that they faced difficulties in attending online lectures: 79% reported having network and connectivity issues, and 8% had electricity fluctuation issues. In all, 71.7% of the respondents felt that online classes and webinars were useful during the lockdown period.

Conclusion: Optometry students believed that online lectures were useful. There was a rise in online learning platforms to gain knowledge. Some students faced difficulty in attending lectures where internet-related connectivity issues were the common complaints. Optometry students and practitioners have adapted quickly to the pandemic with all vital precautions.

Keywords: online lectures, optometric education, pandemic, virtual learning

Introduction

In late 2019, respiratory disease and pneumonia of unknown cause was seen in Wuhan, China.[1] In early 2020, through genomic sequencing, a unique novel virus, termed as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and additionally called 2019 novel Coronavirus (2019-nCoV) (COVID-19), was revealed.[2] The World Health Organization has since declared this a global pandemic.[3] India reported its first case of COVID-19 on 30 January 2020, in the state of Kerala.[4] Indian authorities declared a lockdown on 24th March 2020, to be in place for 21 days.[5] On the 14th of April 2020, this lockdown was extended to 50 days.[6] Various states continued in lockdown as COVID-19 was still prevalent through 2021.

Optometrists are primary eyecare professionals who deliver patient care and dispense optical devices such as spectacles, contact lenses, and low-vision

devices and who provide vision therapy. Owing to the pandemic, optometry students and optometrists were challenged with issues pertaining to student education, patient care, and management.[7]

A review of the socio-economic implications of the pandemic identified education as one of the most affected service-provision sectors.[8] Academic activities in India were quickly halted in the middle of the year by individual institutions and states, even before the countrywide lockdown began.[9] As per the guidelines allotted by University Grant Commission (UGC), the apex organization for higher education in India, educational institutes must aim to provide quality education, ensuring uniformity, equity, and universal accessibility to all learners.[10] Additionally, students had to stay at home to abide by guidelines issued by their local authorities. Therefore, there was a need to develop a curriculum for the institutions to provide students with opportunities for continued learning.[11] The greatest challenge that was faced by educators and students was the instruction of hands-on practical clinical skills.[12,13] The pandemic raised an urgent need for the transformation of optometric education to an e-learning environment. Optometric educators and students in India responded speedily to this situation. There was a boom in the wide variety of webinars and online learning sessions on diverse social media platforms, on various topics of optometry, that were attended by optometry students pursuing bachelor's or master's degrees and optometrists getting fellowships in different specialties.

Sehgal et al.[14] found that the COVID-19 pandemic provided an opportunity to reform Indian optometric education through blended learning methods. Optometry practices modified and adapted instantly to the newly required hygiene norms. Rajhans et al.[12] found that the COVID-19 pandemic had proven to be an opportunity, giving a possibility for restructuring the prevailing conventional, classroom-based educational system. The rapid transition to an online mode of education helped keep continuity of optometric education programs.

Although the academic year was successfully completed, we decided to conduct a survey to assess the impact of the COVID-19 related lockdown on optometric education and clinical training programs in India, one-year post lockdown. The survey attempts to illustrate what student life looked like during the COVID-19 pandemic from the academic perspective and also assesses the online educational changes in practice patterns for the students and their perspective on the online learning and webinar modalities.

Table 1. Contents of the Questinnaire

Demographic data (name, age/gender, training program enrolled, year of training, nature of institute, name of institute, funding source)
Effect of lockdown on wellbeing and state of mind
Effect of lockdown on online lectures and webinar accessibility
Barriers, challenges, and difficulties faced while attending lectures/webinars
Satisfaction and usefulness of the webinars/lectures

Materials and Methods

The survey was carried out after institutional ethical committee approval. This was a cross-sectional study among optometry students in India.

The study evaluated:

- the performance of different online teaching platforms and their usefulness
- the impact on education and difficulties caused due to the emergence of the COVID-19 pandemic from student's perspective.

A study conducted by Deepak et al.[15] was used as a template with some modifications, including additional questions (Appendix 1). The questionnaire was composed of separate sections (Table 1).

The population of our survey mainly included optometry students pursuing bachelor's or master's degrees and optometrists pursuing fellowship in a different specialty in India. The data were collected in online form (Google Forms). A list of colleges was created that provided the contact information of those in B.OPT/M.OPT and fellowship. The questionnaire was circulated to the colleges during the lockdown period from June 9th, 2021 to August 22nd, 2021. The invitation to participate in the online survey was circulated through e-mail and multiple social media platforms (LinkedIn, WhatsApp, and Instagram). Inclusion criteria included being either a student or fellow pursuing their studies in India. It was mandatory to answer all questions, and the survey was anonymized. Questionnaires with incomplete information or missing data were excluded from the analysis. The estimated time of completion of this questionnaire was approximately 5-7 minutes. Respondents could not alter responses after submitting the questionnaire.

	Number (n=237)	%
Gender		
Female	192	81.01
Male	45	18.9
Degree pursuing		
Bachelor's in optometry	195	82.2
Master's in optometry/M.phil	36	15.1
Diploma in Optometry	4	1.68
Fellowship	2	0.8
Year in degree pursuing		
First year	66	27.8
Second year	62	26.1
Third year	42	17.7
Fourth year	67	28.2
Type of institution		
All-specialty medical hospital and Institute	125	52.7
Optometry Educational Institute	35	14.7
Eye hospital and Optometry College	77	32.4
Funding of the training centre		
Government-owned hospitals	107	45.1
Privately owned	109	45.99
Partly government owned	13	5.48
Others	8	3.37

Table 3. State-wise Regional Distribution of Responses by Students

States	Number (n=237)	Percentage (%)
Goa	91	38.39
Maharashtra	35	14.76
West Bengal	27	11.39
Gujarat	24	10.1
Tamil Nadu	18	7.59
Haryana	14	5.90
Karnataka	12	5.06
Jharkhand	4	1.68
Uttar Pradesh	3	1.26
Orissa	2	0.84
Kerala	2	0.84
Punjab	1	0.42
Andhra Pradesh	1	0.42
Madhya Pradesh	1	0.42
Rajasthan	1	0.42
Arunachal Pradesh	1	0.42

Data Analysis

The collected responses were exported by Microsoft Excel and coded. The coded data were imported into SPSS software for analysis. To test whether there was a relationship between the two categorical variables, a Chi-square test was used where P <0.05 was considered significant.

Table 4. Effect of Lockdown on Daily Routine, Well-being and State of Mind

	Number (n=237)	%
Q) Did the COVID-19 lockdown affect your daily routine?		
Yes	226	95.3
No	11	4.6
Q) How do you think the COVID-19 lock-down has affected your stress levels?		
Increased	182	76.7
Decreased	20	8.4
No effect	35	14.7
Q) What is your general state of mind during the lockdown?		
Happy	69	29.1
Unhappy	168	70.8

Results

A total of 465 questionnaires was circulated, wherein 241 responses were received by midnight 22 August 2021. A total of 237 fully filled forms were tabulated and analyzed, and incomplete/half-filled responses were excluded.

The average age of the respondents was 21.9 years (range: 23-45 years; SD: ±2.14) (see Table 2 for additional background). The state-wise regional distribution of the responses by students is shown in Table 3. About 226/237 (95.3%) indicated that their family had expressed concern for their health and wellbeing, specifically in regard to COVID-19 (Table 4). The optometry students were asked to report their daily schedule in the lockdown period (Figure 1).

In response to being asked whether the lockdown affected their training, a large majority (223/237; 94.09%) agreed, while 9/237 (3.7%) did not agree. When asked to rate the negative effect in percentage, 98/237 (41.3%) reported as 50-75%, and 72/237

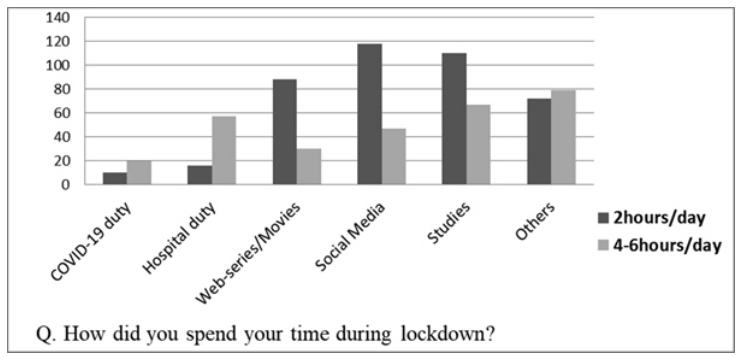

Figure 1. A specified breakdown of the trainees' self-reported day-by-day schedules

Table 5. Effect of Lockdown on Training and Theoretical Learning

	#	%
Q) Do you think this lockdown has affected your training?		
Yes	223	94.09
No	9	3.7
Not sure	5	2.1
Q) If yes, how much of a negative effect do you think the lockdown has had on your training?		
<25%	17	7.1
25-50%	50	21.09
50-75%	98	41.3
>75%	72	30.3
Q) Do you think this lockdown has affected your theoretical learning / classroom training?		
Agree	208	87.7
Disagree	18	7.5
Not sure	11	4.6
Q) If yes, how much of a negative effect do you think the lockdown has had on your theoretical learning / classroom training?		
<25%	25	10.5
25-50%	68	28.6
50-75%	77	32.4
>75%	67	28.2

(30.3%) reported as >75%. Further, respondents were asked to report whether the lockdown affected their theoretical learning/classroom training; 208/237 (87.7%) agreed, and 18/237 (7.5%) disagreed. When asked to rate the negative effect in percentage, 77/237 (32.4%) reported as 50-75%, and 67/237 (28.2%) reported as >75% (Table 5).

The respondents were asked whether their college/university faculties were using online lectures: 230/237 (97.0%) agreed, while 7/237 (2.9%) disagreed. They were asked about the devices that they used to attend the lectures (Table 6) and to report the platforms that were used (Table 7).

The students were asked whether they faced internet connectivity issues in attending the online webinars: about 186/237 (79%) reported having network and connectivity issues, and 20/237 (8%) had current fluctuation issues (Figure 2). They were

Table 6. Various Devices Used by the Students for Attending Online Lectures

Devices used to attend online webinars	n=237	Percentage (%)
Mobile phones	183	77.21
Laptops	46	19.40
Computers	4	1.68
Tablets	4	1.68

Table 7. Various Platforms Used by the Students for Attending Online Lectures

Platforms used	n=986	%
Webex Meeting	165	69.6
Google Meet	144	60.7
Zoom cloud meeting	128	54.0
Gotomeeting	100	42.1
WhatsApp	100	42.1
Microsoft Teams	88	37.1
Youtube	85	35.8
Hangout	95	40.0
Skype	77	32.4
Google Classroom	4	1.68

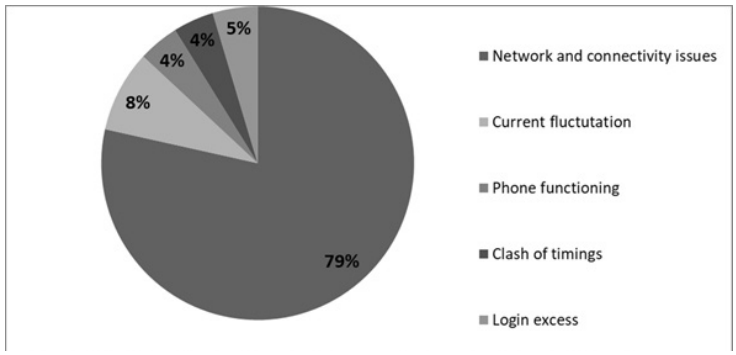

Figure 2. Graphical representation of the students' responses to the difficulties faced with access to the online platforms

asked about the affordability of the webinars; 100/237 (42%) reported them to be less expensive, while 20/237 (9%) reported them to be highly expensive. When asked about duration of lectures, 124 (52.3%) reported having 3-4 hours of lectures, 231 (97.4%) students reported a difference between online and offline modes of learning, and 123 (51.8%) reported the usefulness of recorded versions of webinars (Table 8).

Next, the students were asked to respond about satisfaction levels with attending online lectures on a linear scale from 1 to 5 (Figure 3). Analysis of the data was significant when affordability of the online lectures was correlated with the satisfaction level of attending online lectures (p=0.003).

Lastly, they were asked about the different webinars attended in the previous 6 months: 70/237 (30%) attended Cybersight webinars as well as other options (Table 9). They were asked for their participation in any future webinars post COVID-19 pandemic: 147/237 (62%) said yes, and 90/237 (38%) said no.

Discussion

COVID-19 and the lockdown resulted in increased anxiety and higher stress levels amongst the general

Table 8. Affordability of the Webinars, Duration of Lectures, and Usefulness of Recorded Versions of Webinars

	n=237	%
Q) Was the access to the online lectures/webinars affordable?		
Less expensive	100	42
Equally expensive	117	49.3
More expensive	20	9
Q) Number of hours spent attending the lectures/webinars in a day?		
30-45 min	19	8.4
1-2 hours	94	8
3-4 hours	124	52.3
Q) Do you experience any difference between online and offline modes of teaching?		
Yes	231	97.4
No	6	2.53
Q) Were recorded versions of webinars/lectures helpful for you?		
Yes	123	51.8
No	38	16
Not sure	76	32
Q) Were online classes and webinars during this lockdown period useful?		
Yes	170	71.7
No	35	14.7
Not sure	32	13.5
Q) Will you participate in any future webinars post-COVID?		
Yes	147	62
No	90	38

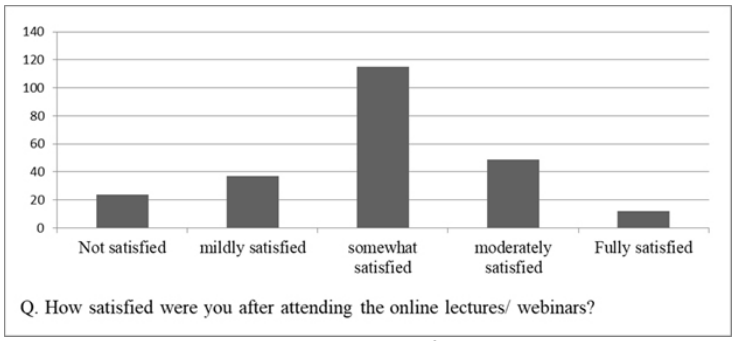

Figure 3. Graphical representation of student's response to the satisfaction level after attending online lecture.

population, with optometry trainees throughout India having increased anxiety and stress levels due to the disruption in their optometric training and learning programs.[15] The results of this study demonstrate the benefits and difficulties faced by the students with e-learning during the COVID-19 outbreak. A substantial percentage of respondents actually reported experiencing technical difficulties when using e-learning platforms.

Table 9. Webinars Attended by Students in the Past Six Months

Webinars	n=237	Percentage (%)
Cybersight	70	29.5
Eye Gurukul	21	8.86
Contact lenses webinars	20	8.43
Vitreo-retinal diseases	18	7.59
IOA	16	6.75
IVI	15	6.32
Low vision webinars	14	5.90
Squint and BV webinars	13	5.48
OCI	11	4.64
Elsevier Research Academy	11	4.64
The World of Optometry	10	4.21
OOLS	10	4.21
Mental health webinars	5	2.10
Others	3	1.26

The vital issue for all students is to address their professional life with the pandemic. A survey conducted by Deepak et al.[15] stated that 47.2% of the trainees reported that the lockdown had a negative impact on their theoretical/classroom learning. Another study by Balhareth et al.[16] examining residents and fellows across all specialties found that 84.6% reported a reduction in training activities due to the pandemic. In our survey, we found that due to the pandemic, a large majority (94.09%) agreed that their training program was affected. In addition, 87.7% of the students felt that the lockdown had a negative impact on their theoretical/classroom learning.

The conventional mode of education, face-to-face, ended due to the norms of social distancing. Due to the physical closure of educational institutions, the majority of teaching and learning processes went online. Ninety-seven percent of all respondents claimed that their onsite classes had been cancelled and substituted with online lectures by their colleges and universities in the form of online video conferences, sending presentations to students, and written communication. The trend for theoretical content shifted from traditional lectures to interactive online lectures using video conferencing tools. Educators are now using a wide variety of online programs and apps to continue with their teaching. Students have also emerged as active participants in e-learning surroundings.[12] The online learning experience is considerably distinct from that of conventional traditional lecture learning, and as an end result, it is necessary to identify the specific unique skills required for not only using the

platform available for e-learning but also the salient features of e-learning.[17,18] The vital needs required for including the new technologies for ophthalmic training has been emphasized by Ferrara et al.[19] Technology-based tools, such as web-based teaching, virtual simulators, and telemonitoring, are required to maintain continuity and effectiveness of training.

According to the Annual Status of Education Report (ASER) survey, the availability of smartphones in rural India was 36.5% in 2018, which increased to 61.8% in 2020 and 67.6 % in 2021.[20] Further, about 77.2% of the students reported that they used a smartphone, while 19.4% had laptops to attend the lectures. A study by Alsoufi et al[21] reported the importance of smartphones for attending online lectures. Our results support the basic requirement of smartphone applications that help to provide access to online medical education lectures and learning. The finding focuses on the need to offer informative sessions through numerous tools on smartphones, as most students use their phones more than their laptops.[21]

Our findings indicate that students found it difficult to conform to an online learning platform quickly after traditional classroom learning ceased. Students who had been continually studying in the conventional classroom found it difficult to focus on online platform systems. Students faced some challenges related to internet connection issues, poor technical support, and failure to organize learning times.[22] Many students felt that they were not well-equipped with a high-speed internet connection which was required for online learning. A good internet connection is a key element in efficient online learning.[23-25] Because of network issues, students faced difficulties in attending live sessions; 79% faced internet and connectivity issues. They also faced technical issues, as not many students were aware of technology and computer applications used.

During the lockdown, most of the students were able to continue accessing lectures, especially those with downloadable or recorded versions. Some webinar software enabled the online recording of lectures that could be accessed in the future, which 51.8% reported as being useful. Providing lectures for later access was an important learning feature for students. Mishra et al.[26] stated that regardless of the year in school, trainees and students found the webinars they attended to be useful for theoretical, practical, and surgical knowledge. Our survey showed similar results; 71.7% of the respondents reported webinars being conducted as beneficial.

Deepak et al.[15] stated that medical conferences and meetings are a traditional part of medical training and continuing education. Our study found that many students attended numerous webinars conducted by various organizations. Many students sought to take advantage of these virtual conferences, and the organizations permitted most students/fellows to participate not just as attendees, but as presenters as well.[24] Suggestions to improve online e-learning includes hands-on experiences or practical trainings, live polls, and quizzes. This will provide an indicator of how much the students have learned,[27,28] post-class assessment and follow-up webinars for discussion, and access to saved online classes. Further surveys must study the effectiveness of technology-based teaching in ophthalmological and optometric training.

Conclusion

The aim of this research was to examine the effect of the shift from face-to-face learning to online distance learning due to COVID-19 lockdown one-year post-lockdown. This study found that universities offered the required tools and platforms to initiate online lectures during the pandemic. The results of this study showed that one year later, students were still facing difficulties in adapting to the online mode of education. The survey highlights the need to upgrade the e-learning experience of the webinars for the students.

The pandemic has changed the educational system and how students learn. Many new approaches and developments are further required to increase the efficiency of online learning. As future health emergencies are likely to occur, concerned authorities and leaders should understand how this will have effect on students presently studying to provide a safe environment. Thus, this will help to construct a plan for efficacious e-learning and find technology to be an important new transformation.

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References

1. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. Lancet 2020;395:470-3.
2. Xia J, Tong J, Liu M, Shen Y, Guo D. Evaluation of coronavirus in tears and conjunctival secretions of patients with SARS-CoV-2

infection. J Med Virol 2020. doi: 10.1002/jmv. 25725.
3. Coronavirus disease 2019. World Health Organization -Published 2020. Available from https://www.who.int/emergencies/diseases/novel-coronavirus-2019 Last Accessed January 26, 2023.
4. Khanna RC, Honavar SG. All eyes on Coronavirus—What do we need to know as ophthalmologists. Indian J Ophthalmol 2020;68:549-53.
5. Coronavirus disease (COVID-19) pandemic. World Health Organization. Available from https://www.bbc.com/news/world-asia- india-52024239 Last Accessed March 3, 2020.
6. Jagannath J. Lockdown extended till 17 May: What will open, remain closed. Mint, May 1, 2020. Available from https://www.livemint.com/news/india/lockdown-extended-till-17-may-what-will-open-remainclosed-11588340829516.html Last Accessed May 12, 2020.
7. Hom GG, Chous AP. The prospect of pandemic influenza: Why should the optometrist be concerned about a public health problem? Optom Am Optom Assoc 2007;78:629-43.
8. Nair AG, Gandhi RA, Natarajan S. Effect of COVID-19 related lockdown on ophthalmic practice and patient care in India: Results of a survey. Indian J Ophthalmol 2020;68:725-30.
9. Bhat R, Singh VK, Naik N, Kamath CR, et al. COVID 2019 outbreak: The disappointment in Indian teachers. Asian J Psychiatry J 2020;(March). doi:https://doi.org/10.1016/j.ajp.2020.102047
10. UGC Guidelines: UGC issues new calendar for universities; 2020-21 session to begin from Aug 1. https://timesofindia.indiatimes.com/home/education/news/ugc-issues-new-calendar-for universities-2020-21-session-to-begin-from-aug-1/articleshow/75453706.cms.
11. Ross DA. Creating a "Quarantine Curriculum" to enhance teaching and learning during the COVID-19 pandemic. Academ Med 2020: Epub 2020/04/15. https://doi.org/10.1097/ACM.0000000000003424 PMID: 32744816
12. Rajhans V, Memon U, Patil V, Goyal A. Impact of COVID-19 on academic activities and way forward in Indian Optometry. J Optom 2020;13:216-26.
13. Shah S, Diwan S, Kohan L, Rosenblum D, et al. The technological impact of COVID-19 on the future of education and health care delivery. Pain Physician 2020;23:S367-80.
14. Sehgal S, Shinde L, Madheswaran G, Mukherjee P, et al. Impact of COVID-19 on Indian optometrists: A student, educator, and practitioner's perspective. Indian J Ophthalmol 2021;69:958-63.
15. Mishra D, Nair AG, Gandhi RA, Gogate PJ, et al. The impact of COVID-19 related lockdown on ophthalmology training programs in India – Outcomes of a survey. Indian J Ophthalmol 2020;68:999-1004.
16. Balhareth A, Al Duhileb MA, Aldulaijan FA, Aldossary MY. Impact of COVID-19 pandemic on residency and fellowship training programs in Saudi Arabia: A nationwide cross-sectional study, Ann Med Surg 2020. doi: https://doi.org/10.1016/j.amsu.2020.07.025.
17. Li F, Qi J, Wang G, Wang X. Traditional classroom vs e-learning in higher education: Difference between students' behavioral engagement. Int J Emerg Technol Learn 2014;9:48-51.
18. Zhang D, Zhao JL, Zhou L, Nunamaker JF Jr. Can e-learning replace classroom learning? Commun ACM 2004;47:75-9.
19. Ferrara M, Romano V, Steel DH, Gupta R, et al. Reshaping ophthalmology training after COVID-19 pandemic. Eye (Lond) 2020;34:2089-97.
20. Iftikhar F. 27.9% rural households bought smartphone for kids' studies amid pandemic: Survey. Hindustan Times, New Delhi. Available from www.hindustantimes.com/india-news/279-rural-households-bought-at-least-one-smartphone-for-kids-studies-amid-pandemic-aser-survey-101637175238326.html Last Accessed January 26, 2023.
21. Allsoufi A, Alsuyihili A, Msherghi A, Elhadi A, et al. Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. PLoS ONE 2020;15(11): e0242905. https://doi.org/10.1371/journal. pone.0242905
22. Ghaith Abdulsattar A, Alkubaisi J, Al-Saifi NS, Al-Shidi AR, Al-Shukaili ZS. The quality of selected online learning platforms and their effect on education in the Sultanate of Oman. Ed Res 2021; Article ID 2570377 https://doi.org/10.1155/2021/2570377.
23. Owusu-Fordjour C, Koomson CK, Hanson D. The impact of COVID-19 on learning—The perspective of the Ghanaian student. Eur J Educ Stud 2020;7:1-14.
24. Adnan M, Anwar K. Online learning amid the COVID-19 pandemic: Students' perspectives. J Pedagog Sociol Psychol 2020:2.
25. Baloran ET. Knowledge, attitudes, anxiety, and coping strategies of students during COVID-19 pandemic. J Loss Trauma 2020: 1-8.
26. Mishra D, Nair AG, Verma L, Grover AK, et al. The perceived impact of webinars during the COVID 19 pandemic: A survey of ophthalmology trainees from India. Oman J Ophthalmol 2021;14(2):78-84.
27. Huang B, Hew KF, Lo CK. Investigating the effects of gamification-enhanced flipped learning on undergraduate students' behavioral and cognitive engagement. Interactive Learning Env 2019a;27(8):1106-26.
28. Seaborn K, Fels DI. Gamification in theory and action: A survey. Int J Human-Comp Stud 2015;74:14-31.

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Appendix

1) What is your name? _____

2) What is your age? _____

3) Gender: M/F

4) Which training program are you currently enrolled in:
   a. Bachelors of Optometry
   b. Masters of Optometry/Masters in Philosophy
   c. Fellowship
   d. Diploma in optometry

5) In which year of training are you currently? _____

6) What is the nature of your institute?
   a. Optometry Educational Institute
   b. All-speciality medical hospital and Institute
   c. Eye hospital and Optometry College

7) What is the funding source of your present institute?
   a. Government
   b. Private
   c. Partly government owned
   d. Other

8) Name of the institute? _____

9) How do you spend time during the lockdown?
   a. 2 hours/day
   b. 4 hours/day
   c. COVID duty
   d. Hospital duty
   e. Indoor games
   f. Web series/movies
   g. Social media
   h. Studies
   i. Other

10) Did the COVID-19 lockdown affect your daily routine?
   a. Yes
   b. No

11) How do you think the COVID-19 lockdown has affected your stress levels?
   a. Increased
   b. Decreased
   c. No effect

12) What is your general state-of-mind during the lockdown?
   a. Happy
   b. Unhappy

13) .Did your family members express concern for your safety during this COVID-19 lockdown?
   a. Yes
   b. No
   c. Not sure

14) Do you think this lockdown has affected your training?
   a. Yes
   b. No
   c. Not sure

15) If yes, how much of a negative effect do you think the lockdown has had on your training?
   a. <25%
   b. 25-50%
   c. 50-75%
   d. >75%

16) Do you think this lockdown has affected your theoretical learning / classroom training?
   a. Yes
   b. No
   c. Not sure

17) If yes, how much of a negative effect do you think the lockdown has had on your theoretical learning/classroom training?
   a. <25%
   b. 25-50%
   c. 50-75%
   d. >75%

18) Were your college/ university faculties taking online classes / lecture?
   a. Yes
   b. No

19) What were the devices used to attend the lectures/ webinars?
   a. Mobile phone
   b. Computers
   c. Laptops
   d. Tablets

20).Which online web platforms were used for conducting lectures/ webinars?
   a. Google meet
   b. Zoom cloud meeting
   c. Webex meeting
   d. Gotomeeting
   e. Microsoft teams
   f. Hangout
   g. Skype
   h. Youtube
   i. WhatsApp
   j. Google classroom

21) Did you have any difficulties while gaining access towards the platforms?
   a. Yes
   b. No

If yes, what were the difficulties_____
_____
_____

22) .Did you use the internet for Optometry learning effectively during the lockdown period?

a. Yes
b. No
c. Not sure

23). Did you have internet Network issues, while attending Online webinars/ lactures?

a. Yes
b. No

24) Was the access to the online lectures/webinars affordable?

a. Less expensive
b. Equally expensive
c. More expensive

25) Number of hours spent to attend the lectures/webinars in a day?

a. 30-45 min
b. 1-2 hour
c. 3 -4 hour

26) How satisfied were you after attending the lecture/webinar?

0 1 2 3 4 5

Not satisfied at all Completely satisfied

27) Do you experience a difference between online and offline mode of teaching?

a. Yes
b. No

28) Were recorded versions of webinars/lectures helpful for you?

a. Yes
b. No
c. Not sure

29)Were online classes and webinars during this lockdown period useful?

a. Yes
b. No
c. Not sure

30).Will you participate in a future webinar POST COVID?

a.Yes
b. No

IF YES (mention the reason for participation) _____

_____

_____

31) Have you attended any online webinars in past 6 months?

a. Yes
b. No

If YES, please specify_____