



## COVID-19 and its Impacts on Academic, Clinical and Research Activities and Changes in Social Life of Optometry Students in Pakistan

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### Abstract

**Objective:** The objective of this study was to know about the impact of corona virus outbreak on the academic, clinical and research activities of optometry students in Pakistan and changes in their social life.

**Materials and Methods:** A cross sectional survey was designed to find the changes in daily academic and clinical activities of optometry students during the lockdown period due to corona virus. As majority of institutions closed due to the pandemic, therefore an online survey was conducted to assess e- learning methods being used, student's satisfaction with the teachers and teaching methods, availability of internet and studying infrastructure and changes in their social life.

**Results:** A total of 163 students participated in the online survey. 85 of them were male and 78 were female. 63 (38.7%) students were satisfied with online learning while 100 (61.3%) students were unsatisfied. According to 53 (32.5%) students their study workload has decreased, 67 (41.1%) said their study workload has increased. 43 (26.4%) thinks there's no change in their study workload. 78 (47.9%) students have proper access to online studying infrastructure while 85 (52.1%) don't. 88 (54.0%) students have enough skills to operate computer software. 90 (55.2%) students were satisfied with the measures taken by their institutions for online learning. 123 (75.5%) students were using zoom, 32 (19.6%) students were using Google meet and 8 (4.9%) were using other software for online learning. 107 (65.6%) students weren't able to carry their routine clinical and practical work while 56 (34.4%) were carrying their routine work. About 62 (38.0%) students were offered alternatives regarding their lab or clinical work while 101 (62.0%) weren't offered any alternative. 84 (51.5%) students were satisfied with online assessment and examination methods while 79 (48.5%) students weren't satisfied. Research work of 40 (24.5%) students was affected. In step with 39 (23.9%) students their social life wasn't affected in the slightest degree while consistent with 61 (37.4%) students partially affected and in step with 63 (38.7%) their social life was affected badly.

**Conclusion:** The COVID-19 outbreak is proving to be a positive disruptor offering an impetus to restructure the prevailing traditional establishment supported classrooms. The fast transfers to the web mode helped to preserve the consistency of optometry education services, efficiently fitting into this educational year's completion target. Not only did the dramatic shift to online education advantage optometry students, but this also created strength for continuing education for optometrist practice within the nation.

**Keywords:** Clinical and Research Activities; Students in Pakistan; Social Life of Optometry Students

### Introduction

Corona virus disease (COVID-19) is caused by a recently discovered corona virus, a communicable disease. Many COVID-19

compromised individuals undergo mild to severe respiratory failure and rebound without special care [1]. Aged individuals are possibly to possess acute diseases for those with ongoing medical con-

ditions like coronary disease, asthma, chronic respiratory illness, and cancer. Being well educated of the COVID-19 virus, the illness it causes, and the way it progresses, is the safest way to deter and cut down transmission. By washing your hands or using an alcohol free rub regularly and not rubbing your skin, shield yourself from infection. When an infected person coughs or sneezes, the COVID-19 virus spreads mainly by droplets of saliva or discharge from the nose, so it's crucial that you simply also exercise respiratory etiquette (for example, through coughing into a flexed elbow) [2].

Stay healthy by taking certain basic steps, like physical distancing, wearing a mask, keeping rooms well ventilated, stopping crowds, washing your face, and coughing into a bent elbow or tissue, if COVID-19 is circulating throughout your culture [3]. Check where you reside and work for local advice. To decrease the prospect of illness as they cough, sneeze or chat, maintain a minimum of a 1-metre gap between yourself and others. When inside, maintain a far greater gap between yourself [4].

The first case of corona virus in Pakistan was registered in Karachi on February 26, 2020. WHO announced the outbreak of corona virus as the sixth public health emergency of international significance on 30th January [5]. The corona virus was declared a deadly disease by WHO on March 11, 2020. Since most of the industries are packed up by the government because of the crisis, educational institutions are also closed across Pakistan on March 2020 [6]. Within the government's efforts to counter the spread of corona virus, all schools, colleges and other religious establishments are closed with immediate effect [7]. Because the optometry schools and colleges offering numerous optometry courses are also closed and therefore the educational process stopped without delay across the state because there is no proper online education mechanism within the world and at that point the tutorial institutions aren't equipped for online education so educational institutions suspended their activities on emergency basis in the first response. As there is no solution present at the time, several students are affected round the world. On March 24, in several regions of the globe, a lockout was enforced. On the premise of the cases mentioned, a variety of strict restrictions are placed in various areas of the country [8]. In the midst of the present crisis, the Pakistan's higher education commission urged instruction institutions to brace themselves for the internet education system to scale back the effect of corona virus on the tutorial community [9]. So, some weeks later, after preparations, online courses began at universities. This is the primary online education experience for the bulk of scholars and institutions before any schooling. The scholars and

teachers are also influenced. There are many disparities as school practices began online again, including contact gaps between students and teachers. Clinical and scientific programs are also influenced alongside scholarly activities specifically students from the final year who completed clinical rotations and did internships at numerous teaching hospitals [10]. Students who are doing certain types of research studies are also impacted as they are facing difficulties in collecting the information needed for research work and difficulties in conducting surveys.

**Materials and Methods**

An online questionnaire was designed consisting of 15 questions. The aim and use of information for research purpose was briefly explained at the start of the questionnaire. The web questionnaire was developed on Google forms. The link of the web Google form questionnaire was shared with the students of various universities across the country. Major participants were from the University of Lahore, Superior University Lahore and College of ophthalmology and allied vision sciences, Mayo Hospital Lahore. Students were asked to aim the questionnaire and to share it with fellow colleagues so it could reach to maximum students. A complete of 163 students participated in the research Data collection was done employing a spread sheet linked to online Google questionnaire. Sample size was calculated to be 163 participants as a minimum number of participants. Data collection was done during the time period of October 1, 2020 to January 31, 2021. Data were transmitted and scrutinized by utilizing SPSS version 25. Illustrative statistics were introduced as sum up and percentages to condense the collected data.

**Results**

A total of 163 students from different universities of Pakistan participated. 85 (52.1%) of them were male and 78(47.9%) were female.

Gender Distribution	
Male	85
Female	78

Gender of student					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	85	52.1	52.1	52.1
	Female	78	47.9	47.9	100.0
	Total	163	100.0	100.0	

**Table 1**

**Satisfaction of students about online learning**

Out of 163, 63 students were satisfied with online learning and 100 students was not satisfied with online learning. Percentages of students who were satisfied and not satisfied according to current data are 38.7% and 61.3% respectively.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	63	38.7	38.7	38.7
	no	100	61.3	61.3	100.0
	Total	163	100.0	100.0	

**Table 2**

**Changes in study workload**

Out of 163 participants, 53 (32.5%) students stated that their study workload decreased while according to 67 (41.1%), study workload has increased. 43 (26.4%) stated that there is no change in study workload.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Decreased	53	32.5	32.5	32.5
	Increased	67	41.1	41.1	73.6
	no change	43	26.4	26.4	100.0
	Total	163	100.0	100.0	

**Table 3**

**Access of students to studying infrastructure.**

78 (47.9%) out of 163 students have proper access to studying infrastructure like computer, required software for online learning and internet connection availability while 85 (52.1%) have no proper access to these facilities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	78	47.9	47.9	47.9
	no	85	52.1	52.1	100.0
	Total	163	100.0	100.0	

**Table 4**

**Student’s skills to operate computer software**

88(54.0%) students have enough skills to operate computer software while 75(46.0%) out of 163 students don’t have proper skills to operate computer software required for online learning.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	88	54.0	54.0	54.0
	no	75	46.0	46.0	100.0
	Total	163	100.0	100.0	

**Table 5**

**Satisfaction of students with measures taken for online teaching by their institution.**

Out of total 163 students, 90(55.2%) students were satisfied with measures taken by their institution regarding online classes while remaining 73(44.8%) students were not satisfied with the measures taken.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	90	55.2	55.2	55.2
	no	73	44.8	44.8	100.0
	Total	163	100.0	100.0	

**Table 6**

**Software for online learning**

Different software are being used for academic activities in different universities. Most commonly used software according to 123 (75.5%) students are zoom and according to 32 (19.6%) students they are using Google meet. 8 (4.9%) students stated that they are using other tools for learning instead of commonly used zoom and Google meet.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Zoom	123	75.5	75.5	75.5
	Google meet	32	19.6	19.6	95.1
	Other	8	4.9	4.9	100.0
	Total	163	100.0	100.0	

**Table 7**

**Routine clinical and practical work**

This question was about the clinical and practical work of students. 54 (34.4%) students were able to carry out their clinical or practical work in routine while 107 (65.5%) students were not able to carry out their work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	56	34.4	34.4	34.4
	No	107	65.6	65.6	100.0
	Total	163	100.0	100.0	

Table 8

**Alternatives regarding lab or clinical work.**

Due to coronavirus there are many restrictions and difficulties about clinical and lab work. Responding to a question about any alternatives for clinical works 62(38%) out of 163 respondents stated that they are provided alternatives about this while 101(65.5%) stated that they are not provided any alternative about clinical work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	62	38.0	38.0	38.0
	No	101	62.0	62.0	100.0
	Total	163	100.0	100.0	

Table 9

**Satisfaction of students about online assessment and examination methods**

Out of 163(100%), 84(51.5%) students showed their satisfaction about this matter while remaining 79(48.5%) were not satisfied with online assessment and examination methods.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	84	51.5	51.5	51.5
	No	79	48.5	48.5	100.0
	Total	163	100.0	100.0	

Table 10

**Effect on research work of final year students.**

This was an optional question. Only final year research students were asked for their opinion. 40 students stated that current situation has affected their research work while 19 said that there is no effect on their research work in this situation.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes affected	40	24.5	59.7	59.7
	not affected	19	11.7	28.4	88.1
	not a research student	8	4.9	11.9	100.0
	Total	67	41.1	100.0	
Missing	System	96	58.9		
Total		163	100.0		

Table 11

**Extent up to which research work got affected**

This question was related to the students who were doing some research work. 15(9.2%) students think their research work has completely stopped due to current situation while 24(14.7%) stated that they are facing difficulties in data collection. 59(36.2%) out of 163(100%) attempted this question who were doing some sort of research work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	completely stopped	15	9.2	25.4	25.4
	difficulties in data collection	24	14.7	40.7	66.1
	not affected at all	20	12.3	33.9	100.0
	Total	59	36.2	100.0	
Missing	System	104	63.8		
Total		163	100.0		

Table 12

**Student’s satisfaction with their research supervisors in current situation**

Out of 163 (100%) participants, 56 (34.4%) students attempted this question. 36 (22.1%) students showed their satisfaction about their research supervisors while 20 (12.3%) showed dissatisfaction about their research supervisors. Remaining 107 (65.6%) missing students were not doing any research work.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	22.1	64.3	64.3
	No	20	12.3	35.7	100.0
	Total	56	34.4	100.0	
Missing	System	107	65.6		
Total		163	100.0		

Table 13

**Impact on social life**

This question was asked to know about the impact of coronavirus on the social life of the students. All of 163 students, 39 (23.9%) students stated that there is no effect on their social life at all. 61 (37.4%) thinks their social life is partially affected while remaining 63 (38.7%) stated that their social life got affected badly.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not affected at all	39	23.9	23.9	23.9
	partially affected	61	37.4	37.4	61.3
	affected badly	63	38.7	38.7	100.0
	Total	163	100.0	100.0	

Table 14

**Discussion**

The entire world has faced difficult problems with its education infrastructure following the onset of the corona virus disease pandemic. Students in teaching were severely impacted, too. This point was certainly challenging for college students and was very volatile because the classes on campus were transferred to online classes. With none prior experience of that sort, it absolutely was tasking to transition to the internet system. In these conditions, it had been also important to research thoroughly how the pandemic has impacted the optometry students in Pakistan and what the implications of this scenario are on them. This research draws together evidence on how the corona virus has impacted students' academic and social lives. In our report, we wanted to explain the improvements within the students' academic, clinical and research practices, additionally, the social elements were also considered.

So as to induce to grasp if the research load has increased or decreased changes within the workload were first studied. The study of Aleksander Aristovnik, *et al.* also contrasted students' abilities to work online learning resources and have access to sufficient study infrastructure [11]. According to that survey, slightly but half the respondents indicated that their workload had been greater or substantially greater within the current learning environment when evaluating the workload before the transition from on-site to online. In Oceania and Europe, the very best changes in workload are recorded and also the smallest in Asia and Africa, both presumably because of the underdeveloped Internet network and also the shortage of computer skills [12]. However, particularly areas of the planet, we cannot attribute all negative effects to the degree of growth of digital technology and skills, since learning isolated online reception can raise many challenges [13]. While 32.5 percent of respondents claim their test workload has declined within the current survey, about 41.1 percent of respondents said their analysis workload has increased. 47.9 percent of respondents have adequate access to the web research infrastructure in the current study, while 52.1 percent of respondents said they do not have adequate access to the web study framework.

In this research, the extent of use of online learning resources was near that recorded by India's Vidyut Rajhans, Usman Memonb, Vidula Patil c, and Aditya Goyal [14]. during this survey, 66 out of 70 respondents said they were using live video conferencing software, while 123 out of 163 responses preferred rivet this study and 32 respondents selected google meetings. All of these methods are the identical as video conferencing online. 36 out of 56 respondents were pleased with their research supervisors in the current report, while 20 were unsatisfied. We compared these findings to a related query from the Aleksander Aristovnik, *et al.* study [15]. Their survey findings indicate that the students were the foremost pleased with the teaching staff's assistance, irrespective of the continent; overall, 57.6 percent of students were satisfied or very satisfied (78.8 percent of the most effective ranking Oceania, 33.2 percent of the bottom Africa). For finance and accounting, 30.2 percent (the lowest-ranked Africa -21.1 percent) and foreign departments, 26.0 percent (the lowest-ranked Africa -13.6 percent) were all-time low satisfaction rate with the support. The Philippines ranked at the underside of teaching staff satisfaction, which is aligned with a study during which nearly 94% of students reported inadequate contact with the teaching staff. In many researches, many negative feelings like annoyance, boredom, fear, confusion, resentment, etc.



are triggered by the dearth of one's normal everyday routine yet as diminished social and physical interaction with others (including social distancing measures) [16]. The bulk of students were interested by the COVID-19 pandemic and thus the resulting physical closing of upper education institutions during a condition unaccustomed them. They lived in places of differing situations during the time of closure and had different opportunities to remain their social life as near 'normal' as possible. Some were at increased risk of social alienation and also the resultant emergence of mental state problems, e.g. those who lived alone within the period [17].

In our report, 23.9 percent of scholars claimed that their social life has not been influenced by the present situation, while 37.4 percent of scholars stated that their social life has been slightly affected and 38.7 percent claim that their social life has been badly plagued by this lockout situation and shutting of the institution. When comparing these findings of our research with Aleksander Aristovnik, *et al*, who reported that in the COVID-19 pandemic, students were asked about the extent of their online contact with real individuals [18]. Students connect online a minimum of once each day on a worldwide basis with: (1) Close members of the family (52.0%)-mainly Asian and European students; (2) someone with whom they reside, e.g. a roommate (47.8%), as recorded predominantly by students from Oceania and North America; or (3) social networks (45.8%)-mainly students from South and North America. Online contacts with university administrative personnel (2.8 percent) and charitable associations (3.7 percent) were the smallest amount frequent; rock bottom shares were detected in both Americas in both cases [19]. During the time of closure of the upper education institution, the influence of socio-demographic influences on the self-assessment of social life was generally the identical as for many other aspects/elements included within the survey, apart from the extent of research where first-level (undergraduate) students more frequently contacted their close friends and for online networking, they focused on social networks instead of second-level (postgraduate) students. Since social reinforcement is important for the mental wellbeing of scholars of higher education, during a period of alienation and/or quarantine, it should be adequately provided and punctiliously maintained [20].

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