

Post-lockdown challenges for ophthalmologists during COVID-19 pandemic in India: A survey-based analysis

Madhav Goel, Sonu Goel¹, Mahipal Singh Sachdev², Namrata Sharma³, Deepak Mishra⁴, Gautam Yadav⁵, Nabanita Barua⁶, Sulakshna Aggarwal

Purpose: The purpose of this study is to evaluate the post-lockdown challenges during Coronavirus disease 2019 (COVID-19) pandemic amongst the ophthalmologists in India. **Methods:** An online survey was sent to the practicing ophthalmologists across India. Data were collected from the responding ophthalmologists and analysed using Medcalc 16.4 software. **Results:** A total of 794 responses were obtained. Most respondents (51%) were in the age group 30–50 years and were in independent practice (40.05%). Almost three-fourth of ophthalmologists resumed their surgical services after a gap of more than a month post-lockdown. Almost a third of the respondents had significant reduction in their surgical workload during this period. Significant fear of contracting COVID-19 infection in the operation theatres was reported while moderate difficulty was found in procuring protective gear during immediate post-national lockdown period. **Conclusion:** The pandemic has changed the ophthalmic practice significantly, with patient and staff safety becoming areas of major concern. Both financial and psychological concerns affecting healthcare workers need addressing for continued patient care.

Key words: COVID-19, challenges, India, post-lockdown, ophthalmology, survey

Access this article online

Website:

www.ijo.in

DOI:

10.4103/ijo.IJO_3550_20

Quick Response Code:



A global pandemic caused by the Coronavirus disease 2019 (COVID-19) was reported to arise in the city of Wuhan in Mainland China with cluster of patients presenting with pneumonia like illness and symptoms resembling severe acute respiratory syndrome or SARS.^[1]

The first case of COVID-19 in India was reported on January 30, 2020, in the State of Kerala. The number increased initially at a slow pace but in the month of March, an exponential rise in number of cases of COVID-19 was noted.^[2] India with a population of more than 1.3 billion adopted various preventive measures like banning international travel, contact tracing of the infected and nation-wide lockdowns which were extended in phased manner.^[3,4]

The national lockdown which was imposed in India from March 23 to May 31 affected the healthcare sector including the ophthalmic care immensely.^[5] Patients were not able to visit outpatient departments for a variety of reasons including restricted movement, lack of availability of public transport and fear of getting infected with COVID-19. The

healthcare providers, hospitals and nursing homes also restricted their services and deferred the routine and elective care.

This survey-based study was undertaken to evaluate the challenges faced by ophthalmologists following the national lockdown period.

Methods

The survey-based study, done in collaboration with All India Ophthalmological Society (AIOS), was conducted using an online Google doc form, which was sent through AIOS to its over 20,000 members across India between June 8, 2020, and September 6, 2020, via e-mail. The protocol was approved by the Swastic Ethics Committee, Jaipur, and adhered to the tenets of Helsinki Declaration. The self-administered anonymised questionnaire consisted of questions designed to evaluate the challenges faced by the ophthalmologists immediately following the lockdown period in their respective practice areas in various parts of India. The questions covered various parameters including demographic details, type of practice, challenges faced post-lockdown and economic implications (Annexure 1).

All categorical/nominal variables were presented as proportions (%). Association of independent categorical/nominal variables with challenges was analysed using

Maulana Azad Medical College, New Delhi, ¹Senior Consultant Department of Ophthalmology, Anand Hospital and Eye Centre, Jaipur, Rajasthan, ²President AIOS, Chairman, Centre for Sight Group of Eye Hospitals, New Delhi, ³Secretary AIOS, Professor, RP Centre, AIIMS, New Delhi, ⁴Associate Professor, BHU, Varanasi, Uttar Pradesh, ⁵Consultant, Anand Hospital and Eye Centre, Jaipur, Rajasthan, ⁶Department of Ophthalmology, Purulia Govt Medical College and Hospital, Purulia, West Bengal, India

Correspondence to: Dr. Sonu Goel, Senior Consultant Phacorefractive Surgeon, Department of Ophthalmology, Anand Hospital and Eye Centre, Anand Hospital and Eye Centre, 21 Bharat Mata Lane, Jamna Lal Bajaj Marg C Scheme Jaipur, Rajasthan, India. E-mail: drsonugoel@gmail.com

Received: 29-Nov-2020

Revision: 12-Jan-2021

Accepted: 23-Feb-2021

Published: 16-Mar-2021

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Cite this article as: Goel M, Goel S, Sachdev MS, Sharma N, Mishra D, Yadav G, *et al.* Post-lockdown challenges for ophthalmologists during COVID-19 pandemic in India: A survey-based analysis. Indian J Ophthalmol 2021;69:946-50.

Chi-square test; P value < 0.05 was taken as significant. Medcalc 16.4 software was used for all statistical calculations.

Results

A total of 794 completed responses were obtained during the study period. The information collected was tabulated and analysed as below.

Demographics and background

A percentage of 51.7 of respondents were in 30–50 years of age group while 32.3% were more than 50 years of age; the remaining 16% respondents belonged to 20–30 years of age group [Fig. 1]. While most of the respondents were independent private practitioners (40%), 16.8% were from the medical colleges or teaching institutions, 9.07% were part of group practice, 8.1% were working in government hospitals, 4.6% in corporate hospitals and 1.5% were pursuing ophthalmology courses, respectively [Table 1].

Seven hundred and eleven participants (89.7%) were cataract surgeons, 34.4% were glaucoma specialists and 28.5% were cornea and refractive surgeons. Other specialists included vitreo-retinal (11.9%), oculoplasty (10.7%), paediatric ophthalmology (7.4%) and strabismus (7.8%) surgeons.

Post-lockdown effects on clinical ophthalmic practice

Post-lockdown, 14% of the respondents had started operating within 2 weeks while 11% took 3 weeks and 75.2% took more than a month to do so. Asked about future prognostication of normalcy, most believed that it would take 3–6 months (34.3%) or even more (36.1%) [Fig. 2].

Seventy-three per cent respondents felt that post-lockdown, intraoperative surgical time had increased, while 27.6% felt that there was no change. Also, during the same period, 55.54% of participants did not feel completely satisfied with the quality of their surgical procedures, as against 44.46% who were satisfied. A percentage of 28.8 of the former group elaborated that they were not comfortable with new standard operating protocols, 22.1% felt that the patients were not comfortable with masks while 25.2% were apprehensive to start the operative procedures [Fig. 3].

During the surgery, around two-thirds (64.6%) of surgeons were using N95 respirator while 25% were using three-ply surgical masks. The mask provided to the patient during the surgery were three-ply surgical masks by the majority (75.3%) while cloth masks were provided by 11% and N95 only by

9.6%. A percentage of 11.5 of responders reported higher rate of surgical complications as compared to 87% who did not observe any change. Prime investigations performed included X-ray chest (22.3%) and reverse transcription polymerase chain reaction (17.8%), while majority (51%) of participants curtailed additional pre-operative investigations.

Administration of Likert scale (one signifying least difficulty/least concerns while five signifying most difficulty/most concerns) showed moderate difficulty in procuring

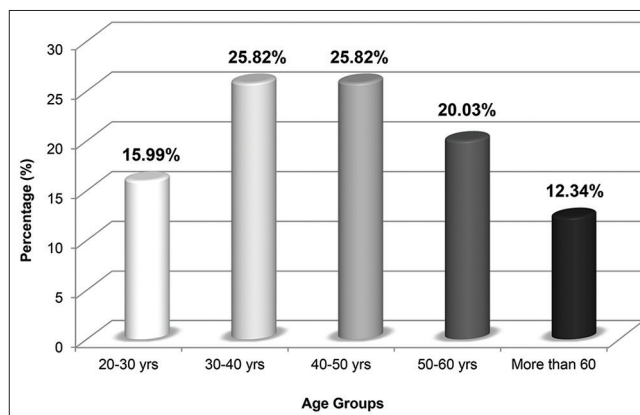


Figure 1: Age distribution of respondents

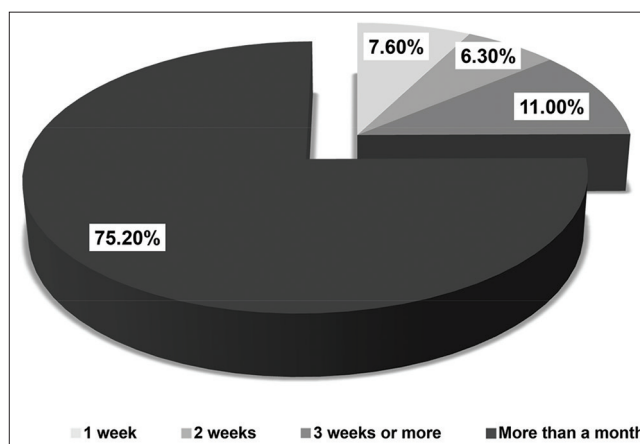


Figure 2: Post-lockdown time gap before resuming surgical procedures

Table 1: Type of ophthalmic practice

Type of practice	No.	%
Charitable hospital	74	9.32
Corporate hospital	72	9.07
Government hospital	65	8.19
Group practice	72	9.07
Medical college/teaching institution	134	16.88
Multi-speciality hospital	37	4.66
Postgraduate resident	12	1.51
Independent practitioner	318	40.05
Others	10	1.26
Total	794	100.00

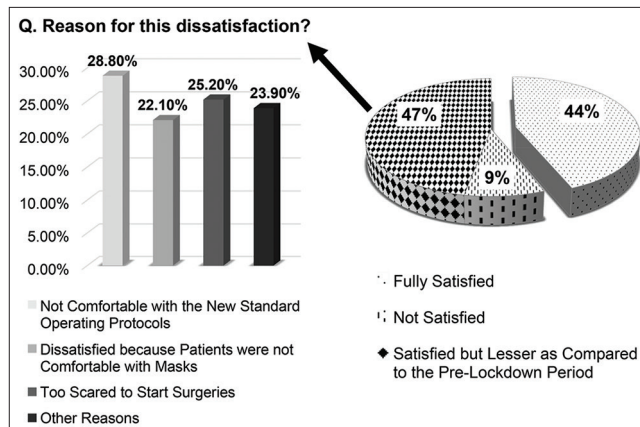


Figure 3: Post-lockdown level of procedural satisfaction

protective gear for clinical care and procedures while it showed significant concerns regarding getting infected with COVID-19 in operation theatre [Fig. 4]. Moderate difficulty was reported regarding preoperative workup, counselling of the patient, donning and doffing of personal protective equipment, lack of intraoperative communication and postoperative care of the patient [Table 2].

Though 13% of respondents were comfortable while working in post-lockdown scenario, 26.57% felt that they would not work given a choice. A percentage of 56.6 were hopeful to get accustomed to the new working conditions gradually.

Post-lockdown effect on cataract surgery

Responding to post-lockdown estimate of type of cataract surgeries performed, a high spike in surgeries for mature cataract (57%) was witnessed. Nuclear cataract accounted for approximately 27.8% while the rest were traumatic or hyper mature cataracts. Phacoemulsification continued to be the surgical technique of choice for majority (64%) of respondents while 33.8% preferred small incision cataract surgery.

Post-lockdown effect on posterior segment procedure

During this time period, the most common procedure done in the posterior segment was intravitreal injections (87%). Pars-plana vitrectomy, scleral buckling and silicone oil removal were the other procedures witnessed.

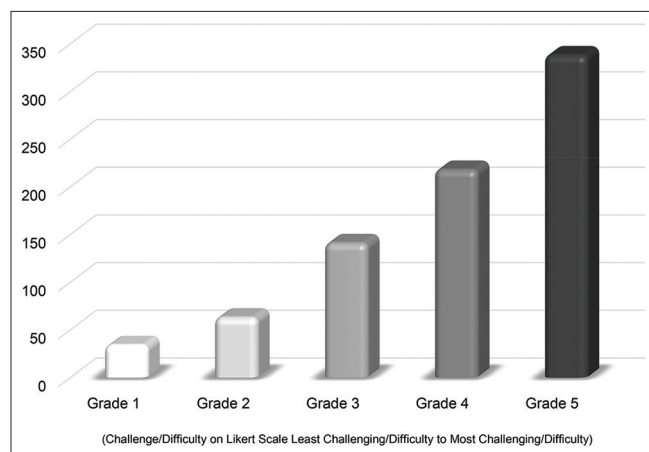


Figure 4: Concerns regarding getting infected with COVID-19 in the operation theatre

Post-lockdown workload and financial impact

During the post-lockdown period, the number of surgeries performed reduced significantly. When compared to pre-lockdown times, 57% of respondents reported 75% reduction in their surgical workload while 35% stated reduction of more than 90%. However, quite strikingly in contrast to the above, 12.7% reported workload amounting to 75–100% of their pre-lockdown load [Fig. 5].

Revenue generation was affected significantly during this lockdown. Forty-seven per cent of respondents reported more than 80% loss of revenue while 16.6% stated a loss of more than 90%. Of those employed in various capacities, 61% suffered salary cut during the lockdown which ranged from no salary (25.5%) to more than 50% cut (16.4%), 25–50% cut (32%) and less than 25% cut (26%).

During the post-lockdown period, 71% of respondents could not upgrade their infrastructure or equipment, if they had planned one. A percentage of 32.75 opined to forgo independent practice while 38% to move to group practice.

Discussion

In our survey, about 52% of the ophthalmologists in the age group of 20–30 years had concerns regarding catching COVID-19 infection in the operation theatre while only one-third of the ophthalmologists in the age group of 50–60 years (high-risk age group) showed concern [Table 3].

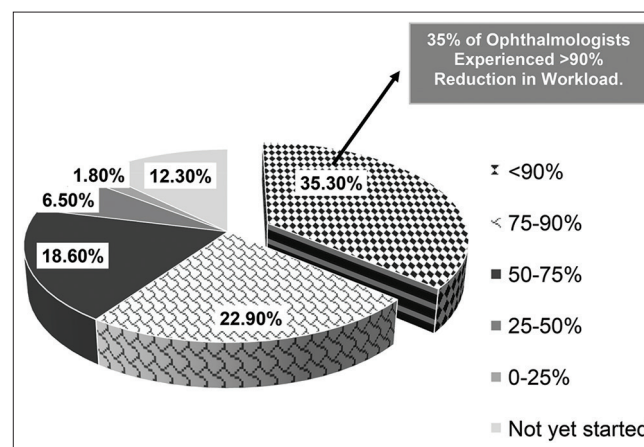


Figure 5: Post-lockdown reduction of workload

Table 2: Difficulty in procuring protective gear (Likert scale)

	Difficulty in procuring protective gear: least challenging (1) to most challenging (5)									
	1		2		3		4		5	
	No.	%	No.	%	No.	%	No.	%	No.	%
Procurement of protective gear	86	10.83	122	15.37	286	36.02	169	21.28	131	16.5
Preoperative workup of the patient	81	10.2	148	18.64	270	34.01	175	22.04	120	15.11
Counselling of the patient	55	6.93	127	15.99	230	28.97	220	27.71	162	20.4
Donning	51	6.42	135	17	272	34.26	205	25.82	131	16.5
Doffing	48	6.05	113	14.23	246	30.98	207	26.07	180	22.67
Lack of intraoperative communication	108	13.6	167	21.03	259	32.62	171	21.54	89	11.21
COVID concerns inside the operation theatre	34	4.28	63	7.93	141	17.76	218	27.46	338	42.57
Postoperative care of the patient	84	10.58	156	19.65	266	33.5	151	19.02	137	17.25

Table 3: Concerns regarding getting infected with COVID-19 in the operation theatre (Likert scale)

Age group	No.	COVID-19 concerns inside the operation theatre (1=least challenging; 5=most challenging)									
		1		2		3		4		5	
		No.	%	No.	%	No.	%	No.	%	No.	%
20-30 years	127	2	1.57	1	0.79	22	17.32	36	28.35	66	51.97
30-40 years	205	7	3.41	18	8.78	20	9.76	57	27.80	103	50.24
40-50 years	205	6	2.93	18	8.78	55	26.83	46	22.44	80	39.02
50-60 years	159	13	8.18	13	8.18	31	19.50	49	30.82	53	33.33
>60	98	6	6.12	13	13.27	13	13.27	30	30.61	36	36.73
Total	794	34	4.28	63	7.93	141	17.76	218	27.46	338	42.57

Chi-square=53.157 with 16 degrees of freedom; $P<0.001$

Singh *et al.* have also shown significant impact of COVID-19 among high-risk age group population.^[6] Though it appears that higher proportion of younger respondents were concerned, literature shows that younger population in absence of other comorbidities have lower case fatality rate and higher age and/or systemic comorbidities increases risk of mortality in SARS-CoV-2 infection.^[7]

The reduction in workload among the ophthalmic colleagues, as evident from our survey, can be put down to multiple reasons including fear of getting infected with COVID-19 from patients and the assisting healthcare providers, non-availability of transportation, lack of staff, medicine and support services and difficult procurement of protective gears.

Previous survey done during the lockdown had predicted that 42.2% of respondents would resume their services either immediately (11.8%) or 1 week (30.4%) post-lockdown.^[5] Moreover, a survey conducted among the practicing physicians and ophthalmologists showed that majority of the ophthalmologists would resume their elective surgeries within 2 weeks after lockdown ends.^[8] However, in our survey, 75.2% of respondents resumed their surgical services after a gap of more than a month post-lockdown. This indicates that resumption of ophthalmic services, especially elective surgical procedures, has been slower than what was expected initially.

In our survey, most of the ophthalmologists (89.7%) were cataract surgeons. Cataract is the second leading cause of preventable vision impairment.^[9,10] Most common cataract operated in the post-lockdown period in our survey was mature cataract, which signifies postponement of less visually impairing forms of cataract by both patients and ophthalmic surgeons. A report on the impact of lockdown on elective surgical procedures estimated that 5.8 lakh elective surgeries (including all medical specialties) were postponed in India by May 2020 leading to increased complications and mortality.^[11] Suspension of such elective surgeries is likely to create a massive cataract backlog to the already existing high cataract load in India (as seen in the United States).^[12]

Most respondents in our survey suffered significant revenue losses which can be attributed to reduce workload or salary cuts. Our survey also highlights that despite all awareness drives, 25% of the ophthalmologist were still using three-ply masks during surgery.

Due to reasons discussed, COVID-19 pandemic has created a huge psychological impact on practicing ophthalmologists

throughout the country which may necessitate individualized mental healthcare, especially for those with moderate-to-severe depression.^[13] Khanna *et al.* conducted a study to assess the psychological impact of COVID-19 on ophthalmologists in India.^[14] The study showed that 32.6% of the responding ophthalmologists had depression of some degree.^[15] The psychological stress is likely to be due to multiple reasons, some of which have become apparent in our survey like loss of revenue, job insecurity, potential COVID-19-related health risks in healthcare providers and their family members and lack of preparedness to practice with newer working conditions.

Limitation

It's a small sample size; however, it does give a perspective on the challenges faced by the ophthalmology specialists during the post-lockdown period. A larger study would be needed to corroborate the study findings.

Conclusion

Our survey addresses the various issues faced by practicing ophthalmologists in the post-lockdown period during the COVID-19 pandemic. It is quite evident that not only the eye care has been affected significantly, the healthcare workers have been affected on multiple fronts too, including financial losses and psychological concerns.

Tele-ophthalmology, which has now been legalized, has become a vital tool in the present scenario which can help the patients at least consult the ophthalmologist.^[14] The COVID-19 pandemic is going to take longer time to settle than what had been expected in the beginning as evident from the fact that some countries are already experiencing a second wave of pandemic.^[16,17] However, it is encouraging to see that as lockdown has been eased in India, people are becoming less reluctant to access healthcare.^[18]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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