



EFFECT OF CORONA PANDEMIC ON OPHTHALMIC SERVICES IN A TERTIARY CARE SUB-HIMALAYAN INSTITUTE & ITS PSYCHOSOCIAL IMPACT ON SOCIETY IN COVID ERA

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ABSTRACT

Introduction-The novel coronavirus known as Severe Acute Respiratory Syndrome Coronavirus(SARS-CoV-2) has engulfed the entire world. The nations worldwide are engaged in carrying out several research, treatment and vaccine trials to relieve the world from the shackles of this global pandemic. This pandemic has not only strained health care facilities but also has psychosocial repercussions.

Objective- To find out the effects of lockdown on ophthalmological services in COVID Era and its psychosocial impact.

Material And Methods- Retrospective analysis of data in the Department of Ophthalmology of tertiary care institute from March 2020 to August 2020 was done. This period was compared with corresponding months of previous year 2019. The services affected and the pattern of social behaviour during different phases of complete and partial lockdown periods were studied.

Results- Strict administrative execution of lockdown and curfews lead to the reduction in number of patients visiting hospital and accounted for drastic dip in no of patients visiting out patient department and operating procedures. The initial mental defence phases of apprehension, denial and projection in lockdown period were eventually followed by displacement and suppression in unlockdown period.

Conclusion- The number of COVID positive patients in India have risen exponentially. As per WHO this global pandemic is likely to stay longer and we are witnessing second or in some countries third wave also, the standard protocol for patients and health care workers needs to be adhered strictly and revised from time to time as there is expected surge of patients with visual threatening situations for number of patients have been deprived of treatment in restriction phases of lockdown . The psychosocial behavior as a result of mental defense mechanism should also be maneuvered along the pandemic control.

KEYWORDS : coronavirus, ophthalmic services, psychosocial impact

INTRODUCTION

The novel coronavirus has affected the entire world. In December 2019 there was an outbreak of severe acute respiratory syndrome (SARS) in Wuhan city of Hubei Province and on March 11, 2020 it was declared as global pandemic¹. Currently there is no available treatment and vaccine for SARS Coronavirus. Various trials are being carried out to evaluate numerous antivirals, immunotherapies, monoclonal antibodies and vaccines. The nations worldwide have been forced to impose lockdown to mitigate its effects which are not only physical but also have psychosocial ramifications. There has been fear from the disease and scare due to curfew, containment and curtailing of outdoor activities. Several recommendations for the prevention of disease and various standard operating procedures have been issued by World Health Organizations, international and national health organizations. To curtail the spread of virus, there was postponement of all routine outpatient department procedures and elective surgeries. The alternative modes of patient care were adopted such as telemedicine, social media, phone calls and various apps. Due to postponement of routine elective surgeries, few patients have to pay the price in form of delayed emergency presentation like, phacomorphic glaucoma, hyper mature cataract, delaying consultation in conditions requiring urgent intervention.

METHOD

Retrospective analysis of data to find out the effects of lockdown on ophthalmological services in COVID Era, in the Department of Ophthalmology of tertiary care institute from January 2020 to June 2020 was done. The medical records of the these patients were studied and their diagnosis, treatment and surgical interventions were analysed. The patient data was analysed for no. of patients visiting OPD and no. of procedures carried out during the various phases of lockdown and unlock period.(Table 1) This period was compared with corresponding months of previous year 2019. The services affected during different phases of complete and partial lockdown periods were studied.

Table 1 -Ophthalmic services from March-August 2020

| Ophthalmic Service | March | April | May | June | July | August |
|--------------------|-------|-------|------|------|------|--------|
| OPD | 2207 | 157 | 930 | 1746 | 2501 | 2100 |
| Refraction | 2363 | 239 | 1099 | 2188 | 2890 | 2838 |
| NCT | 1078 | 112 | 332 | 741 | 1124 | 986 |
| Perimetry | 47 | 2 | 13 | 31 | 70 | 51 |
| OCT | 242 | 28 | 105 | 202 | 325 | 270 |

| | | | | | | |
|----------|-----|----|----|-----|-----|-----|
| Major OT | 146 | 24 | 62 | 127 | 187 | 159 |
|----------|-----|----|----|-----|-----|-----|

The standard operating procedures (SOP) were laid down for the department for the doctors and staff in outpatient department (OPD), operation theatre (OT) and wards as per AIOS guidelines.² (Table 2,3,4) Instructions were also issued for the patients and attendants in local language. (Table 5,6). These SOPs were displayed in OPD, and various places to ensure implementation. The norms of personal hygiene, social distancing and protection kits wearing were followed. The pattern of social behavior during this common social stress or life threatening pandemic was also analyzed in relation to defenses for extreme stress. Individual and society tend to react to this extraordinary situation of stress and conflict by adopting various psychosocial defenses. The statistical analysis was performed with STATA statistical software. Continuous variables were expressed as percentages.

Table 2

| INSTRUCTIONS FOR DOCTOR'S & STAFF | |
|-----------------------------------|---|
| • | All doctors and technical staff handling patients to wear N-95 masks and shall DO HAND WASH after examining every patient. |
| • | While performing any procedure, wear gloves, goggles, face shields and gown. Avoid direct contact with skin and mucosa of patient. |
| • | Avoid NCT, direct ophthalmoscopy, contact lens use. |
| • | Clean the equipments like ophthalmoscope, slit lamp, lenses, tonometer, gonioscope, A, B scan, torch with sanitizer after examining each patient. |
| • | All slit lamps to have acrylic sheets, clean the material with alcohol swab every 2 hourly. |
| • | Clean the trial frame, lenses after doing vision and refraction in each patient. |
| • | All Patients and Attendants before entering OPD must wear masks, clean their hands with soap or hand sanitizer at reception. |
| • | Only one patient to enter examination room at a time and one attendant to accompany a patient. Complete data including phone number and address of the patient to be noted. |
| • | Patients with fever and URTI refer to Flu OPD. Conjunctivitis to be examined with proper precautions and refer |

Table 3

| GENERAL INSTRUCTIONS FOR OPD | |
|------------------------------|--|
| • | Floor of OPD MUST be cleaned with 1% Sodium Hypochlorite every 3 hourly. |
| • | Deep Cleaning to be done any time when there is any contamination. Clearing of wastroom to be done every hour. |
| • | Door handles, side rails on stairs, bed side rail, high touch surface like- reception counter, help desk, gate with 1 % Sodium Hypochlorite (4 Times /Day). |

- Chair in the waiting area (head end, arm rest etc) , Electronic IT equipment like monitor, Key board, Mouse etc must be done with alcohol swab every two hourly.
- Patient to be examined by minimum exposure of staff in a limited time.

Table 4

| WAITING HALL GUIDELINES |
|---|
| • To keep the waiting room as empty as possible with maximum of 10 people. |
| • Seating to be arranged in a manner that patients should remain at least 3 feet from each other. |
| • To keep the waiting time minimum in the hospital premises. |

Table 5

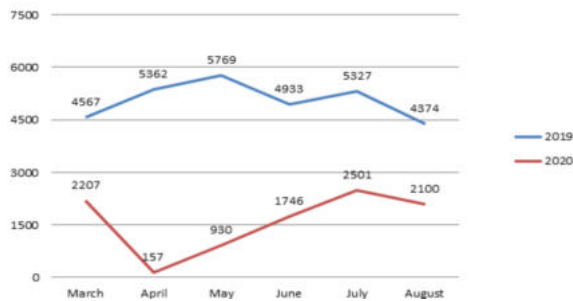
| INSTRUCTIONS FOR OT STAFF |
|--|
| • If daycare surgery is possible, stay in the hospital to be avoided. |
| • Routine screening Chest X-ray before each surgery, if possible. |
| • Patient should enter OT after changing his mask and cap. |
| • Avoid surgeries off-hours or with an incomplete team. Minimum number of staff in the OT. |
| • Faculty or SR should preferably do a quick & safe surgery. |
| • Try to avoid GA unless mandatory. Prefer topical anaesthesia over local anaesthesia. |
| • PPE for all OT staff (HIV Kit for non-COVID-19 patients and a full-body suit for COVID-19 patients and suspects). |
| • After wearing OT dress (dress - cap - mask - shoe covers), sequence for putting (donning) on protective equipments (gown - goggles - gloves) and reversal while doffing. |
| • All universal precautions as usual. |

Table 6

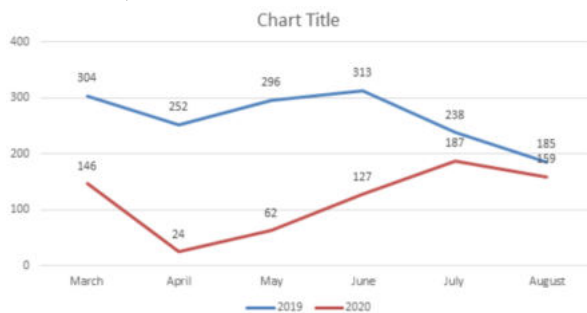
| Instructions for Patients |
|---|
| • Only one attendant to accompany a patient |
| • Only one patient to enter examination room at a time. |
| • FaceMask: covering nose and mouth. |
| • All Patients and Attendants before entering OPD must clean their hands with soap or hand sanitizer. |
| • Social Distancing : Maintaining minimum 1 mtr / 3 ft distance between two individuals. |
| • Keep the Prescription slips, reimbursement bills and reports to be kept on table. |

RESULTS

There were about 9641 patients who attended the Eye OPD from March to August (2020). The data was compared with the previous year's Eye OPD data from March to August (2019). It was observed that there was drastic decrease in number of patients attending eye OPD in March and April 2020 (Graph 1). The number of patients undergoing Major Operating procedures were 705 from March to August 2020 in comparison to the year 2019 in which 1,588 patients underwent major surgery in same duration (Graph 2).

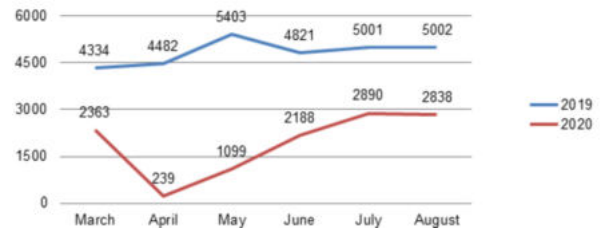


Graph 1 – Comparison of OPD in months of March-August (year 2019 and 2020)

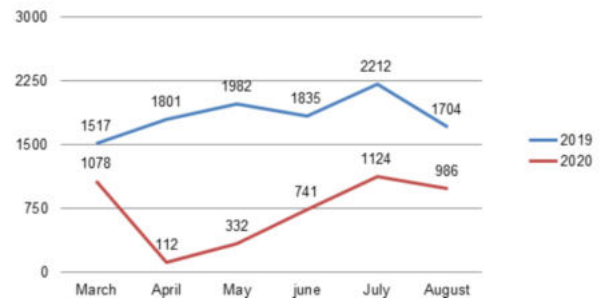


Graph 2 – Comparison of Major OT procedures in months of March-August (year 2019 and 2020)

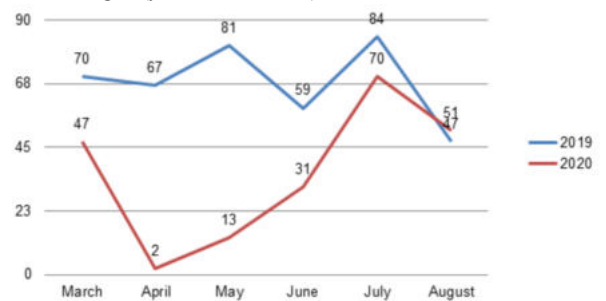
The OPD procedures were also compared with consecutive periods in 2019 from March to August. The different procedures like refraction, tonometry, perimetry and OCT were compared. The patients who underwent refraction is depicted in graph 3, non-contact tonometry is shown in graph 4, perimetry is shown in graph 5 and optical coherence tomography is shown in graph 6. These observations were made from March to August 2020 with period of lockdown and unlockdown as follows (Table 7) and profile of corona cases (Table 8). If we look at the number of cases across world and in India, it was observed that cases were doubling every month. The doubling rate is high in the beginning due to lesser number of cases but subsequently decreased as the volume of cases soared up.



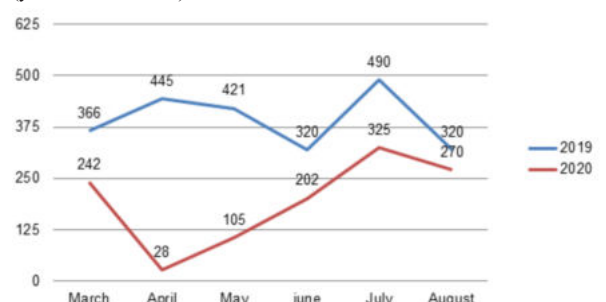
Graph 3 – Comparison of Refractions in months of March-August (year 2019 and 2020)



Graph 4 – Comparison of Non-contact tonometry in months of March-August (year 2019 and 2020)



Graph 5 – Comparison of Perimetry in months of March-August (year 2019 and 2020)



Graph 6 – Comparison of OCT in months of March-August (year 2019 and 2020)

Table 7

| | |
|------------------|-------------------|
| Lockdown phase 1 | 25 March-14 April |
| Lockdown phase 2 | 15 April-3 May |
| Lockdown phase 3 | 4 May-17 May |
| Lockdown phase 4 | 18 May-31 May |
| Unlock phase 1 | 1 June- 30 June |
| Unlock phase 2 | 1 July- 31 July |
| Unlock phase 3 | 1 - 31 August |

Profile of corona cases (Table 8)

| Phases | Date Year 2020 | Total cases world | Total cases India | Total cases in state of HP |
|--------------------------------------|------------------------|-------------------|-------------------|----------------------------|
| Lockdown phase 1 (25 March-14 April) | 23 rd March | 3,32,930 | 415 | 2 |
| Lockdown phase 2 (15 April-3 May) | 1 st April | 8,87,067 | 1897 | 3 |
| Lockdown phase 3&4 (4 May-31 May) | 1 st May | 32,56,227 | 10,500 | 40 |
| Unlock phase 1 (1 June- 30 June) | 1 st June | 6,172,448 | 1,98,317 | 339 |
| Unlock phase 2 (1 July- 31 July) | 1 st July | 10,357,662 | 5,85,493 | 953 |
| Unlock phase 3 (1 - 31 August) | 1 st August | 17,396,943 | 16,95,988 | 2,596 |
| Unlock phase 4 | 1st sept | 25,62,8291 | 36,91,166 | 6116 |

DISCUSSION

There were lockdown and containment measures across different countries around the world. Similarly, in India complete lockdown was imposed initially for 3 weeks from 25th March to 14th April, the ophthalmic services were limited to urgent consultations and emergency surgeries like phacomorphic glaucoma and open globe injury repair. This phase was marked by anxiety and fear among people as there was ban on people from stepping out of their house and prohibition of all social, political, cultural and religious activities. Strict administrative execution of lockdown and curfews lead to the reduction in number of patients visiting hospital and accounted for drastic dip in no of patients visiting OPD and OT procedures (Graph 1-6) in the months of March and April 2020. Total number of patients undergoing refraction in month of April 2020 was 239 in comparison to 4482 in April 2019 thereby showing 95% reduction. Similarly total number of patients undergoing OCT in the month of April 2020 was 28 in comparison to 445 in April 2019 thereby showing 92% reduction in these services. The number of patients undergoing operating procedures in the month of April 2020 was 24 in comparison to 252 in April 2019 thereby showing 90% reduction in operating procedures.

People initially refused to accept the external reality, because it was too threatening which is denial phase of psychosocial behavior. In this phase, there is resolution of emotional conflict and reduction of anxiety by refusing to perceive or consciously acknowledge the more unpleasant aspects of external reality. When most people believed that it is happening too far from them and they will not be affected. So why we should be restricted from our routine activities and hence there were violation of Lockdown in beginning. Although there was limited spread of diseases during the first lockdown but it could not be contained so the lockdown was further extended from 14th April to 3rd May for another three weeks with conditional relaxation after 20th April. The COVID affected areas were classified as red, orange and green zones depending upon the number of positive cases. The red zone have substantial number of positive cases, orange zones having limited number of cases and green zones having no coronavirus positive case. There were incidences of blaming certain groups and communities for the spread of disease. This was another mechanism adopted by society, an effort to reduce stress by attributing it to others, which is called projection in psychosocial defence.^{4,5}

The 3rd and 4th phase of lockdown (4th May-17th May and 4th Phase 18th May -31st May) were marked by easing of restrictions with normal movement in green zones and demarcation of containment and buffer zones.³ There were incidences of violence against healthcare workers and law implementing agencies. This explained the displacement as psychosocial defense in which people shifted aggressive impulses to a more acceptable or less threatening target; redirecting emotion to a safer outlet in order to avoid dealing directly with what is frightening or threatening.^{4,5} The phases of lockdown gave the time to the authority to prepare the hospitals and develop the quarantine centres. The standard guidelines were laid down. Procurement of kits, mask, and disposals were ensured. There were hardly any production of indigenous personal protection kits in the beginning of epidemic, but this interval provided increased industrial production of N95, testing kits, PPE.

The lockdown phase was followed by unlock phase 1.0 (June 1-June 30 2020) permitting shopping malls, hotels and restaurants to open and

lockdown restrictions imposed in containment zones only. There by increasing the movement of people and the risk of spread of virus also increased. These phases of unlockdown were marked by acceptance and suppression as psychosocial defence behaviour. This was depicted in this study by gradual rise in number of patients coming to eye OPD. The acceptance at the level of society was seen where people were ready to move out of fear despite increase in number of cases. Individuals and people were consciously not paying attention to a such thoughts, emotions, in order to cope with the present reality; making it possible to access distressing emotions whilst accepting them called suppression.^{4,5} While 2nd unlocking phase was easing of restrictions on industries and services sectors and later phases of unlock down eased night curfews and permitting inter and intra-state travel and other recreational activities. In these phases, though people were afraid but had overcome the anxiety and fear after the initial phase of denial to certain extent. They have partially accepted and were learning to live with it despite increasing number of corona positive cases. This explains gradual increase in OPD's and OT's.

The standard protocols for patient coming to the hospital had to be followed in which the screening at the entrance gate was done. A suspect was sent to the triage area before being taken up for admission. The SOP's for OPD, OT and ward staffs were issued to prevent the transmission of corona virus in medical, paramedical staff and patients. It has been stressed by international health organizations like American Academy of Ophthalmology that ophthalmologists and eye health care providers must wear face and eye shield while examining high risk patients with history of international travel or travel from corona hot spots area, and history of fever and breathing difficulties.⁶ These eye care providers have to examine the patients with close proximity and various studies have revealed presence of ACE 2 receptors in conjunctiva and cornea as entry point of virus and coronavirus has been isolated from tears and conjunctival discharge of corona virus infected patient.^{7,8}

There were number of patients who were not getting adequate treatment or consultation during the restriction period. This is bound to increase the prevalence of visually disabled and blind individuals. We should be ready to handle the expected surge of patients with visually threatening situations in post-COVID-19-era.

CONCLUSION

The SARS-CoV-2 global pandemic has caused radical transformation in the lives of people. Due precautions should be taken by ophthalmologists and eye care providers as they are slightly at high risk of acquiring infection. The psychosocial impact of this pandemic is deep and is likely to be deeper as the restrictions and fear persist longer. There is a possibility that these disorders will lead to increased incidence anxiety, depression, suicide and crimes, which must be addressed at mass level along with pandemic control measures. As per WHO this global pandemic is likely to stay longer and we are witnessing second or in some countries third wave also, these precautions should be followed during and after unlocking phase as slowly and steadily we would be getting back to elective patients.

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