

Original Article

# Impact of COVID-19 Lockdown on Ocular Trauma in Benghazi, Libya

Mariam Gebril <sup>1\*</sup>, Bahjah Esehiyb <sup>2</sup>, Suliman Masoud <sup>1</sup>

<sup>1</sup> Department of Ophthalmology, Faculty of Medicine, Benghazi University, Libya.

<sup>2</sup> Department of Ophthalmology, Faculty of Medicine, Omar Al Mukhtar University, Libya

Corresponding Email. [mariam.gebri@uob.edu.ly](mailto:mariam.gebri@uob.edu.ly)

---

## ABSTRACT

---

**Background.** COVID-19 is a new pandemic that spread over the world in 2020, for which most countries imposed rigorous lockdown to reduce its upsurge and thus its socioeconomics' sever effects. Global measures include isolation, social distancing, lockdown any nonemergency facilities, local and international travelling restrictions. But these rules are implacable in case of trauma in general and more with ocular trauma, which represents a serious public health problem and leading cause of visual impairment. The aim of this study was to evaluate the impact of COVID -19 lock down on number of ocular traumas acquiring surgery. **Methods.** A retrospective study in Aljala trauma hospital in the period from 18 March to 18 April 2020 on patients who underwent surgical intervention for non-war eye trauma. **Results.** A total number of patients seen in emergency department were 350 patients in 2020 with four patients needed hospital admission and surgical intervention making a 1.14% of total number. While number of patients seen at the same time in 2019 were 965 patients and three patients needed surgical intervention (0.31%). There was no statistical difference in the amount of patient acquiring surgical intervention in the two periods with the *P* value of >0.05 **Conclusion.** Although total emergency eye visits decreased during the covid-19 lockdown period, similar incidence of surgery needed ocular trauma persisted.

---

**Keywords:** Covid-19, Ocular Trauma, Lockdown.

---

**Citation.** Gebril M, Esehiyb B, Masoud S. Impact of COVID-19 Lockdown on Ocular Trauma in Benghazi, Libya. *Khalij-Libya J Dent Med Res.* 2021;5(1):53–57. <https://doi.org/10.47705/kjdmr.215108>

**Received:** 01/02/21; **accepted:** 18/02/21

Copyright©Khalij-Libya Journal (KJDMR) 2021. Open Access. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO license <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>

## INTRODUCTION

COVID-19 is a new pandemic that spread over the world in 2020, for which most countries imposed rigorous lockdown to reduce its upsurge and thus its socioeconomics' sever effects on them. Global measures include isolation, social distancing, lockdown any nonemergency facilities, local and international travelling restrictions. But these rules are implacable in case of trauma in general and more with ocular trauma, which represents a serious public health problem and leading cause of visual impairment [1].

Furthermore, covid-19 has been detected in the tears and in conjunctival specimens collected from infected patients, suggesting that the ocular surface and the tears might represent a potential route for covid-19 infection, making the ophthalmologist at a higher risk to catch the infection due to proximity to the patients [2,3]. An ophthalmologist in Wuhan, China, was one

of the first to realize that new emergency respiratory illnesses could arise [4]. Unfortunately, he and most of his colleagues died of infection afterwards [5].

Ophthalmologists have been instructed to follow clinical guidelines to deal with the pandemic and to protect themselves and their patients from infection with COVID-19. These guidelines were based on the recommendations of the American Academy of Ophthalmology (AAO) and International Council of Ophthalmology (ICO) [6,7].

These guidelines included the use of protective gloves, facing shields and breath safety slit-lamps, disposable gloves, careful hand washing with soap and water, and after every test, disinfection of the examination rooms and slit lamps. Moreover, general safety measures such as use of a face mask, social distancing and measurement of body temperature for each patient were strictly enforced within the hospital [8].

The country's lockdown started on 18 of March 2020 as an attempt to reduce the spread of the novel coronavirus (COVID-19). Shutting down or transforming a daily department to an isolation department for treating COVID-19 patients in other hospitals which had a medical and an economic impact on the patients and doctors, with already limited resources availability.

Hospitals were only dealing with outpatient emergency cases, urgent referrals from out city and with inpatients whose medical conditions (including trauma) required keeping them admitted. Elective clinics and surgeries were cancelled. Therefore, the current study aimed to evaluate the impact of the covid-19 lock down on number of ocular traumas acquiring surgery.

## **METHODS**

### ***Study Design and Settings***

A retrospective study, single-centre, where files are reviewed, for patients who underwent surgical intervention for non-war eye trauma, in the governmental Aljala trauma hospital in the period from 18 March to 18 April 2020, at the time of complete lock down in the eastern part of Libya and were compared with those who presented from 18 March 2019 to 18 April 2019.

The data were retrieved from the electronic medical system of the Aljala trauma hospital, in Benghazi city which the only tertiary referral eye hospital in eastern part of Libya during lockdown. The retrieved data compromise: age, sex and characteristics of injury sustained were collected.

### ***Statistical Analysis***

The collected data were analyzed using SPSS (Statistical Package for Social Science) version 25 (IBM, Armonk, NY, USA) on a compatible computer and statistical significance was a two-sided P value of less than 0.05.

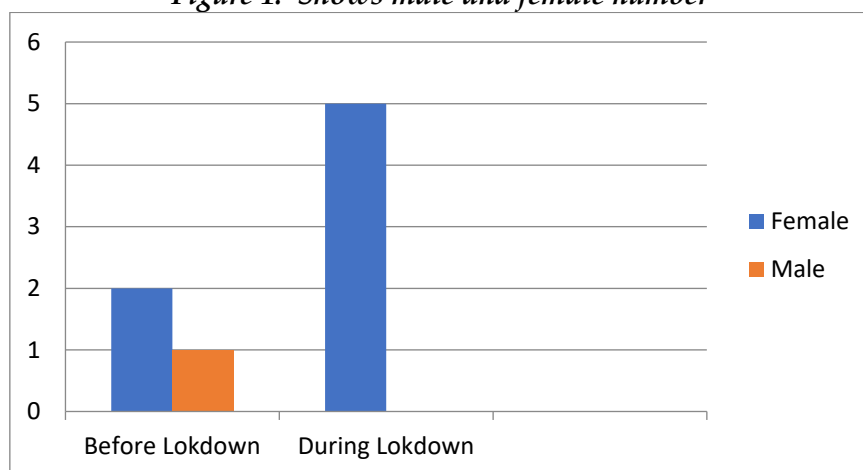
## RESULTS

Total number of patients seen in emergency department were 350 patients in 2020 with four patients needed hospital admission and surgical intervention making a 1.14% of total number. While number of the patients seen at the same time in 2019 were 965 patients and three patients needed the surgical intervention 0.31%. There was no statistical difference in the amount of patient acquiring surgical intervention in the two periods, with the p-value of >0.05.

The percentage of corneal perforation out of total number of ocular traumas was 0.00% during the lockdown compared to 66.7% during corresponding period before lockdown this difference is statistically significant (table 1).

Mean age of patients in 2020 was 24.20+16.47. While in 2019 the main age was 11.67+6.43, with  $p > 0.05$  which indicate no statistical difference in the mean age of the two groups. All five patients were males in 2020. Whereas, in 2019 one female and two males (figure 1). Characteristics of eye's trauma illustrated in table 1.

**Figure 1: Shows male and female number**



**Table 1. Characteristics of eye's trauma**

Characteristic	Before lockdown	During lockdown	P value
<b>Mean age ± (SD)</b>	11.67 ± 6.43	24 ± 16.47	> 0.05
<b>Gender:</b>			
Male	2 (28.6%)	5 (71.4%)	
Female	1 (100%)	0 .00	
Total	3 (37.5%)	5 (62.5%)	
<b>Type of trauma</b>			
Corneal perforation (CP)	2 (66.7%)	0.00	< 0.05
Scleral perforation (SP)	1 (33.5%)	1 (20%)	> 0.05
Rupture globe (RG)	0.00	3 (60%)	> 0.05
Lid laceration (LL)	0.00	1 (20%)	> 0.05
<b>Total</b>	3 (37.5%)	5 (62.5%)	> 0.05

## DISCUSSION AND CONCLUSION

COVID-19 is a new pandemic in 2020 which has swept around the world, with strict locks in most countries. This lock-down obliged people to stay in their homes for weeks and months. This has had many social [9], psychological [10] and even physical [11] impacts on people with chronic diseases in particular [12]. stay at home for prolonged times, especially those with poor vision, may have a detrimental impact on their health and a high trauma risk [8].

Pellegrini et al., comparative study done in Italy recorded less ocular trauma during lockdown period [13]. while other reports were found increase in traumatic ocular injuries occurring at home during lockdown period [14,15].

Although there was a significant drop in the patient number attending the emergency department during the lockdown to around the third, but number of sever ophthalmic injuries which require intervention was like the previous year. Our study was in line in some points with previous study conducted by as Wu C et.al were the daily mean (SD)number patients who presented for emergency evaluation decreased, traveling farther and delayed presentation.[15]

Due to complete lock down and transforming other governmental hospitals to isolation and some hospitals did not had a specialized eye surgeon, due to travel restriction so more likely to have a delayed presentation from initial time of injury, travel farther to seek urgent ophthalmic care. Add on fear of patients from catching COVID infection has resulted in very high threshold for patients to present to emergency department in governmental hospitals and they may flight to the private clinic, believing that the risk of catching a COVID there was less or almost non-existent, and since our study were not included a private clinic the number of urgent eye condition may be underestimated.

Although total emergency eye visits decreased during the covid-19 lockdown period, a similar incidence of surgery needed ocular trauma persisted. These findings highlight a fact that prevention of ocular trauma by education of the patient about the significant of wearing protective glasses and other safety measures as any preventive measurements can help the governments with unprecedented resource shortage faced by health care facilities impacted by COVID pandemic in addition to prevent blindness ,visual impairment , it sized consumption of PPES for ophthalmologist to the minimum limit as providing PPES to ophthalmologist is essential because they at particular high risk to get infected with covid-19 from the patients due to face to face contact during examination and the exposure to mucosal surface. Furthermore, local and wider emergency eye care services and/or telemedicine as a triaging tool to consult patients with ocular trauma may be worth.

### *Disclaimer*

The article has not been previously presented or published and is not part of a thesis project.

### *Conflict of Interest*

There are no financial, personal, or professional conflicts of interest to declare.

## REFERENCES

1. Mir TA, Canner JK, Zafar S, Srikumaran D, Friedman DS, Woreta FA. Characteristics of Open Globe Injuries in the United States From 2006 to 2014. *JAMA Ophthalmol.* 2020;138(3):268–275. doi:10.1001/jamaophthalmol.2019.5823.
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 Jun;92(6):589–594. doi: 10.1002/jmv.25725. Epub 2020 Mar 12. PMID: 32100876; PMCID: PMC7228294.
3. Kuo IC, O'Brien TP. COVID-19 and ophthalmology: an underappreciated occupational hazard. *Infection Control & Hospital Epidemiology.* 2020;41(10):12071208. doi:10.1017/ice.2020.238.
4. Green A. Li Wenliang. Obituary. *Lancet* 2020; **395:682**.
5. Hu VH, Watts E, Burton M, Kyari, F, Mathenge, C, Heidary, F, Hoffman, J, & Wolvaardt, E. Protecting yourself and your patients from COVID-19 in eye care. *Community Eye Health.* 2020;33(108):S1-S6.
6. American Academy of Ophthalmology. Important coronavirus updates for ophthalmologists. Available from: <https://www.aao.org/headline/alert-important-coronavirus-context.37>. Accessed January 31, 2021.
7. International Council of Ophthalmology. ICO Global COVID-19 Resource Center. Available from: [http://www.icoph.org/news/news\\_detail/602/ICO-Global-COVID-19-Resource-Center.html](http://www.icoph.org/news/news_detail/602/ICO-Global-COVID-19-Resource-Center.html). Accessed January 31, 2021.
8. Alqudah AA, Al Dwairi RA, Alqudah NM, Abumurad SK. COVID-19 Lockdown and Eye Injury: A Case Series from Jordan. *Int Med Case Rep J.* 2020;13:493-501 <https://doi.org/10.2147/IMCRJ.S274284>
9. Nicola M, Alsafi Z, Sohrabi C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): a review. *Int J Surg.* 2020;78:185–193. doi:10.1016/j.ijsu.2020.04.018
10. Dubey S, Biswas P, Ghosh R, et al. Psychosocial impact of COVID-19 [published online ahead of print, 2020 May 27]. *Diabetes Metab Syndr.* 2020;14(5):779–788. doi:10.1016/j.dsx.2020.05.035
11. Mehrsafari AH, Gazerani P, Moghadam Zadeh A, Jaenes Sánchez JC. Addressing potential impact of COVID-19 pandemic on physical and mental health of elite athletes. *Brain Behav Immun.* 2020;87:147–148. doi:10.1016/j.bbi.2020.05.011
12. Kretchy IA, Asiedu-Danso M, Kretchy JP. Medication management and adherence during the COVID-19 pandemic: perspectives and experiences from low-and middle-income countries. *Res Social Adm Pharm.* 2020;S1551–7411(20):30332–30336. doi:10.1016/j.sapharm.2020.04.007
13. Pellegrini M, Roda M, Geronimo ND, Lupardi E, Giannaccare G, Schiavi C. Changing trends of ocular trauma in the time of COVID-19 pandemic. *Eye (Lond)* 2020;34:1248-1250.
14. Hamroush A, Qureshi M, Shah S. Increased risk of ocular injury seen during lockdown due to COVID-19. *Cont Lens Anterior Eye* 2020;43:216.
15. Wu C, Patel SN, Jenkins TL, Obeid A, Ho AC, Yonekawa Y. Ocular trauma during COVID-19 stay-at-home orders: a comparative cohort study. *Curr Opin Ophthalmol.* 2020 Sep;31(5):423-426. doi: 10.1097/ICU.0000000000000687. PMID: 32740065.