Correspondence

EJO European Journal of Ophthalmology

Eye care professionals' patient care and personal protective equipment adapts during the second wave of SARS-CoV-2: Survey in Israel

European Journal of Ophthalmology
2022, Vol. 32(2) NP136–NP139

DOI: 10.1177/11206721211029132
journals.sagepub.com/home/ejo
SAGE

Nir Erdinest[1] and Naomi London[2]

Abstract

The coronavirus disease (COVID-19) began spreading in December 2019 and rapidly evolved to a global pandemic. Initially information was nonexistent and eye care professionals (ECPs) were anxious as the close proximity involved in patient care put them at high risk. Recognizing this stress and the probable effect on behavior initiated this survey. The survey presented here was conducted in three stages. The expectation was a change in behavior during the second wave when modes of transmission and methods of protection clarified. Yet nearly a third of ECPs still refrained from examining patients. This continuing trend can have severe health and economic ramifications.

Keywords

COVID-19, contact lens fitting, eye care practitioners, survey, personal protection equipment

Date received: 25 September 2020; accepted: 14 June 2021

The coronavirus disease (COVID-19) began spreading in December 2019 and rapidly evolved to a global pandemic. Current data suggests no evidence of contraction through contact lenses and little supporting ocular transmission or viral adherence to the ocular surface.[1,2] A meta-analysis published in January 2021 indicated that 0.96% COVID-19 patients exhibited conjunctivitis and 11% showed at least one ocular manifestation, sometimes appearing even before other symptoms. Transmission via tears or ocular surface still remains a possible risk, but unlikely.[3] However, initially information on this coronavirus was virtually non-existent and eye care professionals (ECPs) were anxious as the close proximity involved in patient care put them at high risk.[4,5] The scant information that came out of China and Singapore as early as February 2020 suggested comparing this virus to previous known coronaviruses, which had shown evidence of being capable of causing infection via the angiotensin-converting-enzyme-2, binding to receptors in ocular tissue. At that point, the anecdotal reports of viral detection in the tears and conjunctival secretions in some, though few (3%), symptomatic patients, strongly encouraged use of protective goggles to prevent possible infection.[6,7] Recognizing the anxiety and the probable effect on behavior initiated this survey.

Israel's high-level lockdown suppressed infection to close to zero after the first wave. Then a second wave developed to the extent that at the time of submission, the country ranked ninth place in the world in the number of cases per million people. Lockdowns and mass population vaccination have more recently brought the *R*0 down to 0.6 with a total of 48 active COVID-19 cases nationally as of June 2, 2021.

Methods

The survey presented here was conducted in three stages. A questionnaire was sent to 1000 ECPs during the first wave in April (489 responded), in May during the lull (342 responded), and in July 2020 during the second wave (792 responded). Responses were collected anonymously

[1]Department of Ophthalmology, Hadassah-Hebrew University Medical Center, Jerusalem, Israel
[2]Private Practice, Jerusalem, Israel

Corresponding author:
Naomi London, 5 Even Israel, Jerusalem 9422805, Israel.
Email: imnl4u@gmail.com

through online platforms. No personal information was collected, and no ethical approval was required.

Background questions asked whether the ECP was an employee or self-employed and whether they have been practicing for more or less than 5 years.

At each stage, ECPs were asked whether they avoided contact lens fitting and, if so, to explain why. They were asked whether they modified their approach to fittings, offered multiple choices including total refrain from new fits but willing to examine refits, slit lamp evaluations, follow-up visits, and a space to add alternatives. All three stages also included a question asking what methods of personal protection equipment (PPE) were used and which they felt were effective. Multiple options included a mask, gloves, slit lamp shield, surface disinfection before each exam including 70% alcohol, a full-face shield, single use paper to cover surfaces, temperature measurement, washing of hands, and the final entry was empty to allow for additional options. They were able to select multiple items in each question. During the third stage one additional question was posed asking whether they modified their policies and whether they protect themselves more during the second wave.

The questionnaire format is given below:

Are you an employee or self-employed?

- Yes
- No

Have you been practicing for at least 5 years?

- Yes
- No

Do you avoid fitting contact lenses? If so, choose the reason/s why or add your own in the space provided.

- Eye care professional is of high-risk population
- Proximity to patient
- Risk of infecting family
- Fear of contracting the virus via ocular tissue
- Other

Have you altered your examination protocol from pre-pandemic?

- I avoid new fits as much as possible and provide refits.
- I avoid slit lamp examinations as much as possible.
- I avoid follow-up examinations as much as possible.
- No, I have not altered my habitual examination technique.

Which of the following protective equipment do you utilize? (You may choose multiple items)

- Mask (both caregiver and patient)
- Gloves
- Slit lamp screen
- Cleaning surfaces and equipment with 70% alcohol between patients
- Transparent face mask
- Measure patient temperature
- Single use paper to cover surfaces
- Hand washing between patients
- Other

In comparison to the first wave, do you protect yourself more (in the second wave)?

- Yes
- No

Results

Patient care

During the first wave, 54.8% of ECP's that responded were unwilling to provide any care involving touching patients' eye including slit lamp evaluations. This group is a combination of 61.3% of the ECPs with experience above 5 years that responded, and 42.1% of the more novice ECPs that responded.

During the lull, 34.5% of ECP's still refrained from contact lens fittings, including 49.7% of the more experienced ECPs that responded and 31.9% of ECPs with less than 5 years of experience.

During the second wave, 26.6% of ECP's still did not provide full contact lens service. The data indicated that 52.1% of the experienced responding ECPs were reluctant, while only 27.4% of those with less experience refrained from providing service, primarily citing fear of the possibility of transmission via ocular fluids and tissue (Figure 1(a)). The primary type of examination optometrists avoid is first time fits (Figure 1(b)).

PPE

The surveys revealed that certain protection methods such as wearing face masks by both ECP and patient (99.0%), handwashing (99.8%), and cleaning of surfaces (92.5%) remained high throughout all stages. These results may be because these protocols are largely intuitive, but in addition, their importance was continuously emphasized in public service announcements by the health ministry.

During the first wave, PPE such as transparent full face shields and protecting dividers on the slit lamp were used only 5.9% and 8.1% respectively by ECPs.

The use of gloves and temperature measurement were highest during the first wave at 84.9% and 91.6% respectively.

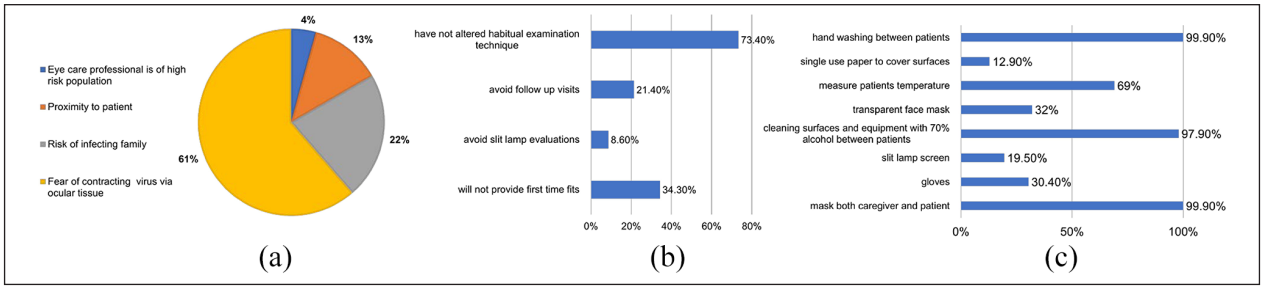

Figure 1. Breakdown of professionals second wave responses regarding reluctance to fit, examination protocol, and infection prevention methods: (a) reasons cited of those reluctant to fit contact lenses during the second wave, (b) many professionals have still altered their examination protocol from pre- pandemic procedure during the second wave, and (c) this graph shows the preferred methods of professionals to prevent infection during the second wave.

During the lull, full face shields and slit lamp protecting dividers use increased to 13.5% and 13.8% respectively, while gloves use and measuring temperature decreased to 62.2% and 82.3% respectively.

The second wave exhibited that full face shields and slit lamp protecting dividers use increased to 32% and 19.5% respectively, while there was a further decline in glove use and measuring temperature to 30.4% and 69% respectively (Figure 1(c)).

Temperature measurement declined as the pandemic progressed along with emerging data indicating that although symptomatic COVID-19 patients are more contagious than asymptomatic,[5,8] symptoms are often subtle or go unrecognized. This rendered measuring temperature unhelpful when trying to identify and prevent disease spread.

Discussion

The fear of infection during the first wave is understandable. The expectation was a change in behavior during the second wave when modes of transmission and methods of protection clarified. Yet nearly a third of ECPs still refrained from examining patients, especially first time contact lens fittings. Though many that have contracted this disease are completely asymptomatic or presymptomatic and can, though minimally, still spread the disease to others, applying appropriate protocol and PPE minimizes the risk of infection to the ECP to a significant degree. Though this may be the case, the results from this survey indicate that though some PPE use increased, many were not sufficiently aware of this, as fear of ocular virus contraction was still high. This continuing trend can have severe health and economic ramifications. Some countries, such as the National Health Service (NHS) of the United Kingdom provided general guidelines, and in May 2020 the British Contact Lens Association (BCLA) began publishing recommendations available both to practitioner and patients from perspectives including practice management, environment, personal protection, and contact lens care, in multiple languages, updating as new information requires.[9] For example, guidelines are provided with consideration to the size of examination rooms, waiting areas or retail space and their ventilation, on how to schedule appointments, lower the risk of spreading infection, thereby simultaneously providing safe care and lowering ECP anxiety.[9] Persistent, updated, and detailed outreach by national health policy providers should be encouraged internationally. Currently, more than two thirds of the Israeli population are fully vaccinated or recovered, but that has not significantly impacted national ECP protocol to prevent disease contagion. The pandemic is not over, yet with vaccinations and recovery the world is hoping to return to a "new normal." This term suggests what has been seen in clinical practice. ECPs express they have learned from the experience, and education and guidance will help them continue to be careful of issues such as habitual face touching, avoid crowding of patients, and the other protocol mentioned. Hopefully, this information helps countries proactively guide their professionals and attain faster rehabilitation for their nations, restoring patient care to pre-pandemic status.

Acknowledgements

Special thanks to Mr. Adrian Marcovici, Ms. Shirly Weiss-Degani, and Ms. Merav Tzapani for conducting the survey and gathering the information.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Naomi London https://orcid.org/0000-0001-6935-3275

References

1. Lawrenson JG and Buckley RJ. COVID-19 and the eye. *Ophthalmic Physiol Opt* 2020; 40: 383–388.
2. Ozturker ZK. Conjunctivitis as sole symptom of COVID-19: a case report and review of literature. *Eur J Ophthalmol* 2021; 31: NP161–NP166.
3. Nasiri N, Sharifi H, Bazrafshan A, et al. Ocular manifestations of COVID-19: a systematic review and meta-analysis. *J Ophthalmic Vis Res* 2021; 16: 103–112.
4. Veritti D, Sarao V, Bandello F, et al. Infection control measures in ophthalmology during the COVID-19 outbreak: a narrative review from an early experience in Italy. *Eur J Ophthalmol* 2020; 30: 621–628.
5. Al-Sadeq DW and Nasrallah GK. The incidence of the novel coronavirus SARS-CoV-2 among asymptomatic patients: a systematic review. *Int J Infect Dis* 2020; 98: 372–380.
6. Seah I and Agrawal R. Can the coronavirus disease 2019 (COVID-19) affect the eyes? A review of coronaviruses and ocular implications in humans and animals. *Ocul Immunol Inflamm* 2020; 28: 391–395.
7. Bacherini D, Biagini I, Lenzetti C, et al. The COVID-19 pandemic from an ophthalmologist's perspective. *Trends Mol Med* 2020; 26: 529–531.
8. Han Y and Yang H. The transmission and diagnosis of 2019 novel coronavirus infection disease (COVID-19): a Chinese perspective. *J Med Virol* 2020; 92: 639–644.
9. British Contact Lens Association. Contact lens wear and coronavirus (COVID-19) guidance, https://www.bcla.org.uk/Public/Public/Consumer/Contact-Lens-Wear-and-Coronavirus-guidance.aspx (2020).