



Short communication

COVID-19 Pandemic: Survey of future use of personal protective equipment in optometric practice

Heiko Pult^{a,b,c,*}^a Dr. Heiko Pult - Optometry and Vision Research, Weinheim, Germany^b Ophthalmic Research Group, Life and Health Sciences, Aston University, Birmingham, United Kingdom^c School of Biomedical & Life Sciences, Cardiff University, Cardiff, United Kingdom

ARTICLE INFO

Keywords:

COVID-19

Personal protective equipment

Eye care practitioners

Survey

ABSTRACT

Purpose: The aim of this project was to evaluate which personal protective equipment (PPE) eye care practitioners (ECP) will use during the next months and also what they will ask the patient to use in clinical practice. **Methods:** A social-media survey was carried out, asking 257 optometrists and opticians in Germany, Austria and Switzerland (i) which PPE they intended to use in the future (after lockdown and before herd immunity and / or vaccine availability) and (ii) what they would ask the patient to do in terms of this.

Results: 75 % of the ECPs planned on wearing masks during refractions and 69 % when fitting contact lens. 62 % of the ECPs also expected their patients to wear masks in these tasks. This number is higher than for distance tasks such as fitting frames. Around 90 % of the ECPs would, in addition to hand washing, disinfect their hands and around 80 % expected their patients to do so too. Less than one third of ECPs favoured wearing safety spectacles, gloves and / or protective facial shields. 73 % planned on disinfecting frames after they would have been tried on by customers.

Conclusions: In summary, most ECPs planned on continuing to use higher standards of PPE. Those, who intended to wear masks themselves, would ask their patients to also do so, combined with hand disinfection.

1. Introduction

The World Health Organisation (WHO) declared the rapid spread of cases of COVID-19 a pandemic on 11th March, 2020. The COVID-19 pandemic is a challenging situation for the general population and especially for eye care practitioners working in close proximity to patients [1–3]. At the beginning of March 2020, different authorities for example the “Zentral Verband für Augenoptik und Optometrie” (ZVA, National Association of Optics and Optometry, Germany) and the College of Optometrists (UK) [4] or the “Berufsgenossenschaft” (BG, German Employer’s Liability Insurance Association) published special recommendations in terms of personal protective equipment. During the current full lockdown (mid-March to end of April), almost all optometry and optic practices in Germany, Austria and Switzerland were only offering emergency services during restricted opening times [5]. Nevertheless, exit strategies are discussed and it is of interest to know how eye care practitioners plan on protecting themselves against infection of COVID-19 during the upcoming months, after the lockdown phase. During this time there will still be a high risk of infection from COVID-19 until population immunity (herd immunity) has developed

and/or vaccine is available. The aims of this first phase of the project were (i) to evaluate which personal protective equipment eye care practitioners intend to use during the upcoming months and (ii) what they plan on asking their patients to use in their clinical practices. Subsequently, a following survey will evaluate how they are actually working then to see how attitudes may have changed in the meantime. This short paper summarizes the first survey’s results briefly.

2. Methods

A social-media survey (SurveyMonkey Europe UC, Dublin, Ireland) was carried out to ask the community of optometrists and opticians in Germany, Austria and Switzerland: (i) which personal protective equipment they will use in the future (after lockdown and before herd immunity and / or vaccine availability), and (ii) what they will ask the patient to do during the same time periods. Based on 12 questions, use of personal protective equipment was evaluated in different sub-categories such as fitting contact lenses or doing refractions (i.e. longer duration close working distance tasks; < 0.5 m, commonly a practitioner is 10–20 min at this close distance), anatomical fitting of

* Corresponding author at: Steingasse 15, 69469, Weinheim, Germany.

E-mail address: ovr@heiko-pult.de.

What is the personal protective equipment eye care practitioner will consider to use or ask the patient to use after lock-down phase

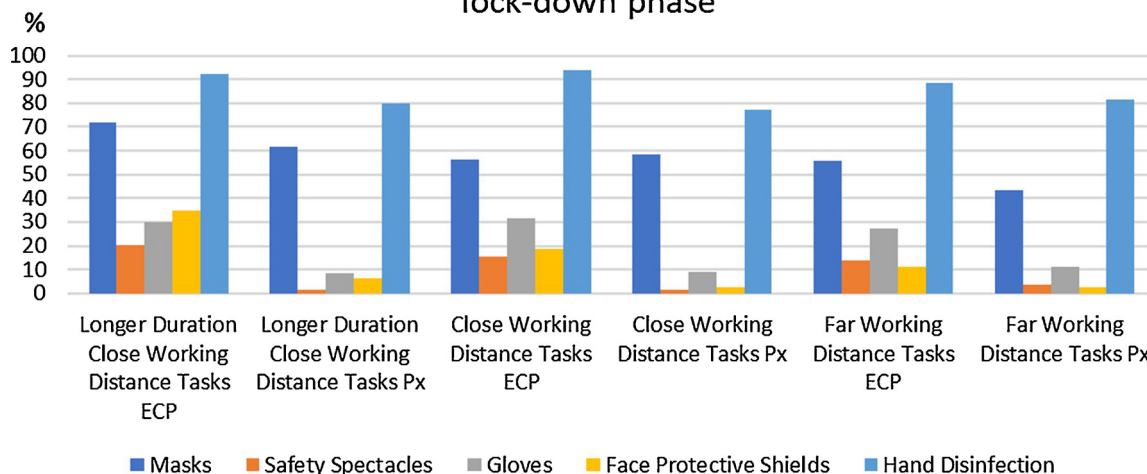


Fig. 1. Eye care practitioner (ECP) expectations for personal protective equipment (PPE) use by eye care practitioner and patient (Px) after removal of COVID-19 lockdown.

frames, lens and frame measurements (i.e. close working distance tasks; < 0.5 m, commonly a practitioner is less than 5 min at this close distance) as well as assisting patients in frame choice (i.e. far working distance tasks; ~1 m distance). From 08 March 2020 until 13 March 2020 257 eye care practitioners completed the survey. The survey was carried out in facebook groups exclusive for optometrists and opticians. Furthermore, the “Vereinigung deutscher Contactlinsen Spezialisten und Optometristen” (VDSCO), (Association of Contact Lens Specialists and Optometrists) forwarded the link of the survey to their members. As this is a first short excerpt of the survey project, only the most important descriptive data are presented.

3. Results

Most eye care practitioners intended to wear surgical masks (44 %) or FFP2/3 masks (31 %) during refractions, and 39 % and 30 % during contact lens appointments, respectively. 62 % of the eye care practitioners also expected the patients to wear masks during these “longer duration close working distance tasks”. This number is higher than in “close working distance tasks” or “far working distance tasks” (Fig. 1). For all tasks, 90 % of the eye care practitioners would in addition to hand washing disinfect their hands, and around 80 % expect the patients to also do so.

Less than one third of eye care practitioners favoured safety spectacle wear, gloves and / or face protective shields (Fig. 1). 73 % planned on disinfecting frames after they would have been tried on by customers. 93 % of those who intended to wear FFP2 or FFP3 masks during contact lens appointments and refractions in the future, expected their patients to wear masks, too (surgical masks: 68.5 % and FFP2 or FFP3: 24.1 %). An FFP mask (“Filtering Face piece Particles”) is an individual respirator protection mask. It is designed to protect the wearer against the inhalation of both droplets and particles suspended in the air (FFP2 category: masks which filter at least 94 % of aerosols (inward leakage < 8%); FFP3 category: masks which filter at least 99 % of aerosols (inward leakage < 2%)). In contrast, a surgical mask is a medical equipment designed to prevent the wearer from spreading droplets in the vicinity.

100 % of those, who planned on wearing face shields during a refraction, favour surgical mask wear and 50 % of them intended to wear safety spectacles and 25 % to wear gloves. In the comments’ section, it was very rarely stated by the eye care practitioners (2%) that they

would not consider any PPE in future, or the other extreme that they would wear face shields plus safety spectacles plus FFP3 masks plus gloves and overalls (5%). Some also said that they would not offer “long duration close distance” services until this situation would have returned back to normal.

4. Discussions

These results represent the preliminary data of the full project. Nevertheless, these data may provide interesting perspectives on current eye care practitioners’ attitudes to be properly prepared after lockdown, as the situation remains in flux and the timeline for any change in social-distancing restrictions is not clear.

The current recommendations of the ZVA and BG for providing optometric/optical service is to exclude all symptomatic COVID-19 patients from personal services using the patient’s history, and all those who may potentially have been infected. The ZVA also recommend frequent handwashing, avoidance of handshaking, 1.5 m distancing if possible, disinfection of surfaces, and cleaning customers’ spectacles before adjusting or repairing them. Mask or glove wear or other personal protective equipment when attending to potentially asymptomatic COVID-19 patients was not explicitly recommended, especially as there was a shortage of personal protective equipment. The BG additionally recommend disposable gloves and surgical masks, if available [6]. This survey revealed that eye care practitioners tend to follow these recommendations even more strictly, particularly by intending to ask their patients to use personal protective equipment for some parts of the eye examination or consultation. Most of the eye care practitioners will use hand disinfection and mask wear for eye care practitioners and patients alike. This is interesting, because it was stated in the survey, that hand disinfection does not mean hand washing. A minority of the eye care practitioners intended on using maximal safety levels including face shields, gloves, safety spectacles, overalls and FFP3 masks, in contrast to the other extreme of eye care practitioners, who did not plan on using a greater level of personal protective equipment than before the COVID-19 outbreak.

5. Conclusions

In summary, eye care practitioners favoured a higher standard of personal protective equipment than they would have before the corona

outbreak. Most eye care practitioners will want to wear masks themselves as well as asking their patients to do so, combined with hand disinfection. Around one third of them planned on using additional personal protective equipment beyond these steps. The results also reflect the uncertainty of eye care practitioners in proper use of personal protective equipment in the COVID-19 pandemic.

Declaration of Competing Interest

No financial interests, no funding.

References

- [1] L. Jones, K. Walsh, M. Willcox, P. Morgan, J. Nichols, The COVID-19 pandemic: important considerations for contact lens practitioners, *Contact Lens and Anterior Eye* (2020).
- [2] M. Zhou, F. Tang, Y. Wang, H. Nie, L. Zhang, G. You, et al., Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China, *J Hosp Infect* (2020).
- [3] F. Zeri, S.A. Naroo, Contact lens practice in the time of COVID-19, *Contact Lens and Anterior Eye* (2020).
- [4] Coronavirus (COVID-19) pandemic: guidance for optometrists, (2020) (Accessed 01.April 2020 2020), <https://www.college-optometrists.org/the-college/media-hub/news-listing/coronavirus-covid-19-guidance-for-optometrists.html>.
- [5] Conflicts of the corona crisis on medium sized opticians [Konflikte der Corona-Krise auf die mittelständischen Augenoptiker], (2020) www.zva.de/zva-blitzumfrage-zur-corona-krise.
- [6] Dealing with people in the medical technology area [Umgang mit Personen im Medizintechnischen Bereich], (2020) <https://www.bgetem.de/presse-aktuelles/themen-und-geschichten/coronavirus-disease-2019-covid-19/branchenspezifische-praeventionsmassnahmen>.

[1] L. Jones, K. Walsh, M. Willcox, P. Morgan, J. Nichols, The COVID-19 pandemic: