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Letters to the editor

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COVID-19, sweat, tears... and myopia?

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EDITOR: Myopia is a common ocular disorder, with around 2.5 billion myopic people around the world. The World Health Organization estimates that half of the population of the world may be myopic by 2050, with as much as 10 per cent highly myopic.[1] More preoccupying than school myopia, high myopia (that is, more than −5.00 D) is associated with sight-threatening ocular disease such as maculopathy, posterior staphyloma, choroidal neovascularisation, retinal atrophy, retinal detachment and optic neuropathy.[2]

Several authors classify myopia as an epidemic,[2] particularly in Asiatic populations in which the prevalence is around 80 per cent in the age group over 15 years.[3] In that respect, it seems to be clear that children and teenagers do not develop myopia without relevant environmental and cultural exposures. Notwithstanding genetic susceptibility,[4] environmental and cultural risk factors are predominant, that is, intensive education, prolongated near work and limited time outdoors.[5,6]

In December 2019, a coronavirus epidemic initially described in China and named SARS-Cov-19, rapidly spread around the world to become the most severe pandemic since Spanish influenza.[7] This epidemic is ongoing at the time of writing. To avoid or reduce the contagion, authorities in conjunction with the World Health Organization promulgated quarantine status in the majority of worldwide countries. Coronavirus restrictions with an unprecedented containment apply to more than three billion people (more than a third of the world population). People are required to remain at home for several weeks or months, without outdoor occupational or leisure activities.

As a consequence of this containment, most children, teenagers and adults spend their time reading books, watching television, playing videogames or using computers, tablets and smartphones to access on-line media and social networks. The use of these electronic devices will dramatically increase screen time during the containment, overstimulating accommodative effort caused by the associated close working distances. This excessive near work might represent a greater risk of myopia for those with accommodative dysfunctions.[8]

Containment by definition limits the time outdoors. Protective effect on myopia of time outdoors and sunlight exposure can be due to both distance vision and biochemical secretion from natural light exposure,[9] that can prevent the pathological axial elongation of the eyes – a characteristic of myopia.[10] Even if the duration of the quarantine would be short – perhaps not exceeding two months – this is the first time that over three billion people are simultaneously exposed to the influence of cumulative, well-proven, risk factors for myopia.

Preventive strategies during containment should also focus on visual habits, particularly in children and young adults. Evaluation of myopia over the quarantine periods and during the forthcoming months would be salient.

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Evaluation of the Slit Lamp Shield to reduce droplet exposure

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EDITOR: The current COVID-19 global pandemic has brought infection control measures

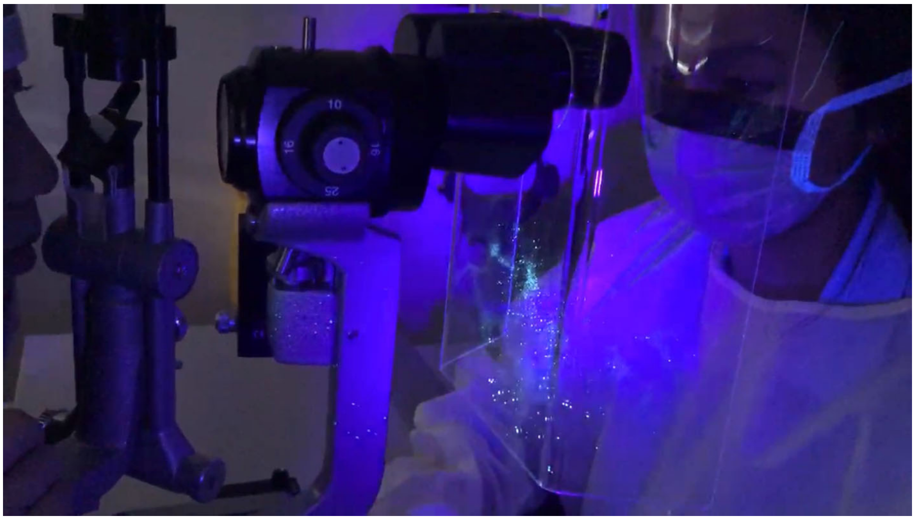

Figure 1. Fluorescent dye is concentrated on the outer aspect of the Slit Lamp Shield, while there is no dye on the mask or face shield of the clinician

to the forefront of international attention. Patients with SARS-CoV-2 infection may be asymptomatic but infectious. The face-to-face proximity of clinicians and patients during slitlamp examination potentially places eye-care providers at a high risk of aerosolised particles from respiratory droplets.[1] Similarly, patients may be at risk from an unknowingly infected clinician, which could have disastrous consequences, especially in a busy clinic with a large proportion of elderly patients.

Recognising this potential risk, we recently designed – and had urgently manufactured – the Slit Lamp Shield, made in Australia from clear acrylic (plexiglass). Our Slit Lamp Shield is distinct from other slitlamp breath guards by having angled side-wing panels that provide a large physical barrier while still allowing access to the slitlamp controls.

The use of slitlamp barriers has become increasingly common during the current COVID-19 global pandemic. The American Academy of Ophthalmology has recommended the use of commercially manufactured barriers that can be regularly disinfected.[2]

We decided to evaluate the ability of the Slit Lamp Shield to reduce potential droplet exposure. In our simulation (Video S1), a clinician attired in personal protective equipment including surgical mask and face shield was positioned in the examination position. A staff member in the patient position executed a single release of a commercially available fluorescent dye spray (VeriClean; Diversey Inc, Fort Mill, SC, USA). This was performed both without and with the Slit Lamp Shield.

Without the shield, dye was found on the clinician's face shield, mask, gown, gloves, desk and the machine itself. When the experiment was repeated with the shield in position, most of the dye was located on the outside of the shield, with smaller amounts on the clinician gloves, desk and machine (Figure 1). Importantly, there was no dye on the clinician's face shield or mask. We repeated the experiment on several occasions and obtained similar results.

We acknowledge the limitations of our methodology including that it is not validated for the projectile direction, speed and turbulence of a true cough and is performed in an artificial experimental setting. Nevertheless, this demonstration illustrates the potential benefit of using a barrier shield during slitlamp examination. It is important to remember to continue to use other personal protective equipment as guided by local protocols, and that frequent disinfection of the shield, equipment and surfaces is still required.

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Supporting information

Additional supporting information may be found in the online version of this article at the publisher's website:

Video S1. A simulated evaluation of the effectiveness of the Slit Lamp Shield.

Re: Evaluation of choroidal changes in adolescent idiopathic scoliosis using enhanced depth imaging optical coherence tomography

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EDITOR: We read with great interest the article entitled 'Evaluation of choroidal changes in adolescent idiopathic scoliosis using enhanced depth imaging optical coherence tomography' recently published in your journal. In this study, the authors compared the choroidal thickness (CT) of patients diagnosed with adolescent idiopathic scoliosis (AIS) with age-matched healthy subjects by adopting an enhanced depth imaging optical coherence tomography (EDI-OCT) device.[1] In this regard, although the authors should be congratulated for the relatively large sample size and for having found a significant reduction in CT in patients with AIS, we would like to point out some methodological concerns from an ophthalmological point of view.

First, the authors did not clarify if they considered systemic diseases such as diabetes or hypertension, besides a history of cataract, glaucoma, retinal diseases and intraocular surgery, in the exclusion criteria. In fact, they have been proven to significantly influence CT.[2,3] Hence, we deem that a comprehensive screening for systemic diseases should have been provided by the authors in order to rule out some possible important confounding factors.