

## Commentary: Not just COVID-19 pandemic, it is a pandemic of digital eye strain among children

Since the commencement of the coronavirus disease 2019 (COVID-19) pandemic, governments have imposed unmatched public health measures such as travel bans, workplace distancing, and closure of schools to reduce the size of the outbreak as well as its peak.<sup>[1]</sup>

School closure definitely protects children from COVID-19. At the same time, it is challenging as the children are lacking not only physical activities, but also the classroom interaction that is very essential for their physical and mental well-being.<sup>[2]</sup>

The closure of schools has affected the education of more than 1.5 billion children and youths worldwide. Educational institutions all over the world have shifted to the online teaching platform. Digital learning, during this COVID-19 pandemic, leads to a marked increase in digital device use among children of school-going age. Numerous studies have documented the significant increase in use of digital devices owing to digital learning. In a study by Mohan *et al.*,<sup>[3]</sup> 36.9% of children were noted to spend >5 h on digital devices.

Anyone who uses gadgets excessively without adequate breaks can present with eye strain and musculoskeletal issues as part of the digital eye strain spectrum. This would demand assessment of refractive error, accommodation and vergence assessment, dry eye evaluation, and ergonomic assessment. Smartphone, tablet, and PC were found to be significantly associated with eye pain, headache, eye fatigue, eye redness, and blurred vision.<sup>[4]</sup>

Portello *et al.*<sup>[5]</sup> divided Digital Eye Strain (DES) symptoms into two groups: 1) accommodation-related symptoms (headache, eye pain, and blurred vision for near objects) and 2) dryness-related symptoms (foreign body sensation, watering, burning, itching, and eye redness).

In this current study, the results indicate that dryness-related symptoms are more common than those related to accommodation when screen time is increased. Spending more than 3 h a day using a display device was found to be a significant risk factor for headaches. Eye pain, foreign body sensation, and watering were significantly associated with over 4 h screen time, while spending over 5 h a day using a display device was found to be a significant risk factor for eye fatigue and eye redness. The most common symptom reported in this study was headache. Also, this study noted use of significantly higher screen time by boys compared to girls, which is comparable to the results reported by Mohan *et al.*<sup>[3]</sup>

*Jai Kelkar, Aditya Kelkar, Priyanka Singhvi*

Department of Ophthalmology, National Institute of Ophthalmology, Pune, Maharashtra, India

Correspondence to: Dr. Jai Kelkar, 1187/30, Off Ghole Road, Near Mahatma Phule Museum, Shivaji Nagar, Pune, Maharashtra – 411005, India. E-mail: drjkelkar@gmail.com

### References

1. Pellegrini M, Bernabei F, Scordia V, Giannaccare G. May home confinement during the COVID-19 outbreak worsen the global burden of myopia? *Graefes Arch Clin Exp Ophthalmol* 2020;258:2069-70.
2. Hussaindeen JR, Gopalakrishnan A, Sivaraman V, Swaminathan M. Managing the myopia epidemic and digital eye strain post COVID-19 pandemic—What eye care practitioners need to know and implement? *Indian J Ophthalmol* 2020;68:1710-2.
3. Mohan A, Sen P, Shah C, Jain E, Jain S. Prevalence and risk factor assessment of digital eye strain among children using online e-learning during the COVID-19 pandemic: Digital eye strain among kids (DESK study-1). *Indian J Ophthalmol* 2021;69:140-4.
4. Moon JH, Kim KW, Moon NJ. Smartphone use is a risk factor for pediatric dry eye disease according to region and age: A case control study. *BMC Ophthalmol* 2016;16:188.
5. Portello JK, Rosenfield M, Bababekova Y, Estrada JM, Leon A. Computer-related visual symptoms in office workers. *Ophthalmic Physiol Opt* 2012;32:375-82.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_214_22

Cite this article as: Kelkar J, Kelkar A, Singhvi P. Commentary: Not just COVID-19 pandemic, it is a pandemic of digital eye strain among children. *Indian J Ophthalmol* 2022;70:993.