

## Will COVID-19 pandemic-associated lockdown increase myopia in Indian children?

Dear Editor:

Children's lives revolve around playing outdoors, reading, indoor games, watching television but the Corona virus disease 19 outbreak has left them with limited options. Like most other Asian countries, India has also seen a gradual increase in the incidence and prevalence of myopia.<sup>[1]</sup> Increased screen-time, prolonged near work, reduced outdoor activities are some of the important risk factors for myopia according to various studies.<sup>[2,3]</sup> Countries like China, where schools have replaced books with tablets and computers, evidently have a higher incidence of myopia.<sup>[4]</sup>

Likewise, Indian schools have also begun to gradually adopt digital teaching methods.<sup>[5]</sup> But the outbreak of COVID-19 has made it mandatory for all classes to be held online. In addition to classes being held online, class notes are circulated through WhatsApp™ groups or email. Hence, a child on an average spends about 4-6 hours on these devices for academic purpose in addition to playing on the hand-held devices.

With the "lockdown" issued by the Government of India, people are forced to stay indoors. Children are encouraged to stay indoors due to the fear of contracting the COVID-19 infection. Furthermore, with parents having to work from home, they are forced to hand these devices to even infants to keep them engaged.

Free games, online storybooks, online courses, online streaming services like Netflix™ and Amazon™ video, re-telecast of popular TV shows like Mahabharat, Ramayana are some of the alluring offers made to the citizens of India to ensure that they confine themselves to their homes.

Will this lead to a forced adaptation of digital teaching over traditional teaching methods in future?

In our pediatric ophthalmic outpatient department, we had ( $n = 3540$ ) visits in March and April 2019 with 80% ( $n = 2832$ ) being refractive errors, and approximately 80% ( $n = 2265$ ) were myopia and myopic astigmatism. This year, this phase had a lockdown and we had 917 visits in March and April 2020 with 78% ( $n = 733$ ) being refractive errors, and approximately 79% ( $n = 578$ ) were myopia and myopic astigmatism.

Can this change in trend of activities of children lead to an increased incidence of myopia and its progression in children with pre-existing myopia? We have to ponder about these questions and they are unlikely to be answered soon.

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### Conflicts of interest

There are no conflicts of interest.

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### References

1. Saxena R, Vashist P, Menon V. Is myopia a public health problem in India? *Indian J Community Med* 2013;38:83-5.
2. Saxena R, Vashist P, Tandon R, Pandey RM, Bhardawaj A, Gupta V, *et al.* Incidence and progression of myopia and associated factors in urban school children in Delhi: The North India Myopia Study (NIM Study). *PLoS One* 2017;12:e0189774.
3. Sherwin JC, Reacher MH, Keogh RH, Khawaja AP, Mackey DA, Foster PJ. The association between time spent outdoors and myopia in children and adolescents: A systematic review and meta-analysis. *Ophthalmology* 2012;119:2141-51.
4. Chen M, Wu A, Zhang L, Wang W, Chen X, Yu X, *et al.* The increasing prevalence of myopia and high myopia among high school students in Fenghua city, eastern China: A 15-year population-based survey. *BMC Ophthalmol* 2018;18:159.
5. Jha N, Shenoy V. Digitization of Indian education process: A hope or hype. *IOSR JBM* 2016;18:131-9.

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