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LETTER TO THE EDITOR

Comment on: "Mean cycloplegic refractive error in emmetropic adults: The Tehran eye study"

Dear Editor,

I am writing in regard to the article titled "Mean Cycloplegic Refractive Error in Emmetropic Adults: The Tehran Eye Study" published by author Rozema JJ et al.[1] While the study provides valuable understandings into refractive development and the utility of cycloplegic measurements, I would like to highlight several limitations that warrant further consideration and discussion.

The reliance on the Bigaussian fitting approach, while innovative, assumes a strict bimodal distribution of refractive errors, potentially oversimplifying the continuum of refractive states observed in the general population.[2] This model segregates the population into "emmetropized" and "dysregulated" groups without considering intermediate refractive states or the influence of mild astigmatism, which could skew the interpretation of refractive patterns. Furthermore, the historical comparison with older datasets, such as Sorsby's 1960 study, may not fully account for generational shifts in refractive development influenced by modern lifestyle changes, including increased screen time and reduced outdoor exposure.[3]

The study's exclusion of left-eye data to avoid interocular correlation, though methodologically justifiable, might have disregarded potential asymmetries in refractive development that could provide additional insights. Moreover, the non-cycloplegic results, though consistent with previous literature, are derived from a methodology that inherently underestimates hyperopia due to accommodative tonus.[4] While the authors advocate for cycloplegic refraction as the gold standard, the implications for non-cycloplegic clinical settings remain underexplored.

Lastly, while the Tehran Eye Study data are invaluable, they were collected over two decades ago. The refractive profiles presented may not accurately reflect current trends, particularly given the documented global rise in myopia prevalence.[5] This temporal gap raises questions about the study's relevance to contemporary populations.

In conclusion, while the authors have addressed a critical gap in understanding refractive targets in young adults, the limitations outlined above suggest the need for caution in generalizing these findings. Further studies, incorporating more diverse populations, modern refractive data, and dynamic modeling approaches, are necessary to build on this foundational work.

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Conflicts of interest

The author has no conflicts of interest to declare.

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