

Comment on: Observation of peripheral refraction in myopic anisometropia in young adults

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Dear Editor,

We read with great interest the recently published article titled “Observation of peripheral refraction in myopic anisometropia in young adults” by Du *et al*^[1]. The study conducted at the InEye Hospital of Chengdu University of TCM provides valuable insights into the relationship between anisometropia and peripheral refraction in myopic young adults. We commend the authors for their thorough investigation and adherence to ethical guidelines. While the study contributes significantly to our understanding of myopic anisometropia, we would like to draw attention to some limitations that merit consideration for a comprehensive interpretation of the findings.

The study acknowledges the enrollment of 130 participants, yet it is essential to recognize the potential impact of sample size on the generalizability of the results. Additionally, further exploration with a larger sample size and potentially grouping based on the severity of anisometropia could offer more nuanced insights into the relationship between myopia, corneal morphology, and retinal peripheral refraction.

The study period spans from October 2022 to January 2023. Given the dynamic nature of refractive changes and potential seasonal variations, a more extended observation period

might provide a more comprehensive understanding of the relationships observed^[2]. While the inclusion and exclusion criteria are outlined, there is a need for further explanation of certain choices^[3]. Specifically, the rationale behind selecting the age range of 18 to 40y and the degree of cylindrical mirror ≤ 3.00 D should be elaborated upon to justify their relevance to the study’s objectives. The study touches upon the impact of peripheral retinal defocus on eye growth and refractive development. However, a deeper exploration of the underlying mechanisms or potential confounding variables influencing defocus could strengthen the theoretical foundation of the observed phenomena^[4]. Notwithstanding these drawbacks, the study makes a significant addition to the body of knowledge regarding myopia. By addressing these issues, it may be possible to improve the significance of the results and direct future studies in this field.

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Authors Reply to the Editor

Dear Editor,

We would like to express our gratitude to Chaurasiya *et al* for their thoughtful feedback on our article “Observation of peripheral refraction in myopic anisometropia in young adults”. We also extend our heartfelt appreciation

to the editor for providing us with the opportunity to further discuss our article. We fully agree with and appreciate the commentators' suggestions. Longer observation periods, larger sample sizes, subgroups based on the severity of anisometropia, and a more in-depth exploration of the intrinsic mechanisms or potential confounding variables affecting defocus could all contribute to a more comprehensive understanding of the relationship between myopia, corneal morphology, and retinal peripheral refraction.

The participants in this study were myopic patients who were candidates for corneal refractive surgery and underwent preoperative evaluations. Therefore, we selected individuals between the ages of 18 and 40y as our inclusion criteria, although this may have introduced some selection bias. Our team observed peripheral defocus in myopic patients with similar spherical diopters but different cylinder diopters. These patients were divided into three groups based on their cylinder diopters: 0 to 1.5 D, 1.5 to 3.0 D, and >3.0 D. We found that cylinder diopters ranging from 0 to 3.0 D had a relatively minor impact on peripheral defocus, but cylinder diopters exceeding 3.0 D significantly affected peripheral defocus in certain sectors of the retina. Consequently, only myopic patients with cylinder diopters of 3.0 D or less were included in our study. Additionally, our team recently investigated the retinal peripheral refraction of 1490 Chinese adults with different refractive errors related to myopia. An interesting

observation was that the peripheral hyperopic defocus in the high myopic group [spherical equivalent (SE) < -6.0 D] was lower than that of the moderate myopic group (SE, -3.0 to -6.0 D) in certain areas of the retina. Furthermore, a correlation was identified between age and peripheral refraction. Therefore, in future studies on retinal peripheral refraction, it is essential to adopt more stringent inclusion and exclusion criteria for participants, particularly regarding refractive error and age range, to enhance the reliability of study findings.

Thank you once again for Chaurasiya *et al*'s constructive feedback and thoughtful suggestions regarding our article. The comments are worthwhile and very helpful for improving our article. We will take these suggestions and address them in future studies to make our findings more accurate and reliable and to provide valuable guidance for future research in this area. We look forward to continuing our in-depth discussions and research with them in this field.

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