

# Changes in intraocular pressure with varying near viewing distance among university students

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## Abstract

**Purpose:** The purpose of the study was to investigate the changes in intraocular pressure (IOP) with different accommodation requirements at different near distances (30cm, 40cm, 50cm).

**Method:** This prospective cross-sectional study was conducted from April to June 2024 at the Optometry Clinic of Brainware University and included 195 participants aged 18 to 30 years. IOP was measured using the Tono-Pen® AVIA tonometer at three (30cm, 40cm, 50cm) different near viewing distances to monitor fluctuations.

## Result:

Out of 195 subjects, 79 men and 116 women. The mean age of the participants was  $22.5 \pm 1.47$  years. The Friedman test revealed significant increase in IOP for both eyes while changing viewing distance from 30cm to 50cm ( $\chi^2= 192.45$ ,  $p < 0.05$ ), highlighting the impact of accommodation on IOP. Furthermore, the Kruskal-Wallis test indicated no significant differences in IOP across subjects with varying levels of myopia at any distance, and the Mann Whitney test showed no significant differences in IOP between gender. These findings suggested the clinical importance of accommodation on IOP at different distances.

## Conclusion

The study emphasizes the importance of considering working distance and accommodation when assessing intraocular pressure dynamics, while noting that gender and age do not significantly affect IOP measurements.

**Key Words:** Intraocular Pressure (IOP), Accommodation, Viewing Distance