

## ANALYSIS OF PUPIL MOBILITY IN PATIENTS DIAGNOSED WITH DEPRESSION: PRELIMINARY RESULTS

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**BACKGROUND AND AIM:** Pupil movements have been assessed in depression in terms of pupil dilation; however, they have not been sufficiently evaluated in terms of overall pupil mobility. Our study aims to determine whether pupil mobility in patients with depression differs from that in healthy individuals, with pupil movement analyzed using MediaPipe on visual data.

**METHODS:** The study was approved by the Zonguldak Bülent Ecevit University Clinical Studies Ethical Committee with approval number 2024/21. A total of 22 participants were included in the depression group and 22 in the healthy control group. In our study, we used MediaPipe (Google,n.d.) to measure pupil movements from images captured by POV glasses, documenting naturalistic interactions. Participants were asked the following question: Could you describe how your day goes from when you wake up in the morning until you go to bed at night? We then measured the total pupil movement by combining the movements of both the right and left pupils.

**RESULTS:** There was no significant difference in age between the groups (mean age for depression group: 37.1, mean age for control group:37.3,  $p=0.96$ ), nor in gender distribution (depression group:11 males,11 females; control group:11 males,11 females,  $p=1$ ). The difference in total pupil movement between the depression and control groups was not statistically significant ( $p=0.32$ ), with a mean rank of 24.36 for the depression group and 20.64 for the control group.

**CONCLUSIONS:** In our study, no significant difference was found between the two groups regarding pupil mobility. The absence of any differences and the slightly higher mean rank of the control group in the preliminary results maybe attributed to the fact that the control group established more eye contact and refrained from moving their eyes during the face-to-face interview, or it could be due to the relatively small sample size in our study.

**Keywords:** Depressive symptoms, facial expression, gaze behavior, pupil movement, visual attention