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Recognition of emotional faces and judgment of affective scenes in Parkinson's disease

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Introduction: Non-motor symptoms in Parkinson's disease (PD) include emotional dysfunctions.

Objectives: This study aimed to investigate PD patients' ability to recognize the emotional valence of others' facial expressions and evaluate the congruity between their own emotional responses and the affective content of scenes.

Methods: Forty PD patients (mean age ± SD 64.50 8.19 years; 27 men) were included in the study. Exclusion criteria were a previous history of psychiatric disorders, treatment with Deep Brain Stimulation and the presence of cognitive impairment. Forty healthy individuals (64.95±8.25 years; 27 men) were the control group. All subjects were evaluated through the Ekman 60-Faces test and the International Affective Picture System (IAPS) test [1-2]. The accuracy in recognizing the emotional valence of facial expressions and affective scenes was compared between groups using linear mixed models. Pearson's correlation was performed to test the association between accuracy measures.

Results: The groups did not differ in sex composition, age, education years, and Mini-Mental State Examination scores. Patients showed a lower recognition accuracy of facial expressions (68.54% ± 15.83%) than healthy participants (78.67% ± 12.04%; $p < 0.001$). Patients showed lower recognition accuracy for faces expressing fear, sadness, and anger than the control group (all $p < 0.020$). No difference was detected for faces expressing disgust, surprise, and happiness (all $p \geq 0.25$). PD patients showed lower accuracy in recognizing the emotional valence of affective scenes (66.75% ± 14.59%) than healthy participants (74.83% ± 12.65%; $p = 0.010$). Pearson's correlations indicated that higher accuracy in recognizing the emotional facial expressions was associated with higher accuracy in classifying the valence of affective scenes in patients ($r = 0.57$, $p < 0.001$) and healthy participants ($r = 0.57$, $p < 0.001$).

Conclusions: Lower accuracy in PD patients may reflect maladaptive affective processing within specific neural networks.

References:

[1] Ekman P, Friesen WV (1976) Pictures of facial affect (Consulting Psychologists, Palo Alto, CA).
[2] Lang PJ, Bradley MM, Cuthbert BN (1997) International affective picture system (IAPS): technical manual and affective ratings (NIMH Center for the Study of Emotion and Attention, University of Florida, Gainesville, FL).