Discrimination of facial expressions in patients with Parkinson's disease

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Previous studies suggested that patients with Parkinson's disease (PD) could not recognize negative facial stimuli correctly, but some criticized on this point.

The possible confounded variables could be the presentation time of target faces and the motor severity of PD.

In the present study, we adopted fast emotional discrimination task (FEDT) to investigate the performance of PD in discriminating emotional facial expressions.

The face discrimination in FEDT was more similar to that in the real world.

Experiment 1 (PD v.s. Healthy Control, HC)

- Participant:
  - AGE  BDI-II  MMSE
  - PD (n=28) 61.68  11.61  27.61
  - HC (n=28) 57.39  2.93  28.29
- PDs discriminated happy, sad and angry faces longer than healthy controls did,
- PDs also had less accuracy in the condition of happy and sad faces compared with healthy controls.

Experiment 2 (PD with different motor severities v.s. HC)

- Participant:
  - AGE  BDI-II  MMSE  UPSRD III
  - HC (n=28) 57.39  2.93  28.29
  - PDs with lower motor score (n=14) 60.50  7.93  28.14  25.07
  - PDs with higher motor score (n=14) 62.86  15.29  27.07  49.71
- In the condition of sad face, PDs with lower motor severity had less accuracy than HC did.
- Compared with HC, PDs with higher motor severity responded slower to happy, sad and angry faces, and they also had less accuracy to happy and angry faces.

Discussion and Conclusion

- To our knowledge, the present study is the first one that found PDs had selective deficits in discriminating positive faces.
- The motor severity in PD had impact on discriminating facial expressions, and this ability would be getting worse with the progress of motor severity.

Acknowledgement: Supported by National Science Council of Taiwan, 100-2410-H-039-001-MY2; E-mail: lchsu@mail.cmu.edu.tw