

Social cognitive deficits in euthymic bipolar patients are associated with worse sensorimotor processing and non-social neurocognitive function.

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Background

Euthymic patients with bipolar disorder (BD) exhibit social cognition deficits, especially in Theory of Mind (ToM) and emotional recognition, leading to significant psychosocial disability despite clinical remission (Miskowiak et al., 2019, De Siqueira Rotenberg et al., 2020, Samamé, 2013). Recent studies suggest non-social neurocognitive and sensorimotor underpinnings of social cognition in schizophrenia (Lu et al., 2021, Sjølie et al., 2020). Whether relevant underpinnings exist in BD have not been studied.

Sensorimotor deficits, such as goal-directed manual aiming movements, are an important phenomenological aspect of BD that remains significant in the euthymic phase (Lage et al., 2013) {Lage, 2013, A kinematic analysis of manual aiming control on euthymic bipolar disorder}. Non-social neurocognitive deficits, although less severe than those in schizophrenia, are functionally relevant and persistent across mood stages in BD (Harvey et al., 2010).

Previous studies have shown that social cognitive, sensorimotor, non-social neurocognitive deficits persist in euthymic stage and may be potential trait markers of BD. However, the association between these domains of BD have not been explored.

Aims & Objectives

To examine the association between sensorimotor processing, non-social and social cognitive function in euthymic patients with BD.

Methods

45 healthy participants and 41 euthymic BD patients were enrolled from the outpatient department. The study examined ToM using the Chinese version of Theory of Mind (CToM) Task, an equivalent task of the Faux Pas Test; emotion recognition using the Diagnostic Analysis of Nonverbal Accuracy 2-Taiwan version (DANVA-2-TW); sensorimotor processing using a joystick tracking task controlled for basic motor function, and non-social neurocognitive function using Wisconsin Card Sorting Test (WCST) and Continuous Performance Test (CPT).

Results

Euthymic patients with BD performed significantly worse than healthy participants in sensorimotor processing, non-social neurocognitive function and social cognition. Both in healthy participants and euthymic BD patients, non-social neurocognitive function is correlated with social cognition. However, only in euthymic BD patients, sensorimotor processing is significantly associated with social cognition.

Discussion & Conclusion

These results suggest the involvement of sensorimotor abnormalities and non-social neurocognitive impairment in social cognitive deficits of euthymic patients with BD. The social cognition deficits we observed may at least partially reflect a more general deficit in the perception-action cycle. Unlike non-social neurocognitive function, sensorimotor processing and social cognition has a disease-specific association in BD patients. Sensorimotor abnormalities may be an important target when considering cognitive remediation in patients with BD.