

Abstract

Background: “Theory of mind” (ToM) refers to the ability to judge the mental states of self and others. It has been proposed that ToM impairment underlies specific symptoms of schizophrenia. There is substantial evidence demonstrating the presence of ToM impairment in schizophrenia patients but most studies had focused on patients with chronic illness. It is also not clear whether ToM impairment is state-dependent or a trait marker of schizophrenia. The main objective of the present study was to identify whether ToM impairment could be found in first-episode schizophrenia patients and their non-psychotic first-degree siblings. We also aimed to examine whether there is any differential impairment in the affective and the cognitive components of ToM in schizophrenia patients, and whether their non-psychotic relatives would share similar pattern of differential impairments.

Methods: In this cross-sectional case-control study, participants were 41 patients with first-episode schizophrenia, 43 non-psychotic first-degree siblings and 42 healthy controls. Their performance in affective and cognitive ToM was measured by two paradigms: (1) a computerised “Yoni Task” which assessed one’s ability to judge first- and second-order affective versus cognitive mental state attribution based on verbal

and eye gaze cues; and (2) the Faux Pas Task – a verbal story task that also tapped into integration of affective and cognitive ToM. A battery of basic neurocognitive tests was also administered. We analysed the group difference in ToM by MANOVA. We also analysed the differential impairments of affective and cognitive ToM between groups using repeated measures ANOVA.

Results: Compared to controls, first-episode schizophrenia patients and their first-degree siblings performed worse on second-order affective condition of the Yoni Task and the Faux Pas Task, with siblings having intermediate performance between patients and controls. Patients with schizophrenia performed significantly worse in the second-order cognitive condition of the Yoni Task, but their non-psychotic siblings did not. We did not find any differential impairment in affective and cognitive ToM in patients and siblings.

Conclusion: The presence of ToM impairments in patients with first-episode schizophrenia and their non-psychotic siblings provide evidence to support the notion that ToM deficit may be a trait marker and a putative endophenotype of schizophrenia.