

genome-wide association studies (GWAS) revealed alterations in immune-related genes and/or immune responses in patients with schizophrenia.

However, the structural and functional consequences of the derived results remain to be discovered. Hence, we review selected aspects of this literature, discussing the involvement of major histocompatibility complex (MHC) and cytokines.

Keywords: imaging genetics, inflammation, schizophrenia, neuroimaging, MHC

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Impaired self-referential processing in patients with first-episode schizophrenia: an event-related potential study

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Abstract

In previous studies, Self-referential tasks were set in a first-person perspective, which did not allow an examination of the influence of perspectives on the evaluation of self and others. The objective of the present research is to examine the changes in the physiological correlates of self/other-evaluation based on perspectives, by adding a perspective variable to the previous self-referential tasks. The neuro-physiological correlates of the impaired concept of self and perspective conversion capacity in schizophrenic patients are also examined. Twelve first-episode schizophrenic patients and a control group of 18 subjects participated in the experiment. The task was to evaluate and determine the relevance of presented personality trait adjectives to the object of reference – either self or other, in each reference condition – under two different perspective conditions – self or other. The brainwaves of participants were measured while they were performing the tasks. N2 component, which reflects an inhibition reaction, exhibited greater amplitude when evaluating the object in the third-person perspective than in the first-person perspective, and in the control group compared to the patient group. There was a significant three-way interaction among perspective, reference, and subject groups on N2 amplitude and latency. The late positive component (LPC), which reflects the executive function, showed greater amplitude when the referential object and the perspective were incongruent, compared to congruent conditions. The results suggest that a greater inhibition is necessary in both groups when evaluating objects in the third-person perspective compared to the first-person perspective, and that decentering during self-perspective, self-referential condition only occurs in the control group but not in the schizophrenia patient group. This implies that schizophrenia patients have reduced capacity to objectively evaluate self. Greater LPC amplitude during the reference-perspective incongruent conditions compared to the congruent conditions suggests that more active processing of episodic memory occurs when the perspectives and references are incongruent.

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Dysfunction of intrinsic and extrinsic motivation in schizophrenia: an fMRI study

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Abstract

Motivational deficit is one of the central components of negative symptoms in schizophrenia. Although reward system of the brain including the striatum is known to account for this deficit, little is studied with the focus on intrinsic and extrinsic motivational deficits in the illness. In this study, we evaluated BOLD response in patients with schizophrenia during motivational processing to test the hypothesis of dysfunctional activation related to intrinsic and extrinsic motivation.

Twenty patients meeting DSM-IV diagnostic criteria for schizophrenia and 20 control subjects participated in the study. The fMRI task required participants to accept or deny an avatar's verbal suggestions or questions in the virtual environment. The task comprised 18 intrinsic motivation-related and 18 extrinsic motivation-related questions along with 18 neutral questions, which subjects were required to make true or false judgment to a fact-based thesis.

Repeated measures ANOVA of participants' acceptance rate showed a significant main effect of condition and interaction effect between group and condition. In post hoc analysis, acceptance rate responding to intrinsic motivation were significantly higher than to extrinsic motivation in healthy controls. Imaging analysis resulted in a significant main effect of group for the putamen, middle temporal gyrus and corpus callosum, while main effect of condition was observed for the dorsolateral prefrontal cortex, inferior frontal gyrus and precuneus. Post-hoc analysis resulted in greater activation in the precuneus for intrinsic motivation than for extrinsic motivation.

The behavioral results were correspondent with activation pattern of the precuneus, which showed hyperactivation to intrinsic motivation relative to extrinsic motivation condition in the control group. Intrinsic motivation was known to be related to self-efficacy and retrieval of attitude-relevant memory, which are involved in function of the precuneus. Our findings support results of previous studies that reported the impairment of motivation being linked to self-related memory involving the precuneus in schizophrenia.

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Effect of Anhedonia on Shopping Behavior in Schizophrenia

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