

Abstract

Background: Schizophrenia is associated with memory impairments. Improving memory functions is an important treatment target in the management of patients with schizophrenia. Enactment effect refers to enhancement of memory retrieval resulting from self-execution of action-phrases. Few studies conducted in patients with schizophrenia on enactment effect were confounded by small sample size and methodological limitations of the paradigm. We sought to examine whether patients with schizophrenia could be benefited from enactment effect, using a relatively larger sample and a refined paradigm.

Methods: Participants were 48 patients with schizophrenia and 48 demographic- and IQ-matched controls. We employed the Following Instruction Span Task (FIT) to examine the enactment effect. The FIT assessed the effect of different encoding conditions (subject-performed task (SPT), experimenter-performed task (EPT), verbal task (VT)) and recall conditions (enacted recall, verbal recall) on retrieval of action-phrases. Traditional neurocognitive functions were assessed. MANOVA and mixed model ANOVAs were used to examine the between-group differences in memory and enactment effect, and the within-group differences in memory performance resulted from different “encoding-recall” conditions. Spearman’s

correlations were used to examine the relationship between subject-performed task (enactment effect-enhanced memory), clinical characteristics and other neurocognitive functions.

Results: Compared to controls, patients with schizophrenia performed poorer in a wide range of neurocognitive functions and the overall FIT scores. The FIT data showed the presence of enactment effect, i.e., SPT was superior to VT and EPT in enhancing memory performance, in patients with schizophrenia. The results also showed that “advance knowledge”, during the encoding phase, of the need for enacted recall could enhance memory performance. SPT-enhanced memory function was correlated with visuospatial memory, but not duration of illness, medications dosage and clinical symptoms.

Conclusion: Despite having neurocognitive impairments, patients with schizophrenia could be benefited from SPT, resulting in better memory performance. Importantly, the benefit of enactment effect appears to be unrelated to medications and illness chronicity. Translating our findings to clinical practice might offer help to improve functional outcome in schizophrenia.