FUNCTIONAL BRAIN NETWORKS INVOLVED IN HYPERSALIENCE OF EVIDENCE-HYPOTHESIS MATCHES IN PATIENTS WITH DELUSIONS AND SCHIZOPHRENIA

Schizophrenia patients with delusions make decisions based on less evidence than patients without delusions and healthy controls, an effect referred to as the “jumping to conclusions” (JTC) bias. The JTC bias is explained by the hypersalience of evidence-hypothesis matches (EVH matches) account of delusions, which is a tendency to give too much credence to evidence matching currently held ideas. In this study, consisting of healthy controls (n=41), non-delusional (n=41) and delusional (n=29) patients with schizophrenia, the functional brain networks involved in EVH matches were measured through a probabilistic reasoning task. The task involved presentation of two lakes containing different proportions of black and white fish with a central fish in between, pointing to one of the lakes. Participants determined whether the central fish originated from the lake to which it pointed, and an EVH match condition is when there is a match between the colour of the central fish and the colour of the majority of the fish in the indicated lake. A functional brain network involved in visual attention revealed stronger activation for the weak relative to the strong match condition for healthy controls and non-delusional patients, but for the delusional patients, there was no difference between the weak and strong conditions. This suggests that weak match condition showed hypersalience for the delusional patients as it required the same attentional demands as the strong match condition. Understanding the decision-making biases underlying delusions is important for self-awareness and insight, and provides a possible neuromodulation target for treatment of delusions.