O2.4. THE MISSING PIECE IN THE PUZZLE: COGNITIVE DECLINE IN SCHIZOPHRENIA AND BIPOLAR PATIENTS AFTER THE FIRST EPISODE

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Background: Schizophrenia is associated with a severe cognitive impairment. While it is widely believed that cognitive deficits in schizophrenia remain stable after illness onset, few studies have comprehensively examined longer-term cognitive change from soon after the first episode through to late adulthood. We examined whether schizophrenia patients experience cognitive decline following the first episode, whether this decline is generalized or confined to individual neuropsychological functions, and whether decline is specific to schizophrenia.
Methods: Participants were from a population-based, case-control study of patients with first-episode psychosis followed prospectively up to 10 years post first admission. A neuropsychological battery was administered at index presentation and at follow-up to patients with a diagnosis of schizophrenia and bipolar disorder or mania (n=83), as well as to healthy comparison subjects (n=103).
Results: The schizophrenia group exhibited declines in IQ and individual neuropsychological functions tapping verbal knowledge, executive function, language and visual memory (group by time interaction p values<0.01). The age when progression of deficits where observed differed between functions. There was no decline in verbal memory and processing speed. These functions showed large deficits at the first episode, which remained static thereafter. Cognitive decline in IQ, verbal knowledge and language was not specific to schizophrenia and was also apparent in the bipolar/mania group (p values<0.05). Healthy individuals with low IQ, on the other hand, showed no evidence of decline, suggesting that a progressive course of cognitive impairment is specific to psychosis.
Discussion: Schizophrenia and bipolar/mania patients experience cognitive decline after onset of psychosis. Cognitive remediation efforts should target individual functions during specific time periods.

O2.5. MULTISENSORY INTEGRATION UNDERLYING BODY OWNERSHIP IN SCHIZOPHRENIA AND INDIVIDUALS AT FAMILIAL RISK TO DEVELOP PSYCHOSIS: A STUDY USING THE RUBBER HAND ILLUSION PARADIGM

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Background: Patients with schizophrenia suffer from fundamental self-disturbances and have difficulties integrating and distinguishing between the self and others. For example, they experience that bodily boundaries vanish, that body parts are located at the wrong part of the body or that they are not the subject of their own movements. Such experiences are referred to as disturbances in the sense of body ownership. Although these are well-described psychotic symptoms, surprisingly little is known about their etiology and development. Our aim was to replicate a more flexible sense of body ownership in patients, thereby using a well-controlled experimental procedure (with proprioceptive drift and subjective strength of the illusion. Second, we examine whether increased familial risk to develop psychosis (i.e., offspring of patients with schizophrenia), relative to increased familial risk to develop mood disorders or the absence of familial risk, is related to alterations in RHI measures.
Methods: With a Rubber Hand Illusion (RHI) paradigm, body ownership was assessed in two different cohorts: 1) 54 patients with schizophrenia and 56 age and gender matched controls and 2) 24 children/adolescents with at least one parent with schizophrenia, 33 children/adolescents with at least one parent with bipolar disorder, and 18 age and gender matched controls. In this paradigm, a visible rubber hand and the invisible real hand were stroked either synchronously or asynchronously. Subsequently, proprioceptive drift and subjective RHI were measured.
Results: All groups showed the rubber hand illusion, i.e., a stronger proprioceptive drift and higher subjective ratings of the RHI after synchronous compared with asynchronous stroking (all p<0.001). The effect of synchronicity on subjective RHI was significantly stronger in patients with schizophrenia as compared with healthy individuals (p=0.03). No significant differences were found between children/adolescents with and without increased familial risk to develop psychosis. Last, in patients the subjective RHI was related to severity of delusions (rho=0.36).
Discussion: This study confirms alterations in embodied ownership experiences in patients with schizophrenia, but no evidence was found for impairments in children/adolescence with increased familial or clinical risk to develop psychosis. Longitudinal data are needed to reveal whether impairments in body ownership are predictive of psychosis onset, however, our findings provide suggestive evidence that this is not the case. In addition, that group differences were found in multisensory integration processes related to the embodiment, but not proprioceptive drift, implicates different underlying mechanisms. A possible explanation might come from the distinction between bottom-up (i.e., sensory input) and top-down (i.e., cognitive representation of body schema) mechanisms that influence multisensory integration, that is, altered cognitive representations may influence embodiment but not proprioceptive drift.

O2.6. SOCIAL SIMULATION IN VIRTUAL REALITY IMPROVES EMBODIMENT OF EMOTIONS IN SCHIZOPHRENIA

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Background: Bodily-self disturbances and anomalous emotional functioning are core features of schizophrenia that play a major role in social and functional outcome. Much has been written about abnormal perception and expression of emotions in schizophrenia but less is known about the bodily experience of emotions in this population. The prevalence of anomalous bodily-self experiences (Parnas & Handset, 2003), impaired simulation (Park et al, 2008) and interoception deficits (Ardizzi et al., 2016) in schizophrenia suggests that embodiment of emotions might be altered in this population.
Methods: We investigated emotional embodiment in individuals with schizophrenia (SZ) and demographically-matched controls to determine whether SZ experience anomalous bodily sensations of emotions. We then implemented a novel Virtual Reality (VR) social skills intervention that required participants to simulate social interactions with avatars. The VR training was designed to target social attention and improve simulation of