

Background: Although the deficits of empathy in schizophrenia spectrum disorders has been recognized in previous studies, little is known about the associations between empathy and schizotypal traits. In this study, we examined the associations among empathy, schizotypy and affective states using the psychological network analysis in a college sample to better understand the social cognition deficits in schizophrenia.

Methods: College students (n=1486; male = 574, female = 912; mean age=18.8 years; SD=0.85) were recruited and all of them finished self-reported questionnaire capturing empathy (Interpersonal Reactivity Index, IRI; four subscales: perspective taking, empathic concern, fantasy, personal distress), schizotypy (Wisconsin Psychosis Proneness Scales, including social anhedonia, physical anhedonia, magical ideation and perceptual aberration scales) and affective states (Depression, Anxiety and Stress Scale, 21 items). There were significant sex differences on IRI (female > male for all four subscales, $p < 0.01$), DASS depression (male > female, $p < 0.01$) and schizotypal traits (male > female, $p < 0.05$). Psychological networks were constructed taking the subscales of measures as nodes and the edges representing the partial correlation between each pair of nodes controlling all other nodes were estimated using Gaussian graphical model in male and female sample, respectively. Also, the centrality indices, including strength, closeness and betweenness were calculated to identify the central nodes in the network.

Results: In males, cognitive empathy (perspective taking and fantasy) showed strong connections with physical anhedonia, while affective empathy (empathic concern) connected with social anhedonia and stress. Personal distress connected with magical ideation and anxiety; fantasy connected with magical ideation. Regarding the centrality, perceptual aberration had the strongest strength, followed by stress; social anhedonia had the highest closeness and betweenness. In females, cognitive empathy (perspective taking and fantasy) showed strong connection with physical anhedonia, affective empathy (empathic concern) connected with social anhedonia. Personal distress connected with anxiety; fantasy connected with magical ideation. Stress showed strongest strength, followed by anxiety and magical ideation; anxiety had highest betweenness; fantasy had highest closeness followed by social anhedonia.

Discussion: In the present study, we found that cognitive empathy was strongly connected with physical anhedonia, while affective empathy connected with social anhedonia, regardless of sex. In addition, our findings suggested different network interactions among empathy, schizotypal traits and affective states between males and females. The perceptual aberration and social anhedonia play a central role in the network of males while stress and anxiety are important in females.

F66. DO CLINICAL VARIABLES DURING THE EARLY ILLNESS PERIOD PREDICT THE COGNITIVE COURSE IN EARLY-ONSET SCHIZOPHRENIA?

Charlotte Teigset*¹, Christine Mohn¹, Bjorn Rund¹
¹University of Oslo

Background: Early-onset schizophrenia (EOS) affects approximately 5% of the schizophrenia population, and reflects increased disease severity, with a worse clinical course and outcome. Because of extensive brain maturation in the adolescence, the EOS patients provide unique neurodevelopmental data that may contribute to a better understanding of schizophrenia at all ages. Cognitive dysfunction is a central feature of schizophrenia, and is assumed to be more pronounced in EOS than in later onset illness. Previously, we have reported a deteriorated, but stable cognitive course in EOS,¹ and examined the relationship between cognition and symptoms (submitted).² While both cognition and clinical variables have been subject to comprehensive research in schizophrenia, the interaction between the two has gained less attention, especially in EOS. An essential question now, is to what extent the longitudinal course of cognition is influenced by clinical variables in the early illness period.

Methods: Thirty-one EOS patients and 73 controls (age 12–18) were assessed on clinical variables at baseline (PANSS, duration of untreated psychosis [DUP], hospitalizations, suicide attempts and remission). Neuropsychological assessments with the MATRICS Consensus Cognitive Battery (MCCB) were conducted at baseline, after both one and two years, and composite scores of total performance were calculated. The analyses were performed with a linear mixed model.

Results: In the present study, both PANSS-general and suicide attempt history at baseline were identified as risk factors of longitudinal cognitive function. We did not detect a relationship between DUP, remission, positive/negative symptoms and hospitalizations on the one hand, and long-term cognition on the other.

Discussion: Some baseline characteristics (psychotic symptoms, DUP, remission and hospitalization) had no influence on cognition within the first two years of illness. In contrast, we found that a higher amount of general symptoms (PANSS) and a history of suicide attempts at baseline significantly predicted a deteriorated longitudinal composite score in EOS. This may imply that cognitive deterioration is influenced by a strong affective response to the illness, rather than a result of irrational or psychotic symptoms in and of themselves. Our findings indicate that higher scores of general symptoms, as well as suicide attempt history, predict a deteriorated cognitive course, and should be subject to specific attention in the evaluation and treatment of patients with early-onset psychosis.

References:

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F67. NEUROCOGNITION IN 7-YEAR-OLD CHILDREN OF PARENTS WITH SCHIZOPHRENIA OR BIPOLAR DISORDER

Nicoline Hemager*¹, Kerstin Plessen², Anne Amalie Thorup³, Camilla J. Christiani⁴, Ditte Ellersgaard³, Katrine Søborg Spang⁴, Birgitte Klee Burton³, Aja Greve⁵, Ditte L. Gantriis⁶, Anne Søndergaard³, Maja Gregersen³, Ole Mors⁵, Merete Nordentoft³, Jens Richardt Møllegaard Jepsen³

¹Mental Health Centre Copenhagen, *Child and Adolescent Mental Health Centre, University Hospital Lausanne*; ³Child and Adolescent Mental Health Center, *Capital Region of Denmark*; ⁴Research Unit at Mental Health Center, *The Lundbeck Foundation Initiative for Integrative Psychiatric Research (iPSYCH)*; ⁵Aarhus University Hospital; ⁶Aarhus University Hospital, *The Lundbeck Foundation Initiative for Integrative Psychiatric Research (iPSYCH)*.

Background: Children of parents with schizophrenia or bipolar disorder display neurocognitive deficits. However, studies of schizophrenia offspring and bipolar offspring at the same age are lacking. The objective was to compare neurocognitive abilities in 7-year-old children of parents with schizophrenia or bipolar disorder with neurocognitive abilities in children of parents without these disorders.

Methods: In this nationwide cohort study we assessed 522 7-year-old children (schizophrenia offspring: N=202, bipolar offspring: N=120, and controls=200) with a detailed and well validated neurocognitive test battery. We compared the neurocognitive test scores of the three study groups.

Results: Children of parents with schizophrenia showed neurocognitive deficits, whereas children of parents with bipolar disorder displayed neurocognitive abilities comparable to the control group.

Discussion: Neurocognitive deficits are numerous in 7-year-old children of parents with schizophrenia, which supports the neurodevelopmental model of schizophrenia. Unimpaired neurocognitive abilities in children of parents with bipolar disorder indicate different neurodevelopmental manifestations in these high risk populations at this early age. Our results call for early identification of schizophrenia offspring with cognitive dysfunctions.

F68. PREMORBID IQ, EDUCATIONAL LEVEL AND JUMPING TO CONCLUSIONS AS PREDICTORS OF CLINICAL OUTCOME AT FIRST ONSET OF PSYCHOSIS OVER THE NEXT 4 YEARS: THE GAP STUDY

Victoria Rodriguez^{*1}, Olesya Ajnakina¹, Simona Stilo¹, Valeria Mondelli¹, Tiago Reis Marques¹, Antonella Trotta¹, Giada Tripoli¹, Diego Quattrone¹, Marco Colizzi¹, Poonam Sood¹, Ben Wiffen¹, Paola Dazzan¹, Evangelos Vassos¹, Marta Di Forti¹, Anthony David¹, Robin Murray¹
¹*Institute of Psychiatry, Psychology & Neuroscience, King's College London*

Background: Cognition and more recently social cognition, have been shown to be a strong predictor of clinical and functional outcome in psychosis. Jumping to Conclusions (JTC), which is defined as the proneness to require less information before forming beliefs or making a decision, has been related to the formation and maintenance of delusions. However, its relevance to longer-term outcome is unclear. On the other hand, there is evidence in the literature to suggest differences of patterns in clinical outcome and service based ethnicity. Using data from the GAP case-control study of first-episode psychosis (FEP), we set out to test whether the premorbid IQ, educational level and presence of JTC would predict poor clinical outcome at 4 year controlling for ethnicity.

Methods: 431 FEP patients were assessed with the positive and negative syndrome scale (PANSS) and Global Assessment of Functioning (GAF). Premorbid IQ was measured by the National Adult Reading Test (NART) scale, probabilistic reasoning "Beads" task was applied and educational levels were recorded alongside with socio-occupational variables at the time of recruitment. Follow-up data over an average period of 4 years were obtained from the electronic psychiatric clinical records in the South London and Maudsley NHS Foundation Trust (SLaM); including items concerning clinical course and outcomes (remission, intervention of police, use of involuntary treatment – the Mental Health Act (MHA) -, and inpatient days). We build different regression models using separately premorbid IQ, education level and JTC as predictors for each clinical outcome, both unadjusted and adjusted by ethnicity, age and gender.

Results: Higher educational level was predictor of clinical remission [adjusted OR=1.9, 95% confidence interval (CI) 1.2–3, p=0.005]. FEP who presented JTC at baseline were more likely during the follow up period to be detained under the MHA [adjusted OR=11.23, 95% confidence interval (CI) 2.64–47.76, p=0.001], require intervention by the police (adjusted OR=10.76, 95% CI 2.4–48.26, p=0.002) and have longer admissions (adjusted IRR=4.04, 95% CI 1.43–11.36, p=0.008). We couldn't find any predictor effect for clinical outcome for premorbid IQ. The association with level of education and JTC was not accounted for by socio-demographic variables including ethnicity.

Discussion: Although we did not find association with premorbid IQ, educational level as indirect proxy of neurocognition showed a predictor effect for clinical remission. JTC in FEP is associated with serious subsequent consequences in terms of social disturbance and a poor therapeutic alliance. Our findings raise the question of whether the implementation of specific interventions to reduce JTC, such as Metacognition Training, may be a useful addition in early psychosis intervention programs.

F69. MUSCARINIC M1 RECEPTOR SEQUENCE VARIATION AND GENERAL COGNITION

Sean Carruthers^{*1}, Kiyomet Bozaoglu², Caroline Gurvich³, Philip Sumner⁴, Eric Tan⁵, Elizabeth Thomas⁵, Susan Rossell⁶
¹*Swinburne University*; ²*Bruce Lefroy Centre for Genetic Health Research, Murdoch Children's Research Institute, University of Melbourne*; ³*Monash Alfred Psychiatry Research Centre, The Alfred Hospital and Monash University*; ⁴*Swinburne University, Monash Alfred Psychiatry Research Centre, The Alfred Hospital*; ⁵*Monash Alfred Psychiatry Research Centre, Brain and Psychological Sciences Research Centre, Swinburne University*; ⁶*Monash Alfred Psychiatry Research Centre, The Alfred Hospital and Monash University, Central Clinical School, Brain and Psychological Sciences Research Centre, Swinburne University of Technology, The University of Melbourne and St. Vincent's Hospital*

Background: It has been reported that individuals with schizophrenia who are homozygous at the c.267C > A single nucleotide polymorphism (rs2067477) within the cholinergic muscarinic M1 receptor gene exhibit impaired Wisconsin Card Sorting Test (WCST) performance compared to those who are heterozygous. This investigation sought to examine the influence rs2067477 genotype variation has on general cognitive function.

Methods: 87 individuals with schizophrenia/schizoaffective disorder (Sz/SAD) and 224 healthy controls (HC) completed the MATRICS Consensus Cognitive Battery and D-KEFS Stroop to determine whether rs2067477 genotype variation influenced cognition.

Results: No significant differences in MCCB domain scores or D-KEFS Stroop were found across genotype in both a patient-only sample and a combined patient-healthy control sample

Discussion: Despite rs2067477 genotype variation being shown to influence executive functioning, specifically performance on the WCST in individual with schizophrenia, no such association could be detected across a number of general cognitive domains or on an alternative measure of shifting/cognitive flexibility.

F70. COMPUTERIZED SOCIAL COGNITIVE TRAINING (SCT) IMPROVES COGNITION AND RESTORES FUNCTIONAL CONNECTIVITY IN RECENT ONSET PSYCHOSIS: AN INTERIM REPORT

Shalaila Haas^{*1}, Nikolaos Koutsouleris², Anne Ruef², Bruno Biagiatti³, Joseph Kambeitz², Dominic Dwyer², Ifrah Khanyaree², Rachele Sanfelici², Lana Kambeitz-Ilankovic²
¹*International Max Planck Research School in Translational Psychiatry*; ²*Ludwig-Maximilian-University*; ³*University of California, San Francisco*

Background: Neurocognitive impairments are a core and enduring feature of psychosis that continue to persist despite pharmacological interventions. Neurocognitive interventions have emerged as a supplementary treatment option to improve cognition in early psychosis patients. Recently, focus has shifted to using social cognitive training (SCT) as evidence suggests that targeting social cognition may lead to improvements not only in cognition but also in real-world functioning (Horan et al., 2011). This improvement is thought to be mediated by restoration of functional brain activity in patients undergoing neurocognitive interventions, especially associated with medial prefrontal cortex (Hooker et al., 2014). In this study, we report our interim findings of the effects of a 10-hour SCT on cognition and resting-state functional connectivity (rsFC). Our hypothesis was that training would improve cognition and normalize functional connectivity.