F78. OVERCOMING A BOTTOM-UP ATTENTIONAL BIAS BY PROVIDING TOP-DOWN INFORMATION DURING WORKING MEMORY ENCODING IN SCHIZOPHRENIA

Catherine Barnes*, 1, Lara Rösler 2, Michael Schaum1, Deliah Macht1, Benjamin Peters1, Jutta Mayer1, Michael Wibral1, Andreas Reif1, Robert Bittner1
1 Goethe University Hospital Frankfurt; 2 University of Würzburg

Background: Cognitive impairments including deficits in working memory are commonly observed in schizophrenia. A bottom-up attentional bias has been suggested for encoding visually salient yet irrelevant information. To date it is not known if this bias persists when additional top-down information in the form of a predictive cue is provided. We were motivated to clarify this issue.

Methods: 40 patients with schizophrenia were measured and matched with 40 healthy control participants. During a change detection task four Gabor patches (two flickering and two non-flickering) with varying orientations were shown and participants had to memorize the orientations of the Gabor patches. A colored fixation cross was displayed before the stimuli either cueing two (predictive cue) or all four (non-predictive cue) Gabor patch locations resulting in a 2 x 2 design of four conditions with the factors salience (flickering vs. non-flickering) and cue (predictive cue vs. non-predictive cue). During retrieval a single Gabor patch was displayed, and participants reported if the orientation was the same or had changed in that location. At the beginning of each block participants were instructed to either encode the flickering or non-flickering patches (targets) whose location could either be cued or uncued. In 80% of trials, a target was probed during retrieval.

Results: Patients encoded less information than healthy controls in all four conditions. Both healthy controls and patients encoded more visually salient information than non-salient information, and performance was near chance level during non-target trials. Patients encoded significantly more information when a predictive cue was provided before encoding visually non-salient information.

Discussion: Patients were able to overcome their bottom-up attentional bias of encoding visually salient irrelevant information when provided with top-down information. These findings are in line with previous reports of a bottom-up attentional bias during working memory encoding in schizophrenia. We propose that this bias can be overcome by providing additional top-down information.

F79. ATTRIBUTION OF INTENTIONS IN PATIENTS WITH SCHIZOPHRENIA SPECTRUM DISORDERS WITH PERSECUTORY DELUSIONS

Michal Hajdúk*, 1, Lucia Pavelková1, Peter Ohrablo2, Veronika Petrušová2, Anton Heretik1, Lúbica Forgáčová2
1 Comenius University; 2 Slovak Medical University UHB

Background: Social cognitive deficits are considered hallmark features of schizophrenia spectrum disorders. Consistent patterns of relationships have been established between theory of mind impairment and severity of negative symptoms. Some studies have suggested that patients, specifically those with persecutory delusion, can over attribute intentions. Difficulties in theory of mind in patients with schizophrenia can vary between hypo and hyper – conceptualization depending on the level of symptoms. The aim of the study was to test model which proposed hypo-mentalization vs. hyper-mentalization deficit in patients with schizophrenia spectrum disorders with persecutory delusions.

Methods: 40 patients diagnosed with schizophrenia spectrum disorder, 19 patients with anxiety, affective and personality disorders without persecutory delusions, and 28 healthy controls were enrolled in the study. Diagnoses were established according to ICD-10 criteria. Animation Task was used for theory of mind assessment. Task consists of 12 videos (moving triangles) with three types of stimuli (random, goal-directed and theory of mind – condition). Stimuli were presented in fixed, random order before symptom assessment. Participants were asked to describe content of videos, and the degree of intentionality and appropriateness was evaluated by two rater according to task’s manual. Mutual rating of raters was used in the present analysis. Brief Psychiatric Rating Scale was used for assessment of symptoms severity.

Results: A repeated measures ANOVA with stimuli type as within-factor and group as between-factor revealed significant effect of Stimuli type (F= 171.585, p < .001), and interaction of factors (F = 5.401, p = .001) on rating of intentionality. Group effect was not significant (F=.836, p=.437). Patients with schizophrenia had significantly lower ratings of intentionality in theory of mind condition, specifically. A second repeated measures ANOVA analyzed differences in levels of appropriateness. Results revealed significant effect of stimuli type (F= 12.698, p < .001), group (F= 6.966, p = .002) and interaction of factors (F = 3.211, p = .020). Responses of patients with negative symptoms were less appropriate than controls in goal-directed and theory of mind condition compared to the random condition. Severity of negative symptoms was associate with lower level of intentionality in random condition. Hostility and suspiciousness were associated with higher level of intentionality in goal directed (rs=.330, p=.037) and theory of mind conditions (rs=.348, p=.028). Severity of suspiciousness was moderately to strongly associated with appropriateness of descriptions in all conditions (rs from -.423 to -.517).

Discussion: Results of study highlighted importance of distinguishing between hyper- and hypo-mentalization in patients with schizophrenia as specific impairments were associated with positive and negative symptoms, respectively. Over attribution of intentions to random movement was moderately associated with paranoid symptoms. Patients provided less appropriate descriptions which was associated with higher level of suspiciousness. Implications for development, maintenance treatment of persecutory delusions will be discussed.

Research was supported by Psychiatric Society of Slovak Medical Agency – grant no: 02/2015

F80. COGNITIVE TRAJECTORIES OVER 6 YEARS IN FIRST-EPISEDE SCHIZOPHRENIA AND HEALTHY CONTROLS – A PROSPECTIVE LONGITUDINAL MULTI-ASSESSMENT STUDY

Susie Fu*, 1, Nikolai Czajkowski1, Anne-Kari Torgalsboen1
1 University of Oslo

Background: Patients with first-episode schizophrenia (FES) have consistently showed impaired cognitive functioning compared to healthy controls across a broad array of cognitive domains. After psychosis onset the cognitive performance in FES seems to remain stable or even improve over time. Many earlier studies, however, did not include healthy control groups which made it unclear whether cognitive changes were due to genuine improvements or other arbitrary factors. Thus, the development of individual cognitive domains over time is not yet fully examined.

Methods: The present study has a multi-assessment design, and includes data from eight follow-ups over six years. For the patient group, assessments were conducted yearly, apart from the first year where assessments were conducted every three months. Healthy controls were assessed at baseline, after two years and after six years. A total of 28 FES patients and 28 healthy controls participated in the study, with 79% of patients retained at the 6-year follow-up. Cognition was assessed with MATRICS Consensus Cognitive Battery. Data were analyzed with linear multilevel models.
Results: FES-patients scored lower than the control group across all cognitive domains at baseline. Over six years, the cognitive trajectories of visual learning seem to remain stable for both groups, while FES-patients showed slight improvements in attention (β = 1.34, SE = .18, p < .001), verbal learning (β = .65, SE = .29, p < .001), processing speed (β = .69, SE = .35, p < .05), reasoning/problem solving (β = 1.68, SE = .27 p < .001), working memory (β = .89, SE = .27, p < .002) and social cognition (β = .93, SE = .30, p < .003). Most of these cognitive trajectories start to improve within the first year of illness and continue throughout the six year period. The improvement in processing speed (β = .18, SE = .48, p > .05), verbal learning (β = .56, SE = .59, p > .05) and social cognition (β = .82, SE = .59, p > .05) seem to be larger for FES-patients compared to controls, but these differences were not significant. The patient group's improvement in reasoning/problem solving (β = 1.31, SE = .51, p < .05) was significantly larger that the control group, but they showed smaller improvement in working memory (β = -1.03, SE = .51, p < .05).

Discussion: Our results show that improvements are already discernable after 6 months following illness outbreak. There are different trajectories for different cognitive domains. Moreover, two cognitive domain trajectories were significantly different between control group and FES-patients. This points to the importance of assessing cognitive development over many years with multiple assessments when exploring cognitive impairments in schizophrenia. From a clinical perspective, this may speak in favor of a targeted rehabilitation of different cognitive domains.

F81. AGE OF ONSET OF CANNABIS USE AND COGNITIVE FUNCTION IN FIRST EPISODE NON-AFFECTIVE PSYCHOSIS PATIENTS: 3-YEAR FOLLOW-UP OUTCOME

Esther Setién-Suero1, Diana Tordesillas-Gutierrez2, Benedicto Crespo-Facorro2, Rosa Ayesa-Arirola2
1Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM); 2University Hospital Marques de Valdecilla -IDIVAL, University of Cantabria, CIBERSAM

Background: In recent years, the effect of cannabis use on cognitive functions in patients with psychosis has been widely studied, but results are somewhat contradictory. On the other hand, it has also been studied the relevance of the age of onset of consume, suggesting that the early age of onset of consumption may be related to a greater cognitive impairment.

Methods: 349 patients with a first episode of non-affective psychosis were studied. Patients were classified in cannabis users and non-users. Users were divided according to their age at the beginning of use of cannabis in: early-onset (age<16) and late-onset (≥16 years-old). Differences between groups at baseline were studied on sociodemographic, clinical and cognitive variables. The groups were longitudinally (3-year) compared on cognitive variables.

Results: Out of the 349 patients included in this study, 38.7% (N=135) were cannabis users, of them 39.3% (N=53) started consuming before 16 years of age and 60.7% (N=82) did so at age 16 of after. No differences were found between early-onset and late-onset groups on cognitive variables. However, cannabis users (early and late) showed significantly worse performance in processing speed than non-users. Longitudinal analyses revealed that the groups of early-onset, late-onset and non-users of cannabis, had different evolution in processing speed domain and in the global cognitive functioning.

Discussion: The main findings of this study were that, although there were differences between patients who used cannabis and those who did not, minimal differences aroused between the early-onset and late-onset cannabis users. With respect to longitudinal analyses, we must be careful with their interpretation, since although a priori we found a significant group by time interaction (early-onset, late-onset, and non-users) in some domain, when the cannabis use at 3-year follow-up was considered, results did not show any significance, this reveals that cannabis users (early-onset and late-onset) and non-cannabis users did not differ in the degree of change in their cognitive functions, regardless of whether or not the patients had maintained consumption during the first 3-year of disease progression.

F82. COGNITIVE BIAS IN PATIENTS WITH SCHIZOPHRENIA AND HIGH SCHOOL STUDENTS: ASSOCIATION WITH PSYCHOPATHOLOGICAL SYMPTOMS

Francesc Estrada*,1, Maribel Alhuri1, Josep Maria Crosa1, Claudia Vilaplana2, Alba González-Fernández2, Meritxell Tost2, Irina Olasz1, Nora Mesa1, Estefanía Gago1, Montserrat Pàmias1, José Antonio Monreal1, Diego Palao1, Javier Labad1
1Parc Taulí Sabadell

Background: Some cognitive biases, mainly the “jumping to conclusions” and attributional styles, play a key role in the formation and maintenance of delusions. Other thinking errors include dichotomous thinking, emotionally based reasoning, and catastrophising. The aim of our study was to assess the relationship between cognitive biases and psychopathological symptoms (positive, negative, depressive) in a clinical sample of patients with schizophrenia and a population sample of high school students.

Methods: The clinical sample included 35 patients with schizophrenia (35.6 ± 10.8 years, 40% women) attending to the Department of Mental Health from Parc Taulí Hospital Universitari (Sabadell, Spain) and 45 high school students (16.6 ± 0.9 years) located in the same province.

Cognitive biases were assessed with the Cognitive Biases Questionnaire, that covers 5 types of biases (informational [I]; catastrophizing [C]; dichotomous thinking [DT]; jumping to conclusions [JTC]; and emotional reasoning [ER]) and also gives a total score. Psychopathological symptoms in patients were assessed with the Positive and Negative Syndrome Scale (PANSS) and the Calgary Depression Scale for Schizophrenia (CDSS). Psychopathological symptoms in high school students were assessed with the Community Assessment of Psychic Experiences (CAPE).

Statistical analyses were performed with SPSS version 21.0. CBQ scores between groups were compared with Student’s T-test. The association between dimensions of the CBQ and scores of psychopathological scales was tested with Spearman's correlations. Significance level was set at p<0.05 (two-tailed).

Results: CBQ total scores did not differed between patients with schizophrenia (45.3 ± 8.2) and high school students (44.2 ± 6.7). No significant differences between groups were found in any of the five cognitive biases.

When exploring the relationship between cognitive biases and psychopathological symptoms in patients with schizophrenia, total CBQ scores were associated with CDSS scores (r= 0.65, p<0.001). In relation to particular cognitive biases, depressive symptoms were associated with all cognitive biases (I: r= 0.43, p= 0.017; C: r= 0.62, p<0.001; DT: r= 0.42, p= 0.020; JTC: r= 0.46, p= 0.012; ER: r= 0.57, p<0.001), positive symptoms with ER (r= 0.43, p= 0.009) and general psychopathological symptoms of the PANSS with C (r= 0.34, p= 0.044), DT (r= 0.35, p= 0.041) and ER (r= 0.45, p=0.007).

In high school students, CBQ total scores were associated with positive (r= 0.43, p= 0.003) and depressive (r= 0.35, p= 0.020) symptoms. In relation to particular cognitive biases, depressive symptoms were associated with DT (r= 0.47, p= 0.001) whereas positive symptoms were associated with DT (r= 0.31, p= 0.036) and ER (r= 0.30, p= 0.047).

Discussion: Although we did not find significant differences in the presence of cognitive biases when comparing two different samples, similar associations were found when exploring the relationship between cognitive biases and psychopathological symptoms. Our results are in accordance previous studies reporting the role of some cognitive biases on the risk of developing psychotic symptoms. On the other hand, a clear association between cognitive biases was found for depressive symptoms in both patients with schizophrenia and high school students. Our study highlights the importance of identifying and treating cognitive biases with appropriate therapies (e.g. metacognitive training) for improving the outcome of psychoses