substance use disorder). Those with a lifetime diagnosis of depression were somewhat older and more likely to be female relative to those with no lifetime depression diagnosis. Individuals with depression also had greater exposure across multiple categories of psychiatric medications. Relative to never-depressed CHR subjects, those with depression had more severe positive, negative, disorganized, and general symptoms and greater impairments in social and role functioning, with depressed mood contributing uniquely to functional impairments beyond the impact of positive and negative psychosis-related symptoms. Depressed and non-depressed participants had similar rates of conversion to psychosis over time.
Discussion: Depression was the most common comorbid condition in the NAPLS-2 cohort. CHR participants with a history of depression (defined here as Major Depressive Disorder, Dysthymic Disorder, or Depression Not Otherwise Specified) presented with more prior medication exposure, greater clinical symptom severity, and more pronounced functional impairments relative to non-depressed CHR participants. In spite of these baseline differences, depression did not appear to confer added risk toward developing a full-blown psychotic disorder, nor was depressed mood at baseline protective against conversion to psychosis over time. This information will likely be useful to professionals treating CHR patients and formulating best practices for CHR populations in clinical settings.

S111. Hallucinations and trauma: a complex relation

Jack J.A. Jenner[1], B.J. Kollen[2], H. Burger[2], Bert L.B. Luteijn*[3]
[1]*Jenner Consult;* [2]*University Medical Centre Groningen;* [3]*Rivierduinen, Gouda*

Background: Many studies reported a relationship between Auditory Verbal Hallucinations (AVH) and trauma. However, to demonstrate a possible causal association, factors that confound this association also need to be considered. Hence, we studied the relationship between voice hearers reporting trauma and traumatized patients reporting AVH adjusted for age, gender and diagnosis.
Methods: During a 3 months period all patients with consecutive referrals to a psychiatric Out-Patient Department (OPD) were assessed for psychiatric diagnosis (DSM-IV-TR), AVH (AVHRS: a structured 16-item interview) and trauma (TRAMAL; a self-report list consisting of 6 trauma items (bullying, blackmail, physical- and sexual abuse, threatening and murder) with scores on frequency, severity and offenders.
Descriptive statistics, Chi-square tests, Mann-Whitney U tests and logistic regression models were used to analyze data. For all tests, a two-tailed significance level of $P < 0.05$ was used.
Results: •153 (92%) of 166 patients were included in complete case analysis; majority were males (57.2%). Married were 59% of the men and 41% of the women. Diagnoses were: psychotic disorder: $n = 56$ (36%), affective disorder: $n = 43$ (12%), anxiety disorder: $n = 23$ (15%), drugs-related disorder: $n = 3$ (2%), other: $n = 18$ (12%), and no axis-I disorder = 13 (8%). Thirty-eight subjects (25%) had an axis-II diagnosis, majority were borderline personality disorders. Former psychiatric admission was reported by 48.2% of the Ss.
•No significant adjusted relationship was found between social adverse experiences (SAE) and voice hearing ($P = 0.36$); 83% of Ss who reported one to five past SAE had never heard voices against 78% of voice hearers who reported one to five past SAE.
•Of six traumas, a significant association was observed for sexual abuse only (OR = 2.08, 95%CI: 1.06-4.08; $P = 0.03$) and a trend for undeserved punishment and blackmail (OR = 1.86, 95%CI: 0.98-3.54; $P = .06$).
•No dose-relationship between the number of traumas and the number of voice hearers could be identified. Command hallucinations regarded suicide and assaulting others.
Discussion: Based on present findings in a relatively small sample we conclude that trauma assessment can be justified in case of AVH, as is the reverse. Our findings support the observation that trauma specificity and dose-effect are complex concepts and warrant further investigation.

S112. Unique and overlapping symptoms in schizophrenia spectrum and dissociative disorders in relation to models of psychopathology: a systematic review

Selwyn Renard*[1], Rafaele Huntjens[1], Paul Lysaker[2], Andrew Moskowitz[3], Andre Aleman[4], Marieke (Gerdina) Pijnenborg[1]
[1]*University of Groningen;* [2]*Roudebush VA Medical Center and the Indiana University School of Medicine;* [3]*Aarhus University;* [4]*University of Groningen, University Medical Center Groningen*

Background: Schizophrenia spectrum disorders and dissociative disorders are described in the DSM-5 and ICD-10 as two categorically distinct diagnostic categories. However, several studies indicate high levels of co-occurrence between these diagnostic groups, which might be explained by overlapping symptoms. The aim of this systematic review is to provide a comprehensive overview of the research concerning overlap and differences in symptoms between schizophrenia spectrum and dissociative disorders.
Methods: The PubMed, PsycINFO and Web of Science databases were searched for relevant literature.
Results: The literature contained a large body of evidence showing the presence of symptoms of dissociation in schizophrenia spectrum disorders. Although there are quantitative differences between diagnoses, overlapping symptoms are not limited to certain domains of dissociation, nor to non-pathological forms of dissociation. In addition, dissociation seems to be related to a history of trauma in schizophrenia spectrum disorders, as is also seen in dissociative disorders. There is also evidence showing that positive and negative symptoms typically associated with schizophrenia may be present in dissociative disorders.
Discussion: These results seem to be more consistent with a combination of the dimensional model and network structure model of psychopathology than with categorical models of psychopathology. However, other factors, such as misdiagnosis, item overlap and construct overlap might also play a role.

S113. Does age of first cannabis use and frequency of use influence age of first-episode psychosis (FEP)? A comparison between north and south of Europe

Caterina La Cascia[1], Fabio Seminerio*[1], Lucia Sideli[1], Laura Ferraro[1], Alice Mulè[1], Crocettarachele Sartorio[1], Giada Tripoli[2], Marta Di Forti[2], Daniele La Barbera[1], Robin Murray[2]
[1]*University of Palermo;* [2]*King's College London*

Background: Cannabis is one of the most commonly used drugs among young people across Europe (EMCDDA data 2014), Moreover, it is one of the most abused illicit drugs among patients suffering from schizophrenia (Linszen *et al.*, 1994) and, particularly, in patients at their first episode of psychosis (Donoghue *et al.*, 2011). Furthermore, patients suffering from psychosis with a history of cannabis use have an earlier age of onset of psychosis (AOP) than those who never used it (Di Forti *et al.*, 2013).
We aim to investigate if the reported association between use of cannabis and AOP is consistent across to European samples with expected differences in pattern of cannabis use (i.e. age at first use, frequency of use)
Methods: Cannabis is one of the most commonly used drugs among young people across Europe (EMCDDA data 2014), Moreover, it is one of the most abused illicit drugs among patients suffering from schizophrenia (Linszen *et al.*, 1994) and, particularly, in patients at their first episode of psychosis (Donoghue *et al.*, 2011). Furthermore, patients suffering from psychosis with a history of cannabis use have an earlier age of onset of psychosis (AOP) than those who never used it (Di Forti *et al.*, 2013).
We aim to investigate if the reported association between use of cannabis and AOP is consistent across to European samples with expected differences in pattern of cannabis use (i.e. age at first use, frequency of use)
Results: In the total sample, $N = 935$, comparing FEP who were cannabis users with never users, we found a significant difference in mean AOP (cannabis users: 28.30 (9.05) vs. non-users: 34.94 (12.5), t = -

9.32, $P < 0.001$). Moreover, 58% of cannabis users started at age ≤16 years old, with mean age of onset of Psychotic Disorder (25.47, sd = 7.03), compared with those who started later (M = 25.47, sd = 10.05) (t = -9.42, $P < 0.001$). When the sample was split in NE and SE groups, we found that NE sample the mean AOP in cannabis users was 28.12 (±8.42) and 34.18 (±12.68) non-users (t = -4.65, $P < 0.001$). In SE sample the mean AOP in cannabis users is 29.02 (±9.62) and in never users is 35.55 (±11.61) (t = -5.75, $P < 0.001$). All predictors are statistically significant (in NE sample age first use β = .31, t = 5.16, $P = .000$, frequency β = -1.80, t = -2.93, $P < 0.001$; in SE sample age first use β = 0.41, t = 6.67, $P = .000$, frequency β = -2.87, t = -4.66, $P < 0.001$). In SE, the percentage of variance explained in a regression model is 31% (R2adj = .30) vs 16% (R2adj = .15) of NE.
Discussion: Our results support the association between cannabis use and younger AOP in both samples, but were not observed significant difference across Europe. Linear regression model on predictors (age of first use, frequency of use) analyzed in the NE and the SE clinical samples confirmed relationship of causality with dependent variable (AOP), with a higher percentage of explained variance in sample of SE than NE.

S114. Long-term effects of adolescent THC on the adult brain: an vivo MRI / 1H-MRS study with ex vivo and post-mortem confirmation

Anthony Vernon*[1], Sotiris Kakanos[1], William Crum[1], David Lythgoe[1], Marie-Caroline Cotel[1], Po-Wah So[1], Sagnik Bhattacharyya[1], Kapur Shitij[1]
[1]*King's College London*

Background: Adolescence is a period of vulnerability with regard to the emergence of psychotic disorders (Keshavan *et al.*, Lancet Psychiatry, 2014) especially in boys (Häfner *et al.*, Schiz. Bull. 1998). Cannabis use during adolescence may be a contributing factor; high odds ratios are reported for schizophrenia in a prospective study of men (Manrique-Garcia *et al.*, Psychol. Med. 2012) comparing frequent cannabis users (>50 occasions by those aged 18-19 years) with nonusers. However, the neurobiology of this association remains unclear. To develop a model to explore this, we examined the long-term impact of adolescent exposure to delta-9-tetrahydrocannbidiol (Δ9-THC) on the rat brain, using small animal magnetic resonance imaging and spectroscopy. We hypothesized that Δ9-THC exposure would result in volumetric reductions and/or metabolic alterations particularly in schizophrenia-relevant brain regions such as the prefrontal cortex and hippocampus.
Methods: Male Sprague-Dawley rats were treated with either constant (1 mg/kg i.p.; $n = 10$) or escalating (2.5; 5; 10 mg/kg; i.p.; $n = 10$) doses of Δ9-THC during adolescence, (P35-45). Control animals ($n = 10$) received drug vehicle. All animals were then left undisturbed until adulthood (P80), at which point 1H-magnetic resonance spectra (1H-MRS) were acquired using a PRESS sequence from the left anterior hippocampus using a 7 T small animal MRI system (Agilent Technologies, USA). The animals were then sacrificed by anaesthetic overdose and perfusion-fixed prior to high resolution ex vivo 3D MRI. The MRI data were then analysed for group level differences using unbiased voxel-wise tensor based morphometry (TBM), corrected for multiple comparisons (q = 0.05). Hippocampal MR spectra were analysed using LC-model (Provencher *et al.*, MRM 1993) and the data normalized to levels of creatine. Fixed brain tissues were then dissected and serial tissue sections (1 in 12, 40 µm-thick) processed for Nissl staining and volume assessment using the Cavalieri estimator probe.
Results: Brain-wide TBM analysis revealed that adolescent Δ9-THC exposure did not result in any significant changes (q = 0.05 FDR corrected) in the macroscopic volume of the rat brain, irrespective of the dose of Δ9-THC administered. Clusters of decreased voxels were observed at trend-level ($P < 0.01$ uncorrected) in the cerebellum. Constraining the analysis to a priori regions of interest, (anterior cingulate cortex [ACC], hippocampus) did not change these results and revealed the same trends in the cerebellum. Post-mortem stereology based-volume measurement confirmed the absence of any volume decreases in the ACC and hippocampus following adolescent exposure to Δ9-THC. In contrast, in vivo MRS revealed a dose-dependent decrease in myo-inositol: cr and metabolic decoupling of N-acetyl-aspartate: cr (a marker of neural health/activity) and glutamate: cr.
Discussion: These data resonate with recent findings in humans that suggest adolescent or adult THC exposure does not lead to alterations in the macroscopic structure of the brain, unless combined with high polygenic risk for schizophrenia (French *et al.*, JAMA Psychiatry 2015) or co-morbid alcohol use (Weiland *et al.* J Neurosci. 2015). In contrast, we provide preliminary evidence that adolescent Δ9-THC exposure does have long-term effects on hippocampus function, which map onto findings in some patients with schizophrenia (Kraguljac *et al.*, Neuropsychopharm. 2012). These data highlight the power of rodent models to back-translate and dissect the mechanisms underlying clinical neuroimaging observations and provide new leads to link cannabis use during adolescence and increased risk for psychiatric disorders in adulthood.

S115. Nicotine dependence in patients with schizophrenia: relationships to psychopathology, insight and severity of illness

Zeynep Baran Tatar*[1], Erhan Kurt[1]
[1]*Bakirkoy Training and Research Hospital for Psychiatry, Neurology and Neurosurgery*

Background: Nicotine dependence is common in patients with schizophrenia. One meta-analysis has reported the prevalence of cigarette smoking among patients with schizophrenia three times higher than the prevalence in the general population. Reasons for the increased prevalence of cigarette smoking in schizophrenia are unclear. Studies examining the association between psychopathology and nicotine dependence in this population have found conflicting results, with some studies suggesting increased positive and negative symptoms, some suggesting no difference. This study aims to examine the relationships between psychopathology, insight, severity of illness and nicotine dependence in patients with schizophrenia.
Methods: In this cross-sectional study, 62 smoking outpatients with DSM-IV diagnosis of schizophrenia were recruited from Bakirkoy Research and Training Hospital, Psychotic Disorders Center. Positive and Negative Syndrome Scale (PANSS), Schedule for Assessment of Insight (SAI), Clinical Global Impression Severity of Illness (CGI-S) were used to evaluate psychopathologic variables. The demographic data including age, gender, duration of education, duration of illness, numbers of antipsychotic drugs used, the amount of cigarettes per day and duration of smoking were also obtained. Nicotine dependence was measured using the Fagerstrom Test for Nicotine Dependence (FTND) which is a six-item questionnaire scoring between 0 and 10. Participants were classified with high dependence (FTND >6, heavy smokers) or mild–moderate dependence (FTND <6, non-heavy smokers). We compared heavy smokers and non-heavy smokers on measures of demographics, psychopathology, insight, and symptom severity.
Results: The heavy ($n = 26$) and non-heavy ($n = 36$) smoker groups were not significantly different from one another with respect to gender, duration of education and number of antipsyhotics. The heavy smokers were older than the non-heavy smokers (45.92 ± 9.24 and 40.0 ± 7.67, respectively, $P = 0.011$). The duration of illness was longer in heavy smokers (21.57 ± 8.30; 17.55 ± 8.03, $P = 0.038$). PANNS positive (12.0 ± 4.80; 9.05 ± 3.52, $P = 0.004$), negative (17.8 ± 5.70; 13.47 ± 4.06, $P = 0.002$), general psychopathology (29.92 ± 7.38; 24.88 ± 6.27, $P = 0.008.9$) scores, CGI-S scores (1.92 ± 0.89; 1.27 ± 0.84, $P = 0.005$), amount of cigarettes per day (38.65 ± 9.44; 18.22 ± 7.98, $P < 0.0001$) were higher in heavy smokers. SAI scores (12.88 ± 4.11; 15.80 ± 3.77, $P = 0.000$) were higher in non-heavy smokers. Mean duration of smoking was longer in the heavy-smokers group (24.57 ± 8.53; 17.38 ± 6.17, $P = 0.000$).
Discussion: Our findings suggest that smoking with high dependence is associated with not only severe psychopathology but also with poorer insight and higher severity of illness than mild-moderate dependence in patients with schizophrenia.