

hypothesized that negative symptoms predict poor psychosocial functioning in ARMS even after correction for confounding characteristics.

**Methods:** Data of 57 patients with ARMS for psychosis who participated in the early detection of psychosis (FEPSY) study<sup>1</sup> were analyzed. Measures of psychosocial functioning included the Global Assessment of Functioning (GAF) and occupational status. Negative symptoms were assessed by the Scale for the Assessment of Negative Symptoms (SANS), which includes both subscales that overlap with functioning measures (subscales with conceptual overlap; COS) and subscales that do not (conceptually distinct subscales; CDS). Hierarchical regression analyses were conducted to evaluate the distinct contribution of the different negative symptom subscales in predicting psychosocial functioning while controlling for education and neurocognition (composite score).

**Results:** Negative symptoms were significantly correlated with poorer psychosocial functioning. CDS contributed independently to psychosocial functioning. After controlling for education ( $\Delta R^2 = .122$ ,  $p = .008$ ) and neurocognition ( $\Delta R^2 = .229$ ,  $p = .008$ ), CDS ( $\Delta R^2 = .274$ ,  $p = .030$ ) and COS ( $\Delta R^2 = .475$ ,  $p = .006$ ) contributed independently to the prediction of psychosocial functioning. The complete model explained 40% of the variance (Adj.  $R^2 = .400$ ,  $p = .000$ ).

**Discussion:** These results support the notion of negative symptoms directly affecting psychosocial functioning above the impact of neurocognition, confirming findings by previous studies. This effect seems to not only be due to construct similarities between negative symptoms and functioning, as negative symptom domains without conceptual overlap were also significant predictors of psychosocial functioning. This emphasizes the relevance and impact of negative symptoms in patients with ARMS. Thus, interventions targeting the reduction of negative symptoms could be the key to improving psychosocial functioning in these patients.

#### References:

1. Riecher-Rössler, A., et al., The Basel early-detection-of-psychosis (FEPSY)-study - design and preliminary results. *Acta Psychiatr Scand*, 2007. 115(2): p. 114-25.

### T52. Evaluating the verbal episodic memory deficits in emerging psychosis using structural equation modeling

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**Background:** Neurocognitive deficits are a robust marker in patients with schizophrenic psychoses. Although many studies have focused on verbal memory in these patients, to the best of our knowledge, none have focused on the pattern of learning in at risk mental state (ARMS) for psychosis and first episode psychosis (FEP) patients so far. Previous studies on verbal episodic memory have shown that FEP patients consistently perform worse than ARMS and HC and ARMS perform intermediate to FEP and HC. The objective of this study was to model the learning curve of ARMS and FEP patients using latent growth curve modelling. An important advantage of this approach is that it allows disentangling initial recall, which is strongly determined by attentional processes, from the rate of learning (i.e. learning slope). Based on meta-analyses, we hypothesized that the sequence of performance on the CVLT will be the following: HC > ARMS > FEP and that the learning rate tends to be more impaired than initial recall in both ARMS and FEP patients.

**Methods:** The data analysed in this study were collected within the prospective Früherkennung von Psychosen (FePsy) study, which aims to improve the early detection of psychosis (1). Verbal episodic memory was assessed using the California Verbal Learning Test (CVLT), which is a widely used instrument to assess verbal learning strategies and processes. 99 FEP subjects were compared to 125 ARMS and 68 healthy controls (HC) using latent growth curve analysis which is a statistical technique used in the structural equation modeling (SEM) framework to estimate growth trajectories. Compared to classic regression models, SEM has the advantage of being able to take measurement error into account and to estimate unbiased relationships between latent (i.e. unobserved) variables. Within the growth curve analysis the proposed parameter initial recall corresponds to the

intercept and the parameter learning rate to the slope of the growth curve. Both parameters refer to trials 1 to 5 of the CVLT.

**Results:** A comparison of three nested models with different shapes for the learning curve revealed that an approximately logarithmic growth curve ( $\chi^2 = 50.937$ ,  $df = 15$ ,  $P = 0.000$ ,  $AIC = 6413.414$ ,  $CFI = 0.961$ ,  $RMSEA = 0.091$ ,  $TLI = 0.948$ ,  $SRMR = 0.061$ ) and a freely estimated growth curve ( $\chi^2 = 33.827$ ,  $df = 13$ ,  $P = 0.001$ ,  $AIC = 6398.494$ ,  $CFI = 0.977$ ,  $RMSEA = 0.074$ ,  $TLI = 0.965$ ,  $SRMR = 0.055$ ) provided both good fit to the data. Hence, for ease of interpretation, the approximately logarithmic model was used for comparing initial recall and learning rate of ARMS and FEP patients. FEP showed significantly lower scores in initial recall ( $p = .013$ ) and learning rate ( $P = 0.012$ ) compared to ARMS and HC. Additionally, a trend wise significance for lower scores in learning rate was found for ARMS compared to HC ( $p = .070$ ). When adjusting for sex FEP still showed significantly lower scores compared to ARMS and HC (initial recall:  $p = .015$ ; learning rate:  $p = .010$ ) whereas ARMS showed significantly lower scores than HC in learning rate ( $p = .048$ ).

**Discussion:** This is the first study examining learning curves in ARMS, FEP and HC using structural equation modeling. In accordance with our hypothesis, results indicated a worse performance of FEP compared to ARMS and HC and a performance of ARMS intermediate to those two groups. Findings are in line with existing literature indicating that the verbal learning rate tends to be more impaired than attentional processes in both ARMS and FEP patients.

#### References:

1. Riecher-Rössler A, Pflueger MO, Aston J, Borgwardt SJ, Brewer WJ, Gschwandtner U, Stieglitz RD. Efficacy of using cognitive status in predicting psychosis: a 7-year follow-up. *Biol Psychiatry*. 2009; 66(11): 1023-1030.

### T53. Gender differences in the symptomatology of patients at-risk for psychosis - results from the EU-GEI study

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**Background:** Gender differences in symptomatology have been widely reported among chronic schizophrenia patients and partly also in first episode patients. However, many studies conducted in this area so far show inconsistent results, ranging from a higher impairment in specific symptoms observed in men to no gender differences regarding symptom presentation.<sup>1</sup> The contradicting literature could be due to methodological inaccuracies or reflect the heterogeneity of the symptomatology. Furthermore, little is known about gender differences in patients with a so-called at-risk mental state (ARMS) for psychosis. The aim of this study was to test for potential gender differences in the baseline symptomatology of ARMS patients beyond possible effects of confounders (e.g. cannabis use).

**Methods:** The data analyzed in this study were collected within the multicenter European Gene-Environment Interactions (EU-GEI) study. Clinical symptoms were assessed in 342 ARMS patients (female,  $n = 151$ ) using five observer-rated scales, namely, the expanded version of the Brief Psychiatric Rating Scale (BPRS), the Scale for the Assessment of Negative Symptoms (SANS), the Comprehensive Assessment of At-Risk Mental State (CAARMS), the Montgomery-Åsberg Depression Rating Scale (MADRS), and the Young Mania Rating Scale (YMRS).

Linear mixed effects models with a random intercept per center to account for clustering in the data were used to compare symptomatology at baseline between men and women. All  $P$ -values were fully corrected for multiple testing using the False Discovery Rate (FDR) procedure.

**Results:** There were no gender differences in demographic variables and psychiatric medication intake. However, men showed significantly higher rates of current cannabis use ( $P = 0.028$ ) compared to women. With regard to symptomatology, when corrected for multiple testing, we found that ARMS men had significantly higher negative symptom scores (BPRS Negative Symptoms:  $P = 0.035$ ,  $d = 0.418$ ; SANS Affective Flattening:  $P = 0.035$ ,  $d = 0.396$ ; SANS Alogia:  $P = 0.035$ ,