Background: A high ability to understand symptoms and conceptualize illness, schizophrenia, may play a central role for long-term outcome. This based on the assumption that better insight will promote increased adherence. In this work insight is defined as patients’ ability to experience symptoms and furthermore understand what causes them. Cognitive performance and symptomatic remission are analyzed to explore in what way they are contributing to the level of insight.

Methods: The study population is 294 patients with schizophrenia spectrum disorder. Two items with focus on insight, each 1 to 4 points, are used to decide level of insight. The first item “Experience of symptom” and the second item “Understanding the reason for symptoms”, where 1 point representing high and 4 point low level of insight and with a total of 8 points. Patients are then divided into three groups, Good (2 points), Moderate (3 – 5 points) and Poor (6 – 8 points). Cognitive domains identified to be impaired in schizophrenia are analyzed related to the three groups of insight. Symptomatic remission is compared to the total score of insight with a Mann-Whitney test and then the different categories of insight in a cross-tabulation and Chi-square test.

Results: Differences were found in insight between patients in symptomatic remission and those who are not. This in contrast to when patients were divided into the three insights groups and compared on cognitive performance. Only working memory and neurocognitive flexibility showed significant differences to insight. However, crystallized intelligence, as an expression of over-all cognitive ability, did not.

Discussion: In conclusion, only symptomatic remission seems to be related to insight indicating more of a state than a trait phenomenon. Surprisingly could not different levels of insight be connected to differences in cognitive ability. As this is a cross-sectional study, further research are needed where insight and symptomatic remission are analyzed in longitudinal conditions. Such a study has to focus on if successful treatment promote insight or the other way around.

S49. THE RELATION BETWEEN PROCESSING SPEED AND USAGE OF MOBILE APPLICATIONS IN PATIENTS WITH SCHIZOPHRENIA

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Background: Processing speed is one of the main areas of cognitive process which takes attention to do research on cognition in schizophrenia. Processing speed is also essential in learning, problem-solving and related to social cognitive functions. Technology use has become widespread in health and has gained functionality in many areas. By technology-based interventions, it might be possible to provide improvements in the psychosocial functioning of the patients with schizophrenia. The aim of this study is to look at the relationship between processing speed and technology use in schizophrenia patients.

Methods: Data were collected from the patients who applied to Dokuz Eylül University Medicine Faculty Schizophrenia Outpatient Clinic. Forty-one schizophrenia patients and 10 schizoaffective disorder patients who had been diagnosed as Schizophrenia or Schizoaffective Disorder according to DSM-5 diagnostic criteria were included in the study. A questionnaire to evaluate the use of technology of the patients was developed. The level of the psychosocial functioning was assessed using the Personal and Social Performance Scale (PSP), and the positive and negative symptom severity was evaluated using the Positive and Negative Syndrome Scale (PANSS). Stroop Colour and Word Test (SCWT) and Digit Symbol Coding Test (DSC) to rate processing speed have been applied.

Results: More than half of patients had mobile phone (n=47, 92.2%), computer (n=33, 64.7%), internet connection at home (n=34, 66.7%), internet connection on mobile phone (n=34, 66.7%), mobile application (n=33, 64.7%), social media application (n=26, 51.0%), facebook (n=27, 52.9%), whatsapp (n=28, 54.9%), messaging application (n=31, 60.8%). There is a statistically significant difference as duration of shorter reaction in DSC scores between patients who use (u) internet access on mobile phone (u= 34, 35, nu= 24, 88, p=0,013), whatsapp (u=35,00, nu=26,57, p=0,025), and messaging application (u=34,52, nu=26,05, p=0,022) compared to patients who are nonusers (nu). Having internet connection on mobile phone (p=0,026) and using whatsapp (p=0,010) showed a statistically significant relationship with neutral stimulus reaction time on SCWT among users compared to nonusers. Also, congruent task is statistically related with using mobile application (p=0,038), whatsapp (p=0,042) and messaging application (p=0,050). The other significant finding is patients who use internet access on mobile phone (u= 94,67 seconds, nu= 120,94 s, p=0,017), messaging applications (u=92,33 s, nu= 120,50 s, p=0,015) and whatsapp (u= 88,85 s, nu=120,91 s, p=0,005) showed statistically significant shorter duration in incongruent task of SCWT compared to patients who are not users.

Discussion: Patients who use the internet and messaging applications also had better scores in processing speed. “Being online” or having an opportunity to “be online” may improve processing speed skills or patients having good processing speed ability may easily use mobile phone applications. We found a significant reciprocal relationship between processing speed and using the internet, messaging application and social media applications.

S50. COGNITION AND EMOTION REGULATION IN SCHIZOPHRENIA PATIENTS WITH A HISTORY OF AGGRESSION

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Background: Studies have shown a convergence of neural systems implicated in cognitive control and social emotional functions with mechanisms involved in emotion regulation, awareness, and impulsive aggression. In a sample of patients with a history of aggression, we examined the association of cognitive and social cognitive functions with emotion regulation capacity, emotional awareness, impulse control, and aggression.

Methods: Participants were 78 individuals with schizophrenia or schizoaffective disorder that participated in a cognitive training study. Emotion regulation capacity was indexed by obtaining participants’ heart rate variability (HRV), respiration, and skin conductance while participants viewed pictures selected from the International Affective Picture System (IAPS). Three blocks of pictures were presented—a neutral block depicting three blocks of pictures of everyday objects preceded by audio recordings of their description; an emotionally-evocative block preceded by their description, and a reappraisal block of emotionally-evocative pictures preceded by reappraisal statements. A subset of participants (N=37) completed the emotion regulation task. The MATRICS Consensus Cognitive Battery (MCCB), the Reading the Mind in the Eyes Task (Eyes Task), and the Emotion Regulation task. The MATRICS Consensus Cognitive Battery (MCCB), the Reading the Mind in the Eyes Task (Eyes Task), and the Emotion Recognition-40 (ER-40) were administered to assess cognitive functioning, mentalizing, and facial affect recognition respectively. Negative affectivity was captured using the Positive and Negative Affect Schedule (PANAS) whereas aggression was measured with the Taylor Aggression Paradigm (TAP) and the Overt Aggression Scale Modified (OAS-M).
In a smaller subsample of 12 individuals, we performed analyses of activation patterns during the performance of the emotion regulation task. Regions of interest (ROI) included the dACC, DLPCF, VLPFC, vmPFC, left and right amygdala, and the subcallosal cingulate. We created a regional mask of the cognitive control and emotional appraisal regions for event-related fMRI.

**Results:** There were inverse associations between performance on the MCCB and the Eyes Task and indices of emotion regulation capacity—in particular, significant associations were obtained with Low Frequency/High Frequency HRV ratio \((r=-0.324, p<0.05)\) and SCL \((r=-0.331, p<0.05)\). Both HRV and respiration measures were inversely correlated with aggression measured with the TAP suggesting an association between reduced emotion regulation capacity and a risk for aggression.

There were inverse associations between activation within the event-related regional mask and low frequency/high frequency heart rate variability ratio at rest \((r=-0.304, p=0.095)\) and during the viewing of emotionally-evocative pictures \((r = -0.264, p=0.36)\). Associations with HRV were especially remarkable for the dorsomedial, ventrolateral, and right amygdala regions. Remarkably, increased activation in the regional mask when reappraisal statements were provided with emotionally-evocative pictures was inversely correlated with the life history of aggression LHA \((r=-0.32, p=0.28, n=14)\) and OAS \((r=0.284, p=0.34, n=14)\) aggression scores. This pattern was present when the dACC, right and left amygdala, DLPCF, VLPFC, and the subcallosal cingulate were set as the seed region.

**Discussion:** The results show an association between cognitive functions and emotion regulation capacity indexed by measuring physiological arousal during the performance of the picture viewing task. Emotion regulation capacity also showed significant association with aggression. Deficits in cognitive and social cognitive abilities may contribute to and be viable targets for improving emotion regulation capacity and decreasing aggression risk.

**S52. SPATIAL MEMORY DEFICITS IN SCHIZOPHRENIA: NEUROLOGICAL SOFT SIGNS DIFFERENTIALLY INFLUENCE PERFORMANCES IN 3-D VIRTUAL VERSUS TACTILE RECOGNITION TASKS**

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**Background:** Cognitive impairment is a core meta-dimension in schizophrenia. Cognitive function interfaces with brain neural substrate and some of the observed neurocognitive deficits in the disease parallels with various brain structural and functional abnormalities found in schizophrenia, in particular neural dysconnectivity. The motor dysfunctions in schizophrenia such as evidenced by neurological soft signs (NSS) are also viewed as the consequence of this neural deregulation. NSS are seen both state- and trait-related features of schizophrenia and thus critical to identify schizophrenia subtypes. Although association between NSS and cognitive performance is well recognized in schizophrenia, the links between these subtle neurological sensory integration/motor deficits and cognitive abilities to represent space (spatial memory) has not been studied yet.

Here, we tested the spatial memory performances of schizophrenia patients using both tactile and 3D-virtual tests and examine whether the presence of NSS influenced the used strategies to perform a recognition task and examine spatial representation by dissociating spatial reference frameworks. We presumed that spatial memory will be differently affected in schizophrenia patients depending on the type of cues (local vs distal and tactile vs visual), as a function of the presence or not of NSS.

**Methods:** A total of 20 antipsychotic-treated, clinically stable, schizophrenia patients (SCZ) and 20 healthy matched controls (HC) gave their informed consent to participate in the study. We examined the strategies used by the participants in a protocol using two types of identical radial mazes (3-D virtual and perceptual). The same sequence of tasks was used for both mazes and included: exploration, acquisition, and conflict trials. Participants were proposed to freely explore the maze in order to identify their reinforced arm during the exploration trial. No specific advices were given regarding the use of local/distal or visual/tactile cues during the trials. Psychopathology and cognitive performances were assessed using PANSS, WCST, Digit Symbol Substitution test (DSST); medical and medication history was also evaluated. NSS were assessed using the NSS scale developed in French by Krebs et al. The number of reference memory errors (RME) made during the maze tasks was the main study variable.

**Results:** NSS+ and NSS- patients did not differ in terms of PANSS score or antipsychotic medication. Typical (haloperidol, loxapine, fluphenazine) and atypicals (risperidone, olanzapine and aripiprazole) were equally distributed within the 2 groups.