 Secondary outcome measures: i) Symptom severity: Positive and Negative Syndrome Scale (Kay et al., 1987); ii) Functioning: General Assessment of Functioning (Endicott et al., 1976), World Health Organization Disability Scale (WHO, 2012) and Satisfaction Life Domains Scale (Carlson et al., 2009), and only at follow-up (T2) iii) Suicidal Behaviour and iv) Hospitalizations.

Power calculations: To reach a power of $\beta=80\%$ and detect a between-group difference of two points on the SAI-E total scores, which is considered to be clinically meaningful - effect size of 0.33-, the estimated sample size at the end of the study is $n=126$.

Statistics: Student’s T-test and Mann-Whitney U tests were used as appropriate to compare between-group differences before- and after-treatment, i.e., the changes from baseline to post-treatment scores. The protocol of the study is registered at ClinicalTrials.gov (NCT04104347).

**Results:**
- n=49 subjects have been assessed at baseline so far (26 males, age: 47.0±10.2 years, diagnosis of schizophrenia: F20; ICD10, n=36, 73.5%).
- Fifteen individuals (MCT: n=8; controls: n=7) have completed the treatment and the post-treatment assessment (T1).
- ‘After-treatment-T1’ - baseline-T0’ scores difference means/medians between-group differences (MCT vs. PSE) were: S-AI-E total insight 1.00 vs. -2.00, p=0.050; S-AI-E illness awareness 0.62±2.20 vs. -0.43±1.62, p=0.336; S-AI-E symptom relabelling 0.37±3.38 vs. -1.86±2.34, p=0.167; S-AI-E treatment compliance 0.00 vs. 0.00, p>0.05; BCIS self-reflectiveness 0.50±3.78 vs. -1.43±2.22, p=0.259; BCIS self-certainty 1.62±2.97 vs. 0.00±2.44, p=0.298 and BCIS Composite Index -1.13±5.62 vs. -2.17±3.49, p=0.698.

**Discussion:**
- This is the first RCT testing the effect of group MCT on insight (as primary outcome) in a sample of unselected patients with SSD in comparison with psychoeducation. Two main findings emerged from the results. First, MCT appears to improve clinical and cognitive insight in SSD. Second, MCT was shown to be superior to PSE in changing insight. Whether the above MCT-related insight improvement is maintained at longer-term and whether this has an impact on clinical and social outcomes are yet to be established, which will be properly looked at in this trial.

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**S42. QUALITATIVE ANALYSIS OF CLINICIANS’ PERSPECTIVES ON THE USE OF A COMPUTERIZED DECISION AID IN THE TREATMENT OF PSYCHOTIC DISORDERS**

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**Background:**
- People with a psychotic illness have varying care needs in different areas of their life, often over prolonged periods. Symptomatic, medical or psychosocial problems can go undetected and therefore remain untreated. Routine outcome monitoring (ROM) is way to systematically monitor these problems. In addition, multidisciplinary guidelines and standards of care provide suitable evidence-based treatments for most care needs. However, the integration of ROM results and the implementation of guidelines in daily clinical care can still be improved. Clinical decision aids (CDAs) can be used as tools to ingrate ROM results and to implement guidelines into daily clinical practice within psychosis care. Despite the effectiveness of CDAs in different medical disciplines, their use in psychiatric care is rare. Our goal is to successfully implement a clinical decision aid in psychosis care, which can promote the use of evidence-based treatments, based on care need identified by ROM.

**Methods:**
- We developed TReatment E-AssisT (TREAT), a computerized clinical decision aid that combines ROM outcomes with evidence-based guidelines in order to generate personalised treatment recommendations. A pilot study was conducted to test the feasibility for implementation in daily clinical practice. Currently, a multicenter trial is conducted to investigate the effects of TREAT on day-to-day patient care. As part of this trial, we have conducted a qualitative analysis of clinicians’ experiences of working with the TREAT application. We interviewed eight psychiatrist and five nurse practitioners who had worked with the application multiple times with different patients during their consultations. Our goal was to gain insight in the way clinicians used TREAT, to uncover implementation barriers and facilitators and to find ways to improve the application for future use. We analysed the data by using a thematic analysis.

**Results:**
- The five themes we identified from the data were: the visual structuring of ROM results, guideline based treatment recommendations, facilitating and obstructing factors, patient effects and shared decision-making. We also identified a clear distinction in the general appraisal of TREAT. Eight clinicians experienced the application as overall beneficial for their clinical encounters, while five experienced no additional benefits or sometimes even a negative impact on their daily clinical practice. Clinicians with a more favourable opinion towards TREAT experienced the visual structuring of ROM results and the guideline based recommendations more as positive as opposed to the clinicians with a less favourable opinion. This in turn influenced their clinical reasoning and in some cases their clinical decisions. Different facilitating and obstructing factors were identified, for example; treatment offer within teams, time management and supporting staff. The application did not work equally well for all patient. However, all clinicians agreed that TREAT positively affected shared decision-making during consultations.

**Discussion:**
- With TREAT, we have developed an innovative digital tool in psychosis care. A majority of clinicians found the application beneficial for their daily clinical practice. However not all clinicians experienced additional benefits and not all patients seemed fit for TREAT. We identified different barriers and facilitators for implementation and received multiple point of improvement for the future development of the application.

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**S43. ASSESSING THE VARIABILITY OF RESPONSE TO NON-INVASIVE BRAIN STIMULATION IN PSYCHOSIS**

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**Background:**
- Non-invasive brain stimulation has been introduced as add-on treatment for psychotic symptoms, not least because transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS) have a low risk profile. Yet, the initial excitement is wearing off and there is a lack of consistent evidence from randomized controlled trials (RCT) for the efficacy of brain stimulation. It is often claimed that this is because patients respond very differently to brain stimulation, with some benefiting much more than others. However, is there really strong evidence from RCTs that patients do respond differently? This question can be assessed by comparing the overall variability under active stimulation with the variability under sham stimulation across studies.

**Methods:**
- We included all double-blinded, sham-controlled RCTs and crossover studies of adults with a diagnosis of a schizophrenia spectrum disorder that used TMS or tDCS for the treatment of psychotic symptoms. We extracted a measure of variability (standard deviation, standard error, or confidence interval) of the primary outcome for active and sham stimulation, computed variance-weighted variability ratios for each study, and entered them into a random-effects model. In the case of individual differences in response to TMS or tDCS, we expected that the overall variability under active stimulation would be increased compared to sham stimulation (as evidenced by an overall variability ratio significantly larger than 1).
Results: A total of 39 RCTs and crossover trials with 1,352 patients were included. We found that the variability under active stimulation was not significantly larger than under sham stimulation (variability ratio = 1.07; 95% CI: 0.99, 1.16; P = 0.098).

Discussion: These results do not provide strong evidence for the presence of individual differences in response to non-invasive brain stimulation in patients with schizophrenia spectrum disorders. The search for subgroups and prognostic biomarkers may require more complex study designs including N-of-1 trials.

S44. NEUROBIOLOGICAL FINGERPRINTS OF COGNITIVE SUBTYPES IN RECENT ONSET PSYCHOSIS PATIENTS

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Background: Neurocognitive impairment plays a central role in pathogenesis and course of psychotic disorders. Patients suffering from psychosis or psychosis-related diseases show general and specific neurocognitive impairments that often precede the onset of manifest symptoms. Neurocognitive impairments are frequently associated with reduced psychosocial functioning along with altered brain morphology and function. Quantifying neurocognitive heterogeneity in impairment in schizophrenia patients, cluster analytic approaches differentiated several cognitive subtypes, including a generally impaired and generally spared subgroup. An independent set of findings provided evidence that neurocognitive subgroups of cognitively spared and impaired SZ patients can also be differentiated based on their brain morphology. The current study aims to (1) subtype a first episode psychosis sample based on neurocognitive performance using cluster analysis and (2) investigate grey matter (GM) differences between the obtained cognitive subtypes and healthy volunteers.

Methods: 121 recent onset psychosis (ROP) patients and 201 healthy controls (HC) were recruited within the framework of the Personalized Prognostic Tool for Early Psychosis Management (PRONIA) project. Patients fulfilled DSM-IV-TR criteria of a first affective or non-affective psychotic episode in the last 3 month with onset in the last 24 months. Cognitive subtypes of the ROP patients were derived from 83 variables of 10 neurocognitive tasks using a kmeans clustering algorithm. A resampling approach implemented in R was used to assess the statistical stability of the results. Neuropsychological and clinical cluster characteristics were assessed using t tests. GM volume of the obtained patient clusters was compared by means of intracranial volume corrected t tests with age, sex and site matched HCs using SPM.

Results: The analysis reveals a stable two-cluster solution: A higher cognitive performance cluster (HCP; N = 71) and a lower cognitive performance cluster (LCP; N = 39). Patients assigned to HCP performed significantly (p < 0.01) worse in 4 out of 10 neuropsychological tasks. Patients assigned to LCP performed significantly (p < 0.01) worse in 9 out of 10 neuropsychological tasks. LCP patients show significantly lower premorbid IQ (p < 0.001) and General Assessment of Functioning score (GAF; p < 0.01), lower occupational functioning (p < 0.01) and higher values on the negative component of the Positive and Negative Syndrome Scale (PANSS; p < 0.05). They show no demographic differences regarding age, sex, education years and study site. LCP patients reveal widespread GM reductions in bilateral temporal, parietal and frontal brain regions as compared to healthy controls. GM reductions of the HCP cluster are more restricted and evident in temporal, occipital regions and in the anterior cingulum.

Discussion: Two homogeneous, neurocognitive subgroups of patients suffering from a recent psychotic episode were identified and show distinctive psychopathological and neuroanatomical patterns. The obtained GM reductions in LCP go in line with the neuro-developmental origin of the disease affecting premorbid cognitive and occupational functioning as well as the STG which was reported to be decreased in the early course of the disease. Finding subgroups within early stage psychotic patients with minimal intake of antipsychotic medication, suggests different underlying patho-physiological mechanisms predating manifest illness expression. This evidence offers the opportunity for personalizing interventions like neurocognitive trainings to enhance patients’ odds for recovery after psychosis.

S45. EFFICACY OF A 4-SESSION METACOGNITIVE TRAINING FOR SCHIZOPHRENIA, DEPRESSION, AND BELIEF FLEXIBILITY

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Background: Metacognitive training (MCT) was developed to increase awareness of cognitive biases (Moritz & Woodward, 2007). Each of the 8 MCT modules targets a specific reasoning bias, such as bias against disconfirmatory evidence, jumping to conclusions, and attributional biases. MCT has been shown to be effective in improving delusions. However, it remains unclear to what extent specific MCT modules are effective in ameliorating the reasoning biases that they target, and whether they may also be effective for other disorders characterized by similar cognitive biases. This study aimed to compare the efficacy of a 4-week MCT on belief flexibility among patients with schizophrenia and patients with major depressive disorder (MDD).

Methods: This study adopted a single-blind randomized controlled design. Adult patients with a schizophrenia spectrum disorder (N = 56) and MDD (N = 57) were respectively randomized into MCT or treatment as usual (TAU, i.e. standard psychiatric care). The MCT intervention consisted of the following modules: ‘attributions’, ‘changing beliefs’, ‘to empathise’, and ‘self-esteem and mood’. Patients were assessed at pre-treatment, post-treatment, 1-month and 6-month follow-ups. Belief flexibility was measured using the Maudsley Assessment of Delusions Scale (MADS) and the Bias Against Disconfirmatory Evidence (BADE) task (Wessely et al, 1993; Woodward et al, 2006).

Results: Among the 113 participants, 27 patients with schizophrenia and 29 patients with MDD attended the 4-week MCT. For the schizophrenia arm, repeated-measures ANOVA revealed significant improvements in PANSS total score (p < .001, d = 0.87) and PSYRATS delusions score (p = .001, d = 0.69) after MCT. These treatment effects sustained at 1-month follow-up (p < .01), and improvement in delusions sustained at 6 months (p < .05). Mixed-design ANOVAs revealed that improvements in PANSS total score (p < .001) and PSYRATS delusions score (p < .01) on the MCT condition were significantly greater than TAU over the corresponding timeframes. McNemar tests revealed that one of the MADS measures, reaction to hypothetical contradiction (RTHC), improved after MCT (p = .004), and sustained at 1 month (p = .016) and 6 months (p = .002). There was no change in belief flexibility across timepoints on the TAU condition. Change in RTHC following MCT was not significantly greater than TAU. Symptom changes were not predicted by any of the belief flexibility variables. For the MDD arm, repeated-measures ANOVA revealed significant improvement in Beck Depression Inventory (BDI-II) (p < .001, d = 1.45) after MCT, which sustained at 1-month and 6-month follow-up (p < .01). Mixed-design ANOVAs revealed that improvements in BDI-II on the MCT