S203. COMPENSATORY COGNITIVE APPROACHES TO IMPROVING FUNCTIONING IN PSYCHOSIS: SYSTEMATIC REVIEW AND META-ANALYSIS

Results: Of the 43 patients included in the study, 20 were male, and the other 23 were female. The mean age of all participants was 41.44 years (SD=15.89). Patients were taking the following antipsychotics and antidepressants: clozapine (n=6), amisulpride (n=9), aripiprazole (n=5), olanzapine (n=18), risperidone (n=1), quetiapine (n=20), haloperidol (n=1), paliperidone (n=5), chlorpromazine (n=1), blonanserin (n=1), escitalopram (n=7), sertraline (n=1), mirtazapine (n=2), duloxetine (n=1), venlafaxine (n=3), amitriptyline (n=1), trazodone (n=1), bupropion (n=1). Participants took an average of 1.91 (SD=1.02, range 0–5) different psychotropic drugs during ECT. The mean number of types of antipsychotics and antidepressants used were 1.53 (SD=0.74, range 0–3) and 0.37 (SD=0.76, range 0–4), respectively. Multivariate regression analyses showed positive correlations between initial ST and the total chlorpromazine-equivalent dose of antipsychotics ($\beta = 0.363$, $p < 0.05$). The total fluoxetine-equivalent dose of antidepressants was positively correlated to ΔST10th ($\beta = 0.486$, $p < 0.05$) and mean ΔSTlast ($\beta = 0.472$, $p < 0.01$).
Discussion: Our study elucidated possible effects of psychotropic drugs on ST in patients undergoing ECT. We revealed that larger doses of antipsychotics are associated with higher initial ST, whereas higher doses of antidepressants are associated with stronger shifts of ST during the course of treatment. We believe that our findings provide a basis for creating safer and more efficient ECT protocols.

S202. EFFICACY OF LONG-TERM RESIDENTIAL TREATMENT FOR PERSISTENT MENTAL ILLNESS

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Background: In the United States, the number of public and private psychiatric hospital beds has steadily declined in recent years, despite the lack of intensive intermediate care alternatives in the community. The design and implementation of intensive residential treatment programs are not currently guided by controlled studies, but these studies are necessary to determine the clinical and economic utility of such programs. We present clinical and outcome data on an initial sample of patients treated over the last 5 years.
Methods: Naturalistic, non-controlled assessment of symptomatic and functional outcome in an initial sample of young adults with persistent mental illnesses treated in a community-based residential program. Patients were treated with an individualized combination of modalities such as Illness Education and Management, Supported Employment, Individual, Group and Family Psychotherapies and Psychopharmacology. Standard clinical rating scales were used during the period of treatment and all discharged patients were contacted on an annual basis in order to complete a survey of clinical outcome.
Results: 101 patients had been admitted and treated since the facility opened in October 2011. Median age of the patients was 25 years, mean illness duration was 12.6 years, and the mean number of prior hospitalizations was 6.5. Diagnostic distribution was: 36.7% psychotic disorders, 27.7% unipolar mood disorders, 19.8% bipolar mood disorders, 7.9% autism spectrum disorders, and 7.9% post-traumatic stress disorder or other anxiety conditions. 37% of residents met criteria for personality disorders, the majority of which was borderline personality disorder. 42% of residents also met criteria for a substance use disorder in the year prior to admission. Ratings on the Multnomah Community Ability Scale improved by 16%, ratings on the Brief Psychiatric Rating Scale declined by 20% and ratings on the Montgomery-Asberg Depression Rating Scale declined by 37%. The average survey response rate after discharge was 59%. With regard to community engagement: 40.3% of current residents and 35.1% of discharged residents were competitively employed. 16.7% of current residents and 17.8% of discharged residents worked as volunteers, and 23.3% of current residents and 26.3% of discharged residents were attending school. A survey of dispositions revealed that: 49.7% of discharged residents were living independently, 14.9% were living with family, 2.2% were homeless, and 5.4% had died from suicide. The hospitalization rate declined from 0.84/year to 0.57/year before and after discharge.
Discussion: Long-term residential treatment for young adults with persistent mental illness results in improved symptomatic recovery, independent living, increased employment rates, and reduced hospitalizations.

S203. COMPENSATORY COGNITIVE APPROACHES TO IMPROVING FUNCTIONING IN PSYCHOSIS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Cognitive impairments in domains such as attention, memory, processing speed and executive functions are a central feature of psychotic disorders that have significant negative consequences for daily functioning, including activities of daily living, social and vocational roles. Compensatory approaches aim to minimise the impact of cognitive impairment on daily functioning through the use of aids or strategies to reduce cognitive load, in much the same way as glasses reduce the impact of vision impairment. The primary treatment target is real world community functioning and functional capacity, rather than cognition. There is now a need to synthesise the available evidence in this field so that treatment recommendations and future research directions can be better informed. A large body of research into compensatory approaches to cognition in psychosis exists, but this has never been comprehensively synthesised. The aim of this systematic review and meta-analysis is to examine the effects of compensatory approaches for cognitive deficits in psychotic disorders on i) functional outcomes and ii) other outcomes such as symptoms and quality of life.
Methods: A systematic review and meta-analysis was conducted according to PRISMA guidelines. PsycINFO and MEDLINE electronic databases were searched from inception to October 2017 using multiple terms for 'psychosis', 'cognition' and 'compensatory'. All papers retrieved from this search were double-screened and final inclusion/exclusion was determine by consensus. Data were double-extracted and risk of bias rated by two independent authors. Meta-analysis only included randomised-controlled trials. Standardised Mean Differences (SMD) were calculated to produce a single summary estimate using the random-effects model with 95% Confidence Intervals using Comprehensive Meta-Analysis (CMA) software. When means or standard deviations were not reported in the original articles, SMDs were calculated from data provided by the study authors.
Results: 2192 articles were identified via electronic and manual searches. Forty-two papers describing 40 independent studies were included in the review: case studies (n=4), case series (n=2), uncontrolled single arm pilot studies (n=5), within-subjects designs (n=1), quasi-randomised trials (n=2), and randomised controlled trials (n=26). The types of compensatory interventions included environmental adaptation and supports, internal and external self-management strategies, and errorless learning. Compensatory interventions were associated with improvements in global

functioning post intervention (N=1,449; SMD=0.506; 95%CI=0.347, 0.665; p<.001). Improvements in global symptoms (N=849; SMD=-0.297; 95%CI=-0.484,-0.111;p=.002)andpositivesymptoms(N=784;SMD=-0.227; 95%CI=-0.416, -0.038; p=.018) were also found. Compensatory interventions were not associated with improvements in negative symptoms (N=736; SMD=-0.162; 95%CI=-0.382, 0.058; p=.150). The heterogeneity of findings was low.
Discussion: Compensatory approaches are effective for improving functioning in psychosis, with a medium effect size. General symptoms and positive symptoms appear to benefit from compensatory approaches, but compensatory approaches are not effective for improving negative symptoms. Future analyses will examine the durability of effects, effects of study quality and moderating factors such as pure vs. partially compensatory, treatment intensity/length, mode of delivery (group vs. individual), baseline functioning level and age of participants.

S204. NUTRITIONAL DEFICIENCIES AND CLINICAL CORRELATES IN FIRST-EPISODE PSYCHOSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Diet is increasingly recognised as a modifiable factor influencing the onset and outcomes of psychiatric disorders. Previous meta-analyses of blood nutrient levels in schizophrenia have already shown significant reductions in various individual vitamins/minerals. However, studies to date have largely focused on individual nutrients, and only considered nutrient status in patients with long-term schizophrenia. Meta-analytic evaluation of the evidence for nutrient deficits in first-episode psychosis (FEP) is completely absent. Therefore, we conducted a systematic review of all published studies comparing blood levels of vitamins and/or mineral in FEP to healthy control samples; and applied meta-analytic techniques to determine the prevalence and extent of deficiencies across the full spectrum of nutrients examined in this population to date.
Methods: We searched electronic databases from inception to July 2017 for all studies examining blood levels (i.e. serum, plasma or whole blood) of nutrient levels in people with FEP compared to healthy controls. Our systematic search identified 28 eligible studies, examining blood levels of 16 different nutrients (six vitamins, ten dietary minerals) across 2,612 individuals: 1,221 patients with FEP and 1,391 control subjects. Random effects meta-analyses compared nutrient levels in FEP to healthy controls. Clinical correlates of nutritional status in patient samples were systematically reviewed.
Results: Random effects meta-analyses found that people with FEP had large, significant reductions in blood levels of vitamin B9 (i.e. folate) compared to healthy controls(N=6, n=827, g=-0.624, 95% C.I.=-1.176 to -0.072, p=0.027). Significant reductions were also found for vitamin D (N=7, n=906, g=-1.055, 95% C.I.=-1.99 to -0.119, p=0.027) and, among fewer studies, vitamin C (N=2, n=96, g=-2.207, 95% C.I.=-3.71 to -0.71, p=0.004). No differences were found for other vitamins or minerals. Systematic synthesis of clinical correlates showed that reductions in both folate and vitamin D held significant relationships with greater psychiatric symptoms in FEP.
Discussion: This is the first meta-analysis to examine the prevalence, extent and clinical correlates of nutritional deficiencies in FEP to date. The deficits in vitamin D and folate which have previously been observed in long-term schizophrenia appear to exist from illness onset, even prior to antipsychotic treatment, and are associated with more severe symptoms. The extent and importance of these deficiencies suggests that routine screening for vitamin D and folate deficiencies should be considered in early intervention services. Furthermore, since our previous meta-analyses have shown that high-dose b-vitamin supplementation can reduce symptoms in long-term schizophrenia, this should now be investigated in FEP. The potential physical and psychological benefits of vitamin D supplementation in early psychosis should also be explored. However, further research is needed to establish casual and mechanistic relationships between vitamin deficiencies, poor diet and the onset and outcomes of psychotic disorders.

S205. TRANSCRANIAL DIRECT CURRENT STIMULATION FOR SEVERE, PERSISTENT, TREATMENT-REFRACTORY AUDITORY HALLUCINATIONS IN SCHIZOPHRENIA

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Background: Up to 25% of schizophrenia patients continue to experience distressing auditory hallucinations despite best efforts at treatment with antipsychotic drugs. Transcranial direct current stimulation (tDCS) has been suggested to rapidly attenuate such persistent hallucinations.
Methods: We treated 23 schizophrenia patients with persistent, antipsychotic-refractory auditory hallucinations using tDCS in a single-group, open-label design. tDCS was administered at 2 mA current intensity for 20 min, twice-daily and 4 h apart, across 5 consecutive days; the anode was placed over the the left dorsolateral prefrontal cortex and the cathode over the left temporoparietal junction. Ongoing antipsychotic medications were continued unchanged. Patients were assessed using the Auditory Hallucinations Rating Scale (AHRS) at treatment endpoint and at 1- and 3-month follow up. Response was defined as 50% or greater attenuation in AHRS scores.
Results: All patients completed the study. tDCS resulted in substantial improvement. Mean (standard deviation) AHRS scores dropped from 29.0(8.3) at baseline to 4.4(5.6) at treatment endpoint; these values were 9.3(9.3) and 7.8(8.4) at 1- and 3-months follow up. The response rate was 91.3%, 69.6%, and 82.6% at the 3 posttreatment assessment points, respectively. Complete remission of hallucinations (AHRS=0) was observed in 61%, 44%, and 44% at the 3 posttreatment assessment points. tDCS was very well tolerated and adverse effects were minimal.
Discussion: tDCS is effective and well tolerated in schizophrenia patients with persistent, antipsychotic-refractory auditory hallucinations. In most patients, the benefits last for up to 3 months or longer.

S206. KNOWLEDGE ABOUT CAUSES OF RELAPSE DURING PSYCHOEDUCATION IN PATIENTS LIVING WITH SCHIZOPHRENIA- A QUALITATIVE ANALYSIS

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Background: Evidence till date shows different reasons of relapse in schizophrenia around the world. However, there was almost no reliable data from Nepal. We want to report a thematic study based on the reports of 12 patients living with schizophrenia and their family members. These patients were approached during psychoeducation group sessions.
Methods: Twelve patients with a diagnosis of schizophrenia as per Diagnostic and Statistical Manual of mental disorders-5 criteria, who were accompanied by their family members were selected. A minimum