

and the relative refractory period is 2-4 msec. Lower frequencies optimize repolarization recovery.

ECT is clinically administered at 20-70 Hz. Studies show 20-32 Hz is effective at triggering seizures with optimal treatment outcomes. Lower Hz also minimizes tissue damage from reduced power. The total charge delivered is affected by current amplitude, pulse width, frequency, and train duration. Shorter pulse widths (0.3 ms) reduce total energy and minimize tissue heating.

The neuronal soma is sensitive to electrical stimulation. Chronaxie is the minimum time that an electric current is applied to stimulate a neuron. Chronaxie is 0.2-0.3 msec. Aligning pulse frequencies with these values ensures stimulation with reduced adverse effects. The soma exhibits a lower spike threshold and shorter refractory period when facing prolonged steady depolarization, making it highly sensitive to pulse frequencies that align with its chronaxie values.

In contrast, axons have a higher density of voltage-gated Na⁺ channels that allow quicker recovery and shorter refractory periods. This high density enables axons to rapidly transmit action potentials, facilitating efficient neuronal signal propagation. Shorter axonal refractory period means they handle higher frequencies more effectively, but optimizing the overall frequency for ECT must balance the excitability of both the soma and axons.

Studies indicate that frequencies around 20-32 Hz are effective in initiating convulsive activity, aligning well with the end of the stimulus train. Frequencies over 50 Hz may suppress ictal activity and be inefficient in seizure induction due to "stimulus crowding," with neurons stimulated during their absolute refractory period.

Conclusions: Optimizing ECT pulse frequency is vital to balance therapeutic efficacy and safety. Fine-tuning ECT's electrical parameters enhances patient outcomes. Lower frequencies (20-32 Hz) are more effective to induce seizures and minimize adverse effects. 20-70 Hz in ECT is most clinically used, and lower end Hz could optimize results. Further frequency range research could lead to improved ECT protocols.

Disclosure of Interest: None Declared

EPP508

A Randomized Controlled Trial Comparing the Efficacy of High-Frequency rTMS and Intermittent Theta-Burst Stimulation on Depressive and Anxiety Symptoms in Depressive Disorder

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Introduction: Depressive disorder is one of the most prevalent neuropsychiatric conditions in the world, significantly affecting both individuals and society. Despite numerous therapeutic options, many patients do not respond adequately to treatment, highlighting the need for novel approaches, in the case of this study repetitive transcranial magnetic stimulation (rTMS).

Objectives: The main objective of this study was to compare the therapeutic efficacy of high-frequency rTMS (HF-rTMS) and

intermittent theta-burst stimulation (iTBS) in reducing depressive and anxiety symptoms in patients with depressive disorder.

Methods: This double-blind, randomized controlled trial was conducted at the psychiatric ward of Most Hospital. Patients (N=97) diagnosed with depressive disorder were randomly assigned to receive either HF-rTMS or iTBS both aimed at left dorsolateral prefrontal cortex. Data were collected using both self-assessment and clinician-rated questionnaires, such as the Zung Self-Rating Depression Scale (ZSDS), Beck Anxiety Inventory (BAI), Hamilton Depression Rating Scale (HAMD), and Hamilton Anxiety Rating Scale (HAMA), before and after 10 stimulation sessions.

Results: The analysis showed a significant reduction in depressive and anxiety symptoms after ten stimulation sessions using both HF-rTMS and iTBS across all applied questionnaires. Specifically, the ANOVA results for the ZSDS demonstrated a significant decrease in symptoms over time ($F=414$, $p<.001$), with a mean reduction of 6.54 points (95% CI=4.64–8.43). Similarly, the HAMD scores showed a significant reduction ($F=299.72$, $p<.001$), with a mean reduction of 7.83 points (95% CI=5.79–9.87). For anxiety symptoms, the BAI revealed a significant decrease ($F=389.26$, $p<.001$), with a mean reduction of 5.72 points (95% CI=4.45–6.99) and the HAMA showed a similar trend ($F=656.15$, $p<.001$), with a mean reduction of 7.39 points (95% CI=5.58–9.20).

No significant difference in efficacy was found between the two stimulation protocols across all measures: ZSDS ($F=0.142$, $p=0.237$), HAMD ($F=0.431$, $p=0.376$), BAI ($F=0.269$, $p=0.365$), and HAMA ($F=0.813$, $p=0.370$).

Conclusions: This study confirms that both HF-rTMS and iTBS are effective in reducing depressive and anxiety symptoms, with no significant difference in their efficacy across all measured outcomes after ten stimulations. However, iTBS offers distinct advantages over HF-rTMS, including a shorter stimulation duration and a lower incidence of side effects.

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Rehabilitation and Psychoeducation

EPP511

Individual selection of augmentative and alternative communication for people with mental disabilities

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Introduction: More than 150,000 adults with mental disabilities live in social shelters in Russia and almost 50% of them do not use speech for communication and can't communicate at all. Social institutions lack a system for training those in need of Augmentative and alternative communication (AAC).

Objectives: Development and testing of an algorithm for selecting AAC method for adults with mental disorders and severe speech communication disorders.

Methods: A questionnaire for people with mental disabilities who do not use speech for communication was developed and tested. It included questions accompanied by illustrations, photographs

and graphic symbols. A survey was conducted among 50 people of both sexes, aged 17-58 living in social welfare institutions. 56% of them had a diagnosis of intellectual disability, 18% - Autism, 26% - Schizophrenia. An algorithm for preparing and including respondents in the study was developed, consisting of several components (Establishing primary contact, Determining the preferred means of communication, Determining the ability to understand and use oral speech, Determining the ability to understand and use gestures, images and symbols, written speech).

Results: 92% of people completed the full study. 4 respondents withdrew from the experiment due to their mental state (psychosis, passivity, profound intellectual disability, fatigue). Despite successfully completing the preparatory stage, 74% managed to obtain full results.

Conclusions: The study made it possible to identify potential opportunities for using communication tools, analyze barriers in communication with others, and develop personal recommendations for using AAC, which will undoubtedly improve the quality of life of a person with mental disabilities.

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EPP513

Clients Mixed Experiences of Receiving Job Support and Getting a Job When Participating in Individual Placement and Support in Norway

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Introduction: People with severe mental illness (SMI) view employment as central to their recovery process, principally when work task is experienced as meaningful, manageable, and comprehensible. However, unemployment rates remain extremely high among people with SMI, especially those diagnosed with schizophrenia. The costs are high: significant numbers of people are at risk of loss of life's purpose, social isolation, poverty, and even suicide. Internationally, there is a knowledge gap of lived experience of receiving IPS in a job development and working phase. We need to know more about those who do not get or stay in a job. Correspondingly, in a national context more knowledge is needed about mainstream ESs' practices from an IPS client's perspective.

Objectives: Thus, the aim of this study was to explore clients' experiences of receiving job support from employment specialists (ESs) working with individual placement and support (IPS) in Norway. IPS is developed to help people with severe mental illness (SMI) into competitive employment as an integral component of mental health services.

Methods: Using a hermeneutic phenomenological methodology, this study comprises individual semi-structured interviews with ten participants engaged in IPS at two districts psychiatric centers. Data analysis was conducted according to systematic text condensation.

Results: Three themes emerged: (1) ES—a door opener? (2) Striving to sidestep a “spider web” of triggers at and away from work; and (3) Calling for a safer route.

Conclusions: This study highlights the importance of ESs offering IPS clients' opportunities to try out diverse jobs and focusing more on assessing the work environment in the jobs they place people into. Our findings imply that ESs should spend more time on building a good working alliance with both clients and employers, and pay more attention on understanding individuals' vocational capacities and support needs at the worksite. The ES training should focus not simply on the technical processes of job development and placement, but more directly on empowering clients to stay focused on their vocational ambitions and prospects. The salutogenic model of health can help ESs to analyze whether clients experience workplaces as meaningful, manageable, and comprehensible.

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EPP514

Study of a group of infants with risks of hearing impairment and mental difficulties

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Introduction: One of the little-studied nosologies with severe delay in psychomotor development in the first year of life is children with risks of damage to the auditory analyzer, which requires the development of an adapted method for diagnosing impaired auditory function and taking into account some external factors that do not depend on the state of the child's auditory function.

Objectives: to study the characteristics of the auditory function in infants at risk for hearing impairment with delayed psychomotor development.

Methods: 60 children (4-11 months) with suspected hearing loss were examined (Federal State Budgetary Scientific Institution “Institute of Correctional Pedagogics”); interview with parents; psychiatric and pedagogical examination.

Results: Three groups of children were identified depending on the level of psychomotor development (a level close to the norm, with a slight delay of 1-3 months, with a significant delay - from 4 months):

The first group (34%) included children admitted with suspected hearing loss, with a level of psychomotor development close to the norm, without concomitant developmental disorders. All children in this group were found to have significant and minor hearing loss. In two children, the hearing condition (according to the better hearing ear) was assessed as normal with atresia of the auditory canal on one side.

The second group (50%) consisted of children with suspected hearing loss, whose psychomotor development was delayed by 1-3 months. Most of them had significant hearing loss. In two children, the suspicion of hearing loss was not confirmed.

The third group (16%) included children with suspected hearing loss with a significant delay in psychomotor development for more