

## Effects of nicotine intake on neuroplasticity in smoking and non-smoking patients with schizophrenia

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Oftentimes, their experiences with positive symptomatology affect their ability to relate in a shared reality base with others not experiencing these positive symptoms. Single-session DMT interventions have supported a decrease in psychological distress, and positive and negative symptomatology for people with schizophrenia in an inpatient psychiatric facility (Biondo, 2019).

Within a group DMT approach to treatment, dance/movement therapist considers movement and body-based experiences, as natural and effective sources of self-awareness and expression, which can illuminate the interrelationships between the many dimensions of human behavior (Bryl, 2018). This approach integrates movement techniques, creative embodiment, the non-verbal aspects of self-awareness and interpersonal communication and targets core specific features of chronic schizophrenia and negative symptomatology. As such it provides links to outcomes directly related to affective, cognitive, behavioral, and functional processes in the treatment for schizophrenia in residual stages (Bryl, 2018).

**Discussion:** Schizophrenia can manifest through many different representations: with positive and/or negative symptoms, and with acute episodes or chronicity. The diagnosis will interrupt healthy ego strength, the ability to relate with others, and the ability to function without supports. Dance/movement therapy is a wonderful approach to working with this population in its many forms, as it addresses the psychological, cognitive, social, and functional levels of participants. Although positive and negative symptoms often manifest quite differently on a movement level, DMT has the ability to support the many needs of those diagnosed with schizophrenia. The many limitations of psychopharmacological interventions for people with schizophrenia are evidence that inclusive, strengths-based, and body-informed therapy options would greatly benefit this population.

#### S191. A SCOPING REVIEW AND PHENOMENOLOGICAL EVALUATION OF METACOGNITIVE TRAINING FOR SCHIZOPHRENIA

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**Background:** The self-disorder (SD) approach to schizophrenia posits that although schizophrenia involves a core disruption, this alteration nonetheless leaves room for variable experiential pathways toward delusion formation, which are held to account for variation in thematic content. This view of delusions, then, complicates the picture provided by the theory and research that supports MCT, raising the question of how these separate bodies of empirical evidence might be weighed against each other and reconciled. A major point of difference between these two perspectives is on the issue of “normalizing”. Given that the self-disorder approach posits anomalous alterations in self and world experience, the way the patient with schizophrenic delusions is taken as believing is radically different than the individual whose experience cannot be characterized by such anomalous experience. Thus, although the biases posited by MCT may indeed reflect some general and common errors of cognition and reasoning, there is reason to be cautious about interpreting the observation of such biases in the context of schizophrenia as implying that they play the same role as in the development of erroneous beliefs in non-schizophrenic populations. Moreover, while it is of course possible that a specific metacognitive skill taught during a MCT module may nonetheless prove useful for managing delusional ideation, the variable experiential pathways from which different types of delusions emerge may render a given type of delusion as more or less amenable to treatment by means of a specific MCT module and its corresponding metacognitive skill. However, unless MCT studies have thus far considered the relative impact of individual modules on specific types of delusions, the question of which metacognitive skills can be shown as effective for a specific type of delusion remains unknown.

**Methods:** A scoping review was conducted in order to discern if published MCT studies have examined the impact of individual MCT modules on

types of delusions as they occur in the context of schizophrenia spectrum disorders.

**Results:** It was found that 2% of the 38 MCT studies reviewed provided explicit information about the types of delusions treated, with 5% of such studies reporting on module-specific effects, one study of which specified effects on paranoid delusions.

**Discussion:** This scoping review is novel in its demonstration that, overall, published MCT studies have not taken into consideration the heterogeneity of delusions, nor have they extensively evaluated whether or not there are differential, module specific, outcomes for different types of delusions. From a phenomenological perspective, this risks ignoring how differences in the thematic content of delusions emerge from differing experiential precursors. How each cognitive and affective mechanism targeted by MCT modules may differently contribute to the maintenance or treatment of different types of delusions will be critically evaluated in consideration of the phenomenology of delusions, and suggestions for further research and practice, which aim toward the goal of individualized medicine, will also be considered.

#### S192. EFFECTS OF NICOTINE INTAKE ON NEUROPLASTICITY IN SMOKING AND NON-SMOKING PATIENTS WITH SCHIZOPHRENIA

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**Background:** Cortical plasticity – the ability to reorganize synaptic connections and adapt to environmental changes – appears to be impaired in schizophrenia patients. Results suggest the dysfunctional plasticity to be a key pathophysiological mechanism. Different non-invasive brain stimulation (NIBS) techniques have been used to modulate and induce cortical plasticity. In healthy subjects, nicotine was shown to play an important role in plasticity induction and is capable to alter cortical excitability and plasticity, induced by NIBS techniques. Our goal was to investigate the promising effects of a nicotine receptor activation done by Varenicline and the combination with anodal transcranial direct current stimulation (a-tDCS) on neuroplastic changes in schizophrenia patients.

**Methods:** Our sample consisted out of twenty-four individuals with schizophrenia, twelve smokers and twelve non-smokers. Every participant received Varenicline and Placebo, combined with anodal transcranial direct current stimulation (a-tDCS), to induce non-focal plasticity. We inferred plasticity changes by monitoring changes in cortical excitability. This was done via motor-evoked potentials (MEPs) elicited by transcranial magnetic stimulation (TMS). The MEPs were recorded before and three hours after Varenicline/Placebo intake. Following the direct current stimulation, we monitored excitability changes for up to one hour.

**Results:** Significant effects through the mere Varenicline consumption or withdrawal effects could not be found in any group. However, we observed a numeric temporary decrease of excitability after a-tDCS in non-smokers following Varenicline intake. This decrease compared to the placebo condition was visible 20 minutes after a-tDCS but vanished over time. Smokers did not show any excitability changes after a-tDCS and the nicotinic receptor stimulation did not show any influence. Excitability changes after stimulation in contrast to the baseline measurement were not evident.

**Discussion:** Our results show that an activation of nicotinic receptors in schizophrenia patients does not induce excitability changes. The modulating effect of nicotine in plasticity induction via anodal transcranial direct current stimulation could not be confirmed for patients with schizophrenia. We could show that chronic nicotine consumption in patients with schizophrenia or nicotine withdrawal does not lead to fundamental excitability changes. Acute nicotine consumption has only small effects on cortical excitability in non-smokers.