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ABSTRACTS

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The Effect of Action on Visual False Percepts

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Keywords: Perception, action, hallucinations

Hallucinations, a primary symptom of schizophrenia, are commonly defined as the perception of sensory information despite the lack of corresponding sensory input. Hallucination-like experiences can be studied in signal detection tasks, in which participants have to detect signals in noise. Indeed, patients with schizophrenia report more false alarms than healthy controls, suggesting a general perceptual deficit. Another proposed mechanism underlying hallucinations is the disruption of efference copy signaling. The efference copy is a copy of the motor command, which is used to anticipate the sensory consequences of self-generated actions. These predictions usually lead to perceptual and neural suppression of the sensory action outcomes. Patients with schizophrenia show less suppression of self-generated stimuli than healthy controls. As such, it has been suggested that dysfunctional efference copy mechanisms are the source of hallucinations in schizophrenia. It is still unclear whether psychotic symptoms can be attributed to aberrant efference copy mechanisms, or to dysfunctional perceptual mechanisms in general. To investigate this question, this study employed a signal-detection task with gratings obscured in dynamic noise under both active (self-generated) and passive (externally generated) conditions. Furthermore, participants filled out questionnaires testing for hallucination-proneness. Results showed that false alarms were more frequent in the active condition relative to the passive condition, driven by an increased response bias in the former while perceptual sensitivity (d') did not significantly differ. Interestingly, the number of false alarms correlated positively with schizotypy scores. Overall, these results show that people are more likely to believe they perceived a stimulus in noise when they generated the stimulus themselves, possibly due to an increased sense of agency. Nevertheless, people scoring high on schizotypy showed a general tendency to report more false alarms, suggesting that schizotypy may be related to dysfunctional perceptual mechanisms that are not specific to action.

Validating Language as a Biomarker for Schizophrenia: Speech-to-Symptom Mapping Across Temporal and Demographic Variability

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Keywords: schizophrenia, artificial intelligence

Background Natural language processing (NLP) has advanced the assessment of language disturbances in schizophrenia spectrum disorders (SSD). However, challenges such as small sample sizes, biases, and limited generalizability persist. To address these limitations, we conducted a large longitudinal study to explore the relationship between language features and psychotic symptoms in SSD. **Methods** We analyzed 778 speech recordings from 366 individuals with SSD, collected at baseline and at 3, 6, 12, and 24 months. Psychotic symptoms were assessed using the Positive and Negative Syndrome Scale (PANSS). Acoustic features were extracted using OpenSMILE and Prosogram, while semantic features were derived using a sentence BERT model. Principal component analysis reduced voice and text features to 10 interpretable components. Linear mixed-effects models, with subjects as random effects, assessed the relationship between linguistic components and PANSS positive and negative symptom scales, controlling for sex, education, age, and time. **Results** Negative symptoms were negatively associated with Formants ($\beta = -5.278$, $p < 0.001$) and Voice Quality ($\beta = -1.579$, $p < 0.001$) components, while they showed positive associations with Pitch Variability ($\beta = 1.477$, $p = 0.002$) and Semantic ($\beta = 2.030$, $p < 0.001$) components. Positive symptoms were positively associated with Formants ($\beta = 1.447$, $p = 0.001$) and negatively with Loudness components ($\beta = -1.544$, $p = 0.003$). **Conclusion** Language components are robust predictors of symptom severity over time, after accounting for demographic variability. These findings highlight the potential of NLP features for symptom monitoring and improving objective assessments in SSD.

Theta transcranial alternating current stimulation over the prefrontal cortex enhances theta power and working memory performance

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Keywords: tACS, EEG, Working memory

Introduction: Transcranial alternating current stimulation (tACS) is a promising tool for modulating brain oscillations. This study investigated whether 5 Hz tACS could modulate neural oscillations in the prefrontal cortex and how this modulation impacts performance in working memory (WM) tasks. **Method:** In two sessions, 28 healthy participants received 5 Hz tACS or sham stimulation over the left dorsolateral prefrontal cortex (DLPFC) while performing tasks with high and low WM loads. Resting-state EEG was recorded before and after stimulations for 5 minutes. EEG power was measured at electrodes surrounding the stimulation site. **Results:** The results showed that tACS significantly improved reaction time (RT) compared to sham stimulation. This effect was task-specific, as tACS improved RT for hit responses only in high WM load trials, with no impact on low-load trials. Moreover, tACS significantly increased EEG power at 5 Hz and in the theta band compared to pre-stimulation levels. **Discussion:** These findings demonstrate that tACS applied over left DLPFC modulates post-stimulation brain oscillations at the stimulation sites – known as tACS after-effects. Furthermore, the results suggest that 5 Hz tACS enhances response speed by elevating task-related activity in the prefrontal cortex to an optimal level for task performance. **Conclusion:** In summary, the findings highlight the potential of tACS as a technique for modulating specific brain oscillations, with implications for research and therapeutic interventions.

Assessing the reliability of fMRI-CPCA for single-subject functional brain network detection in schizophrenia.

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Keywords: task-based functional brain networks, single-subject fMRI-CPCA, reliability testing

Introduction Dysfunctions in task-based functional brain networks measured via functional magnetic resonance imaging (fMRI) are increasingly linked to cognitive and behavioral deficits in schizophrenia. While group-level analyses provide insights, clinical translation requires validity at the individual level. Our in-house software, constrained principal component analysis for fMRI (fMRI-CPCA), extracts blood-oxygen level-dependent signals without assumed task models, reducing noise from model mismatches. By isolating signals through dimensional reduction, this technique could support personalized diagnostics and treatment. This study assessed the reliability of fMRI-CPCA for detecting task-related functional brain networks at the single-subject level. We examined how individual networks align with group-level patterns and the feasibility of detecting abnormalities in schizophrenia patients. **Methods** Task-based fMRI data from a probabilistic reasoning task (N=41 controls, N=71 patients) were analyzed. Single-subject analyses used fMRI-CPCA with a group mask and matching component numbers. Reliability was evaluated using cosine similarity between single-subject and group-level networks. Singular Value Decomposition decomposed the data, and similarity scores were categorized as good (>0.7), moderate (0.4–0.7), or poor (<0.4). **Results** Cosine similarity analysis showed 38% weak (<0.4), 40% moderate (0.4–0.7), and 22% strong (>0.7) matches. The sustained visual attention network (C1) had the highest alignment (62% moderate-to-strong matches). Response-related components (C2, C3) showed greater variability, while C4 (sustained visual attention/default mode network) exhibited intermediate stability (45% moderate-to-strong matches). **Conclusions** These findings suggest fMRI-CPCA can reliably detect some task-related networks at the single-subject level. However, further research is needed to validate its clinical utility, particularly for identifying schizophrenia-related abnormalities and informing precision psychiatry approaches.

VR-based screening and treatments of visual perceptual disturbances in psychosis

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Keywords: virtual reality, visual positive symptoms, perception

Psychosis involves a disconnection from reality and hallucinations. Visual positive symptoms have received considerably less attention than their auditory counterparts. However, increased distress and worse outcomes associated with experiencing visual hallucinations call for the design of visually focused assessments and treatments. The recent technological development of immersive virtual reality (VR) enables us to investigate these visual experiences with greater ecological validity and methodological precision. Currently, AVATAR therapy is a prominent VR treatment of auditory hallucinations, while similar individualized attempts for visual positive symptoms are lacking. Here, we conducted a systematic review on the use of VR regarding visual perceptual disturbances and hallucinations in psychotic disorders. Results corroborate the need for more research on and the eventual development of tailored treatments. Findings also highlight potential benefits when integrating eye-tracking with VR. In addition, we have built phenomenologically based visual distortions in VR by manipulating different levels of visual complexity and merged these distortions with perceptual detection paradigms—following Bayesian models of aberrant use of prior knowledge in psychosis. A first VR study has tested these manufactured visual distortions in a non-clinical sample. In line with Bayesian accounts of perception in psychosis, we show that increased delusion-like thinking is associated with reduced perceptual sensitivity to simple visual distortions as well as heightened decision bias. This line of research aims to validate the use of VR in screening for visual perceptual disturbances in individuals during prodromal stages and develop a proof-of-concept of an individualized VR treatment, guided by the learnings of AVATAR therapy.

Inflammation, Physical Health, and Free Water Analyses in Individuals with Schizophrenia Spectrum Disorder

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Keywords: Free Water, Schizophrenia

Background Schizophrenia is a severe psychiatric disorder often accompanied by physical health challenges, including inflammation. Previous research has focused on "allostatic load" the disruption of homeostasis due to chronic stress, and its impact on health outcomes in schizophrenia. However, comprehensive studies of physical health profiles are lacking. This project is part of a larger investigation, with the first part focusing on physical health markers associated with inflammation. The second part will involve free water analyses to explore the relationship between inflammation and brain structure. Methods For 141 individuals with schizophrenia spectrum disorder and 936 healthy individuals from the FOR 2107 dataset, we examined peripheral inflammatory markers (High-Sensitivity C- Reactive Protein (hsCRP), Complement Components 3 (C3) and 4 (C4)), cardiovascular markers (cholesterol, High-density lipoprotein (HDL), Low-density lipoprotein (LDL)), and micronutrients (homocysteine, folate, vitamin B12), as well as key health indicators such as body mass index (BMI), current and past alcohol consumption (measured by the Alcohol Use Disorders Identification Test (AUDIT)), and physical functioning (measured by the Short Form Health Survey Physical Functioning (36-SF)). We conducted 13 ANCOVAs comparing individuals with schizophrenia spectrum disorder and healthy individuals while adjusting for age, sex, and site, applying Bonferroni corrections for multiple comparisons. Results Individuals with schizophrenia spectrum disorder presented with higher hsCRP, C3, and C4, higher HDL and LDL, lower vitamin B12, as well as higher BMI, more alcohol consumption, and lower physical functioning (p-values ranged from 4.781138e-20 to 4.900434e-02). Conclusions Individuals with schizophrenia spectrum disorder exhibit higher physical health risks than healthy controls across various markers associated with systemic inflammation. Our findings underscore the need for interventions targeting physical health in individuals with schizophrenia. In the next phase, we will explore the association between peripheral inflammation and brain structure using free water analyses.

Elucidating NMDA Receptor Hypofunction using Simultaneous EEG-fMRI Measures of Ketamine-Induced Neural Dynamics

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Keywords: EEG-fMRI, NMADR, E/I-Balance

Glutamatergic deficits, particularly at NMDA receptors (NMDAR), are increasingly recognized as core mechanisms in schizophrenia, highlighting excitatory-inhibitory imbalances as therapeutic targets. Recent evidence suggests that modulations in low gamma (30–50 Hz) activity during cognitively demanding auditory tasks may reflect underlying NMDAR signaling. We used combined EEG-fMRI to characterize ketamine-induced NMDAR hypofunction in 32 healthy volunteers and tested whether glycine, an NMDAR co-agonist, could mitigate these effects. Each participant underwent three weekly sessions: a placebo baseline, followed by ketamine with either glycine or placebo pretreatment (randomized order). During each session, participants performed an auditory choice-response task while EEG and fMRI data were simultaneously recorded. Acute ketamine significantly elevated Positive and Negative Syndrome Scale (PANSS) scores ($p < 0.01$), error rates ($p = 0.03$), and response latencies ($p = 0.01$), accompanied by reduced activity in attention-related networks ($p < 0.05$, FDR-corrected) and decreased low gamma (30–50 Hz) activity ($p < 0.01$). Glycine pretreatment partially reversed these alterations: response latencies did not differ from baseline, and gamma-band suppression was attenuated ($p < 0.01$), although fMRI responses remained unchanged. These findings reinforce the value of simultaneous EEG-fMRI measures during ketamine challenge as a robust window into NMDA receptor function. Modulation of gamma activity by glycine highlights the biomarker's sensitivity to shifts in excitatory-inhibitory balance, suggesting a promising target for personalized treatment in disorders involving NMDA receptor dysregulation. This integrative approach may guide future therapeutic strategies, providing deeper insights into schizophrenia and related conditions. Moreover, these results underscore the potential of targeting NMDA receptor co-agonists to realign glutamatergic circuitry in psychiatric disorders.

Mental Health Literacy: Adaptation and German translation of the Mental Health Literacy Scale and the role of stigma and shame

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Keywords: Mental Health Literacy, MHLS, shame

Mental Health Literacy (MHL) is considered a key concept in understanding how people can deal with mental illness in themselves or others. MHL includes knowledge of illnesses, knowledge of risk factors, help seeking behaviors, and attitudes towards mental illness. Stigmatization associated with mental illness is explained to be often more distressing than the illness itself. Moreover, shame and stigmatization are associated with delayed help-seeking, slower recovery, social isolation, and lower self-esteem. The aim of the current study was to develop a qualified German version (MHLS-DE) of the Mental Health Literacy Scale (MHLS). The MHLS was updated to current guidelines or DSM-5 and German legacy, and was shortened psychometrically guided. Effects of stigma, self-efficacy, and psychological flexibility mediated by stigma-stress or shame on MHLS-DE were investigated. Internal consistency (Cronbach's α), exploratory and confirmatory factors analyses were computed. Effects of psychological variables on MHL were examined using mediator analysis. Main results for the MHLS-DE yielded a Cronbach's $\alpha = .846$ and a six-factor solution covering the dimensions of the original MHL construct (Knowledge, Risk Factors, Interventions, Information Seeking, Stigma, Social Exclusion). Mediation Effects were only evident for psychological flexibility $\rightarrow$ shame $\rightarrow$ MHL. This path was modulated by gender. No direct effects were found for any of the predictors. While the conceptual foundation of MHL is still undecided, MHL can be assessed reliably. Mediation analysis emphasized the role of shame for MHL. Therefore, future interventions to improve MHL should take shame into account.

Personalized tDCS targeting visual motion area V5 to modulate smooth pursuit performance, a biomarker for psychosis

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Keywords: Non-invasive brain stimulation (NIBS); Sensorimotor integration; Psychosis

Smooth pursuit eye movement (SP) deficits are considered a robust biomarker for psychosis that can be related to subtle alterations of V5 activity. Yet, the exact mechanisms connecting SP deficits with functional V5 modulation remain elusive. To assess SP deficits by subtle neuromodulation, healthy participants (N=19) and psychosis patients (N=4, ongoing data acquisition) completed SP tasks while transcranial direct current stimulation (tDCS) was applied to either inhibit or facilitate SP performance. To control inter-individual anatomical and functional differences, individual V5 was functionally localized (MRI, EEG/MEG) and tDCS montages were personalized based on algorithmic optimization of individual finite-element electric field simulations. Personalized cathodal/inhibitory tDCS targeting V5 induced a specific delay of SP initiation in healthy participants in line with findings from human and monkey lesion studies. No tDCS effect was observed in neither control condition, nor by application of normative tDCS over V5 or personalized tDCS targeting the frontal eye field. First data from psychosis patients (N = 4) indicates functionally different tDCS effects on ongoing eye movements. Inhibitory personalized tDCS targeting V5 specifically modulates SP initiation in healthy participants and thereby provides a model for subtle SP impairment on behavioral level, but no facilitation by tDCS. In a small sample of psychosis patients different effects by personalized tDCS targeting V5 were observed, but findings have to be substantiated in a larger sample. Taken together, especially in the light of a growing interest in tDCS for clinical settings, a personalized approach yields huge potential to increase the efficacy of tDCS.

Corollary discharge and efference copy mechanisms in schizophrenia and controls: The N1 and P2 evoked potential components differentially react to self-initiated tones in schizophrenia

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Keywords: Event-related potential; Corollary discharge; N100

"Efference copy" and "corollary discharge" mechanisms may help to distinguish internal from external stimuli. Previous studies indicate that patients with schizophrenia show a lack of N1 evoked response potential component amplitude suppression to self-initiated auditory stimuli, suggesting a corollary discharge impairment. In our study, we examined N1 and P2 component amplitude suppression in 27 patients with schizophrenia and 30 healthy controls using an auditory button-press paradigm. In addition to symptom ratings we conducted neuropsychological assessments. Our findings replicated N1 amplitude suppression to self-generated tones in schizophrenia patients. We found no correlation between N1, P2, and lateralized readiness potential, suggesting that the readiness potential may not directly represent corollary discharge mechanisms. Cognition performance was reduced in schizophrenia patients and performance reduction correlated with negative symptoms. Cognition was not associated with evoked potential data. Regarding the P2 component, P2 suppression to self-generated tones was observed in patients as well as in controls. In conclusion, the N1 and the P2 component seem to be differentially involved in corollary discharge and efference copy mechanisms. Further investigation is needed to elucidate functional differences and sources of both components in this context.

Transdiagnostic analysis of facial expressions recorded from patients during psychiatric interviews

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Keywords: Depressive Symptoms, Facial Expressions, Transdiagnostic

Mental health research increasingly focuses on the relationship between psychiatric symptoms and observable manifestations of the face and body. This study utilizes the Facial Action Coding System (FACS) and advanced Artificial Intelligence (AI) tools to analyze video data from patients during semi-structured psychiatric interviews. Our dataset includes 68 videos of patients, focusing on depressive symptoms assessed via the BDI (Beck's Depression Inventory) score. Through Support Vector Regression (SVR), we examined the relationship between facial Action Units (AUs) and symptom severity. Results revealed significant associations between specific AUs and depression severity. Notably, AU12 (lip corner puller) exhibited a negative correlation with BDI scores, suggesting that reduced smiling reflects higher symptom severity. Three additional AUs (AU01, AU11, AU26) demonstrated a negative association, while six other AUs (AU02, AU04, AU05, AU10, AU23, AU25) showed positive correlations with the BDI score. The predictive model achieved a correlation coefficient (r) of 0.62 (95% CI: 0.45–0.75), a mean absolute error of 8.53%, and an area under the curve (AUC) of 0.81. This study highlights the potential of integrating AI-driven analysis of facial expressions with clinical diagnostics to potentially provide an objective and efficient tool for early detection and personalized treatment in mental health care. By bridging AI technology with psychiatric assessment, our findings offer a foundation for developing innovative diagnostic tools that address critical gaps in mental health diagnostics.

The Salience of Psychotic Experiences: Neural correlates in the general population

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Keywords: Psychotic Experiences, Salience Network, General population

Objective: Psychotic experiences (PE) frequently occur at a sub-clinical level in the general population, including symptoms like hallucination and delusion. An important hypothesis is the aberrant salience hypothesis, according to which the salience network (SN) plays a decisive role coordinating between inner and outer world, anchored in the dorsal anterior cingulate cortex (dACC) and anterior insula (AI). Given SN's central role in PE development and maintenance, investigating its functional connectivity (FC) in a population-based sample is critical for understanding its etiology. Methods: Resting State functional connectivity (rsFC) data from N=88 of the general population were captured. Community Assessment of Psychic Experiences-Positive Scale (CAPE-15) quantified PE. rsFC-analyses were conducted with ENIGMA HALFPipe and FSL, performing seed-based correlation analysis of dACC and AI. We investigated the impact of PE on rsFC of the SN within group-level one sample t-tests with additional covariate (i.e., PE) correcting for age and sex. rsFC maps were converted using Fisher Z-transformation, FDR correction was applied. Results: With increasing PE, key SN-nodes (AI, dACC) showed significant hyperconnectivity ($pFDR < 0.01$) to other network structures like the default mode, central executive, visual, auditory, and ventral attention network (e.g. thalamus, central opercular cortex, frontal pole, lateral occipital cortex, planum temporale, inferior frontal gyrus). Conclusions: Our findings support the idea that the SN is crucial for the development and maintenance of PE, even in the general population. Highlighting the SN's role in attributing salience to irrelevant stimuli through increased attention and the search for a subjective cognitive explanation.

Grey Matter Volume and Theory-of-Mind: Comparing Schizophrenia, Depression, and Healthy Controls

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Keywords: Theory-of-mind, Grey-matter-volume, psychiatric disorders

Theory of Mind (ToM) refers to one's ability to infer others' mental states and is essential for successful social communication. ToM deficits are common in psychiatric disorders, especially schizophrenia (SCZ), and depression (MDD), though their neurocognitive profiles remain unclear. This study examined structural grey matter volume (GMV) and its association with ToM performance in SCZ, MDD, and healthy controls (HC). We included 35 SCZ, 26 MDD, and 48 age- and gender-matched HC. ToM was assessed using the Hinting Task (10 short stories requiring inference of a character's implied meaning). GMV was analyzed using voxel-based-morphometry in CAT12. Group-by-task interactions, post-hoc comparisons, and multiple-regression analyses were performed ($p < 0.005$), with results corrected for multiple comparisons (pFWE < 0.05). Behaviorally, HC outperformed SCZ, while SCZ trended lower than MDD. No differences between HC and MDD were observed. Significant group differences in GMV linked to ToM performance was observed, notably in the left thalamus. Post-hoc analyses showed greater thalamic GMV in HC-vs-MDD and a trend-level increase in right middle temporal gyrus GMV for SCZ-vs-HC. Further, GMV correlated positively with task performance in the thalamus for HC, and showed a trend-level negative correlation in the left angular gyrus for MDD. These results highlight disorder-specific neural mechanisms underlying ToM deficits. Thalamic involvement in HC reinforces its central role in ToM, while altered temporal and parietal patterns in SCZ and MDD suggest distinct compensatory mechanisms or underlying neural disruptions associated with ToM impairments. Behavioral differences further emphasize the distinct neurocognitive profiles underlying impaired social functioning.

Prescriber attitudes in Germany towards clozapine – an online survey

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Keywords: clozapine underutilization, treatment-resistant schizophrenia

Clozapine remains the only effective antipsychotic for treatment-resistant schizophrenia (TRS) but is severely underused. Notably, mirroring findings for the duration of untreated psychosis, a delay in initiating clozapine has a detrimental impact on response rates and long-term outcome. Clozapine underutilization is mainly attributable to a widespread fear of potential side-effects, perceived obstacles regarding monitoring requirements and lack of experience regarding clozapine use and TRS detection. However, due to differences in health-care settings these findings cannot be applied directly to Germany. Consequently, we assessed factors contributing to clozapine underutilization among prescribers in Germany. Employing an online survey, we assessed attitudes towards clozapine. This included clinicians' experience regarding clozapine use, and TRS detection, perceived barriers, familiarity with guidelines, and presumptions regarding patients' attitudes towards clozapine. Of 119 psychiatrists who completed the survey, the majority were board certified psychiatrists. All participants reported regularly using clozapine and expressed confidence in its management. 84% of respondents were familiar with current national guidelines but preferred polypharmacy prior to clozapine initiation. Interestingly, respondents who had attended additional training on clozapine use were less likely to prefer polypharmacy before clozapine. A notable portion of participants indicated that they presumed patients would decline clozapine. Monitoring requirements, weight gain and blood dyscrasia were regarded as the main barriers. Our preliminary findings provide a better understanding of factors contributing to clozapine underutilization in Germany. Implementing targeted training programs and the establishment of early detection and intervention services might facilitate a timely diagnosis of TRS and clozapine initiation.

We like to move it! Motivation and barriers as determinants of objective and subjective fitness in schizophrenia spectrum disorders

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Keywords: Activity, Schizophrenia, Recovery

Background: People with schizophrenia spectrum disorders face challenges due to antipsychotic side effects. A common issue is weight gain, increasing cardiovascular risk. Regular exercise could counteract these effects, but many patients struggle with motivation. Design and Methods: This ongoing longitudinal study (target N=100) assesses objective and subjective fitness levels of patients on antipsychotics at baseline and after three months. After the initial assessment, participants receive counseling on weekly exercise goals. Until follow-up, patients are contacted weekly via telephone to document physical activity, barriers, and motivation. Calls are conducted by a peer support worker using a structured questionnaire and analyzed systematically. Results: So far, 30 participants have been enrolled, with 20 completing regular interviews over three months. The calls revealed that tracking and reflecting on physical activity increases awareness of movement patterns. This enhanced self-efficacy could play a key role in recovery. Discussion: For individuals with overweight, the effort required for walking can be comparable to running for fit individuals. Communicating that small, consistent efforts can be more effective than sporadic gym visits is essential in psychiatric treatment for schizophrenia. Physical activity should be an integral part of therapy.

Early Detection for High Risk for Psychosis: A New Screening Tool

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Keywords: early detection of psychosis, screening, psychometrics

Numerous instruments exist for assessing early symptoms of schizophrenia, some of which have good predictive power. However, most screening instruments lack information on their psychometric quality. To address this drawback, a screening instrument was developed that is easily accessible online and initially anonymous. The development version consisted of two parts: a self-report questionnaire with 33 questions on positive and negative symptoms, affectivity, social relationships, daily functioning, schizotypy, and general psychopathological symptoms, as well as a behavioral subtest on comprehension, processing speed, executive functions, attention and memory, and theory of mind. This screening instrument was completed online by 390 participants along with the DSM-5 symptom checklist. After removing eleven items with incorrectly ordered response categories using IRT and two items with high eigenvariance, an exploratory FA yielded four factors – (1) Decreased Drive, (2) Increased Tension, (3) Feelings of Derealization and Delusions, and (4) Social Withdrawal – and showed acceptable model fit (TLI = 0.969, RMSEA = 0.033). Accordingly, psychosis symptoms (DSM-5) correlated with factor (3), but not with the other factors. The questionnaire demonstrated good overall reliability (McDonald's $\chi = 0.893$).

In summary, the reliable and valid 20-item self-report questionnaire offers promise for rapid screening of individuals with prodromal experiences. The behavioral subtest is conceptually attractive but requires further research.

Associations between olanzapine plasma concentration, movement disorders and cardiometabolic dysfunction in patients after a first episode of psychosis

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Keywords: therapeutic drug monitoring, extrapyramidal side effects, metabolic disturbance

Objective This study examines how olanzapine plasma concentration (Colz) relates to movement disorders (MDs) and cardiometabolic dysfunction in remitted first-episode psychosis (FEP) patients, as well as whether Colz is a better predictor than dose for monitoring these adverse effects. **Methods** We included 67 FEP participants on olanzapine from the HAMLETT trial. MDs were assessed using the St. Hans Rating Scale and Barnes Akathisia Rating Scale. Cardiometabolic indices included BMI, waist circumference, glucose, triglycerides, and cholesterol. Two-part and linear mixed-effects models evaluated associations between Colz, MDs, and cardiometabolic indices. Predictive performance between models with Colz and dose was compared using Akaike Information Criterion (ΔAIC). **Results** Over a median 6-month follow-up (IQR = 24), a 1 $\mu\text{g/L}$ increase in Colz was associated with a 6.7% higher likelihood of parkinsonism (95% CI 1.010–1.127), 0.071 cm increase in waist circumference (95% CI 0.002–0.142), 0.007 mmol/L in glucose (95% CI 0.002–0.012), 0.005 mmol/L in total cholesterol (95% CI 0.000–0.010), and 0.006 mmol/L in non-HDL-C (95% CI 0.001–0.011). No associations were found with tardive dyskinesia, tardive dystonia, akathisia, BMI, or triglycerides. Dose outperformed Colz in predicting glucose ($\Delta AIC = 2.262$), total cholesterol ($\Delta AIC = 3.911$), and non-HDL-C ($\Delta AIC = 4.274$), but performed similarly for parkinsonism ($\Delta AIC = 1.432$) and waist circumference ($\Delta AIC = 0.771$). **Conclusion** Colz was associated with parkinsonism and cardiometabolic dysfunction, but dose had better predictive performance. Measuring Colz does not improve monitoring of adverse effects in remitted FEP patients. Future studies should explore its value in drug-naïve patients.

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