P-14 Psychophysiology

P-14-001
Reaction time, processing speed, sustained attention in patients with schizophrenia: relationship with symptoms and treatment

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Objective: To measure the performance of patients with Schizophrenia in Reaction Time, Processing Velocity and Sustained Attention tasks. To compare these three measures and to analyze its impact on Functioning.
Methods: 57 outpatients (18 and 65 years old) diagnosed with Schizophrenia, based on DSM-V criteria, treated in monotherapy and with a mínimum of a 3 months of clinical stability, were assessed in a Reaction Time (RT) task; Trail Making Test, part A; subtest of Symbol Coding of the Brief Assessment of Cognition in Schizophrenia (BACS); Verbal fluency (animals); and Continuous Performance Test.
Results: Functioning was correlated to Elective Reaction Time (the subject must react to different types of stimuli and to choose between several possible answers) [$P = -.265$; $p = .050$], but NOT with Simple Reaction Time (unique response to a previous known stimulus) [$P = .100$; $p = .4.67$)]. Regarding Speed Processing, Functioning was correlated to Symbols Codification ($P = .313$; $p = .018$), but NOT with semantic fluency ($P = .195$; $p = .146$) nor with the test of the outline ($P = -.150$; $p = .264$).
Conclusion: Reaction Time (Simple and Elective), Speed Processing and Sustained Attention are different variables and each of them can have a different impact on the Functionality. Our results suggest an association between low Elective Reaction Time, high Speed Processing and less negative symptoms with better Functioning.
Policy of full disclosure: None.

P-14-002
Deficits in agency in schizophrenia, and additional deficits in body image, body schema and internal timing, in passivity symptoms

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Objective: Individuals with schizophrenia, particularly those with passivity symptoms, may not feel in control of their actions, believing them to be controlled by external agents. Cognitive operations that contribute to these symptoms may include abnormal processing in agency, as well as body representations that deal with body schema and body image. However, these operations in schizophrenia are not fully understood, and the questions of general versus specific deficits in individuals with different symptom profiles remain unanswered.
Methods: Using the projected hand illusion (a digital video version of the rubber hand illusion) with synchronous and asynchronous stroking (500 ms delay), and a hand laterality judgment task, we assessed sense of agency, body image and body schema in 53 people with clinically stable schizophrenia (with a current, past, and no history of passivity symptoms) and 48 healthy controls.
Results: The results revealed a stable trait in schizophrenia with no difference between clinical subgroups (sense of agency), and some quantitative (specific) differences depending on the passivity symptom profile (body image and body schema). Specifically, a reduced sense of self-agency was a common feature of all clinical subgroups. However, subgroup compari-sons showed that individuals with passivity symptoms (both current and past) had significantly greater deficits on tasks assessing body image and body schema, relative to the other groups. In addition, patients with current passivity symptoms failed to demonstrate the normal reduction in body illusion typically seen with a 500 ms delay in visual feedback (asynchronous condition), suggesting internal timing problems.
Conclusion: Altogether, the results underscore self-abnormalities in schizophrenia, provide evidence for both trait abnormalities and state changes specific to passivity symptoms, and point to a role for internal timing deficits as a mechanistic explanation for external cues becoming a possible source of self-body input.
Policy of full disclosure: None.

P-14-003
Access to body structural description is impaired in schizophrenia and coincides with alterations in body image that worsen with passivity symptoms

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Objective: Individuals with schizophrenia, and particularly in passivity symptoms, may no longer feel in control of their actions, thoughts and somatic experiences, feeling as if they are controlled by an external agent. Recent evidence has elucidated the important role that the body representations, body schema and body image, play in the aetiology of passivity symptoms, yet body structural description has not yet been examined nor has body image been examined in a natural setting. The specificity of body representations alterations to individuals with and without passivity symptoms is also unclear.
Methods: Using tasks assessing the relationships of fingers to another (the in-between task), the relationship of whole body parts relative to another (matching body parts by location task) and a body distortion questionnaire (with subscales assessing experiences of Loss of Boundaries, Depersonalisation, Large body parts and Small body parts), we assessed body structural description and body image in 53 clinically stable people with schizophrenia (with current, past and no history of passivity symptoms) and 48 healthy controls.
Results: People with schizophrenia displayed more errors on the in-between task, but not matching body parts by location task, compared to controls, with no differences between schizophrenia groups. People with a current experience of passivity symptoms reported more experiences on all the subscales, while Loss of Boundary experiences appeared to be a trait of people with any history of passivity symptoms.
Conclusion: Altogether, the results indicate body representations are altered in schizophrenia and in passivity symptoms, and are likely to contribute to the emergence of passivity symptoms.
Policy of full disclosure: None.

P-14-004
Interpersonal distance regulation as marker of paranoia in schizophrenia

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Objective: The clinical presentation of schizophrenia is heterogeneous. Some patients suffer from psychotic anxiety associated with paranoid threat. Interpersonal distance correlates with amygdala activation. Yet, studies of interpersonal distance in schizophrenia

remain controversial. Here, we test whether interpersonal distance is altered as a function of paranoid anxiety.
Methods: We assessed 54 schizophrenia patients and 23 matched controls using a stop-distance and a fixed distance paradigm. The stop-distance paradigm evaluates the minimal tolerable interpersonal distance. Distance between was assessed using a laser distance measurer. Conditions included: active vs. passive approach and approach with vs. without eye contact. Each of the four conditions was tested five times in randomized order. The fixed-distance paradigm assessed subjective evaluation of comfort at fixed interpersonal distances of 0.5, 1, 1.5, 2 and 2.5 meters based on a visual analogue scale (VAS). The Bern Psychopathology Scale was used to stratify three groups: psychotic anxiety, psychotic elation and normal affect range. Repeated measures ANCOVA for stop-distance was computed with the factors trial, eye contact, and approach type, between groups with the covariate gender. Repeated measures ANCOVA for fixed-distance included the factors distance and group, covaried for gender.
Results: We found a main effect of eye contact ($F = 6.1$, $p = 0.018$), group ($F = 16.2$, $p < 0.001$), and an eye contact*group interaction ($F = 5.6$, $p = 0.002$) in the stop-distance paradigm. Only in the group with paranoid threat did interpersonal distance increase with eye contact. In the fixed-distance paradigm a significant effect of group ($F = 7.1$, $p < 0.001$) and group*distance interaction ($F = 2.8$, $p = 0.014$) were detected.
Conclusion: Patients with paranoid anxiety can be easily identified by the self chosen interpersonal space, most clearly when the interaction includes eye contact. This simple bed side test may reveal limbic dysregulation in schizophrenia.
Policy of full disclosure: None.

P-14-005
Electrophysiological investigation of reward anticipation and negative symptoms in schizophrenia

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Objective: Negative symptoms are the psychopathological domain most associated to poor outcome in patients with schizophrenia (SCZ). Insight into their pathophysiology might contribute to develop innovative treatments for the syndrome. Over the years, only few studies attempted to disentangle event-related potentials (ERPs) abnormalities associated with different dimensions of negative symptoms. Recently, it has been hypothesized that avolition is related to a difficulty in anticipating reward or integrating value and action. Our study aimed to verify the impairment of reward anticipation in SCZ patients with schizophrenia, and its association with negative symptom dimensions, using ERPs.
Methods: ERPs were recorded during the execution of "Monetary Incentive Delay" task in 30 SCZ patients stabilized on second generation antipsychotics and in 23 healthy controls (HC). Measures of anticipatory and consummatory pleasure, trait anhedonia and motivation were obtained in all subjects. A measure of avolition independent of anhedonia was obtained in patients with schizophrenia.
Results: SCZ patients with schizophrenia did not differ in hedonic experience or anticipation from HC, but showed a deficit of motivation. Unlike HC, P3 amplitude in patients did not discriminate stimuli relevance in the early interval and was higher for the anticipation of loss in the late interval. In SCZ, early P3 amplitude for loss and reward anticipation was inversely related to social anhedonia but not to avolition.
Conclusion: Patients with preserved experience and anticipation of reward seem unable to integrate the relevance and rewarding value of future events in the context of their ongoing task and these abnormalities are relevant only to anhedonia. In line with recent evidence, our results suggest that anhedonia and avolition are partially independent constructs and that SCZ patients might integrate better loss than reward.
Policy of full disclosure: None.

P-14-006
Early auditory event-related potentials and poor functioning in real-life: an electrophysiological study in patients with schizophrenia

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Objective: Prior studies found association between Mismatch Negativity (MMN), an event related potential response indexing early auditory processing and impairment, of social cognition and real-life functioning in patient with schizophrenia (SCZ). Our study aimed to investigate early auditory discrimination components and their relationship with functioning in real-life in SCZ patients, in the context of a multicentre study of the Italian Network for Research on Psychoses.
Methods: ERPs were recorded in 64 chronic, stabilized SCZ patients during the presentation of standard, duration deviants and frequency deviants tones while watching a silent cartoon. The Specific Level of Functioning (SLOF) scale was used to measure real-life functioning, Psychopathology, neurocognition and social cognition were measured by state of art instruments. Regression analyses were carried out using SLOF domains as dependent variables and MMN, psychopathology, neurocognition, extrapyramidal symptoms and social cognition as independent predictors.
Results: SCZ patients exhibited reduced MMN and P3a activity at fronto-central leads compared to healthy controls. Within the schizophrenia sample, the latency of MMN at Central lead entered the regression equation only for the SLOF domain of common activities explaining less variance than social cognition and positive symptoms.
Conclusion: In SCZ patients pre-attentive deficits, as showed in MMN and P3a amplitude reduction, do not display any association with psychopathology or functioning. Latency of MMN was an independent predictor of some aspects of functioning with a smaller effect than social cognition and psychopathology domains.
Policy of full disclosure: None.

P-14-007
Do reward-processing deficits in schizophrenia promote cannabis use? An investigation of physiological and behavioral responses to natural rewards and drug cues

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Objective: To confirm deficits in electrophysiological response to pleasant stimuli in schizophrenia and determine whether this deficit predicts greater cannabis self-administration in daily life in patients with schizophrenia and co-morbid cannabis use.
Methods: 35 schizophrenia patients and 35 non-psychotic controls were divided into cannabis users ($n = 20$ per group) and non-users ($n = 15$ per group). Response to emotional and cannabis-associated visual stimuli was assessed using self-report, behavioural testing, event-related potentials (using the late positive potential, LPP), facial electromyography, and skin-conductance response.