An Exploration of the Efficacy of Using Simple Cognitive Measures to Assess the Degree of Impairment in Patients Diagnosed Under the Broad Spectrum of Schizophrenia

(Proposal for a Symposium)

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Schizophrenia is an enigmatic illness which has eluded the research community with its heterogeneous nature of symptom presentation as well as there are myriad of aetiological factors. Cognitive deficits are a core feature of schizophrenia. Impairments in some domains of cognitive functioning are often present even before the onset of the florid psychotic symptoms of the illness while moderate to severe impairments across most cognitive domains are detectable at the time of the first episode. However, the breadth of this cognitive impairment has led many researchers to propose that the hallmark of this disease is a global profile of neuropsychological impairment. Contrarily, other works suggest that discrete cognitive capacities have differential correlates with symptom and functional domains. This argument over whether the nature of cognitive impairment in schizophrenia is generalized or is specific has been remained unresolved and clouded since a clear '*neuropsychological signature'* of schizophrenia is yet to be identified. The three studies presented in this symposium attempts to address this dilemma. Simple cognitive processes (reaction time, vigilance, transfer of training and priming) are used to assess the relation of specific symptomatology (with and without hallucination; paranoid and non-paranoid) with cognitive functioning of schizophrenic patients. One of the papers also considers differences in the cognitive profile between schizophrenic patients, first degree relatives and normal control. Findings from the three studies suggest marked impairment in the chosen cognitive domains and thus these functions can be extrapolated to be the '*neuropsychological signatures*' of schizophrenia.

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ABSTRACT-I ID0453NAOP2017

An Exploratory Study to Determine the Effect of Presence of Hallucination on Vigilance

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The study explores the role of 'auditory verbal hallucination' (AVH) in the attentional processes of individuals diagnosed with schizophrenia as compared with healthy participants. The sample consisted of 26 participants diagnosed with schizophrenia divided into 'schizophrenia with hallucination' (N=12) and 'schizophrenia without hallucination' (N=14). 13 matched healthy participants were taken, GHQ (Goldberg and Hillier, 1979) was used for the purpose. The presence and/or absence of AVH were determine by Positive and Negative Syndrome Scale (Kay et al., 1987). Participants having higher composite scores in the positive scale were only included. Software designed to measure vigilance was used to assess attentional deficits across the three groups. The complexity of the 'vigilance task' was varied across three parameters: (1) spatial position of the target stimulus and buffer, (2) frequency of the target stimulus and buffer and (3) color of target stimulus and buffer. The performances of the 3 groups were compared statistically in terms of Hit, Miss and False Alarm scores. Results revealed that schizophrenia patients are deficient as compared to their healthy counterparts in the ability to focus on a specific target while inhibiting non-relevant information across all conditions. Also, schizophrenia patients who have AVH are relatively more deficient as compared to the schizophrenia patients without AVH. It can thus be concluded that perceptual abnormality in schizophrenia patients with hallucination has an additional negative impact on attentional processes.

ABSTRACT-II   ID0454NAOP2017

Do abnormalities in psychomotor responses represent a trait marker in schizophrenia and their first-degree relatives? - A Comparative Study

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The present study envisaged to identify whether psychomotor abnormalities underlie precocious symptoms of schizophrenia. Choice Reaction Time (Suman Response-scope) and Bilateral Transfer of Training (Mirror Drawing Test; Starch, 1910) were measured in 14 patients diagnosed with schizophrenia as per DSM IV TR (APA, 2000) criteria, 11 first degree relatives (FDR) and 15 healthy participants were matched in terms of age and education. Psychiatric morbidity in the FDR and normal control group were ruled out using General Health Questionnaire (Goldberg and Hillier, 1979); Edinburgh Handedness Scale (Oldfield, 1971) was administered on all participants to determine handedness. Positive and Negative Syndrome Scale (Kay et al., 1987) was used in the group of Schizophrenia patients to rule out predominant negative symptoms. Significant mean difference (p<0.05) were found among the three groups in terms of choice RT and bilateral transfer of training; schizophrenia patients having the slowest choice RT and least bilateral transfer of training. Non-affected relatives committed more errors as compared to the schizophrenia patients but they surpassed the schizophrenic group in terms of improvement with training. The findings of the present study substantiate the claim that psychomotor abnormalities might be considered as a cardinal substrate of schizophrenic pathology as well as a "trait marker" because of the presence of such abnormalities in non-affected first-degree relatives of schizophrenia.

Social Information Processing biases in Paranoid Schizophrenia with Priming Paradigm

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The present research tries to explore biases in social information processing in paranoid and non-paranoid schizophrenia using the paradigm of 'priming'. The sample for the present research was equally divided into three groups namely Paranoid, Non-Paranoid and Normal Control with 5 participants in each group. Since this is the pilot phase of a Ph.D. work, the numbers of participants were minimum. Brief Psychiatric Rating Scale, was used for assessing symptom severity; Positive and Negative Syndrome Scale (Kay et al., 1987) was administered to screen out predominant negative symptoms; General Health Questionnaire (Goldberg and Hillier, 1979) to rule out psychiatric morbidity in Normal Control; Edinburgh Handedness Scale (Oldfield, 1971) was also used for all the participants. The priming paradigm consisted of primes being presented 'supraliminally' and 'subliminally'. A software - Sublimigen (by Ray & Mitra, 2016) for generating and presenting subliminal stimuli was used. The subliminality was created by varying the 'exposure time' or 'contrast / clarity' of the stimulus. Subjective Subliminal Threshold was computed from a group of 5 participants without any Psychiatric morbidity for the 'exposure time' and 'contrast' factors. Non-parametric statistical analysis revealed that in comparison to healthy participants as well as persons with non-paranoid schizophrenia, persons with paranoid schizophrenia have greater tendency to judge affectively neutral facial expressions as displaying anger or fear when primed by an affectively negative word; such a trend being also present when the priming was subliminal.