

Executive Functions Impairment in Chronic Schizophrenic Patients: an Egyptian Sample

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Abstract:

Objectives To test the hypothesis that schizophrenic patients have more executive deficits compared to controls and if there is any difference between different sub-diagnosis of schizophrenia and to explore the presence of relation between frontal lobe volume and executive functions impairment. **Subjects and Methods** Out patient comparative survey of schizophrenic patients and normal control subjects matched for age, sex & level of education. The total sample of the study consisted of 40 subjects divided into groups, chronic schizophrenic patients group (n = 20) which were collected as systematized random sample & normal healthy control group (n = 20). The schizophrenia patients group fulfilled the general inclusion & exclusion criteria. **Methods** Full psychiatry history taking sheet, executive interview, Neuropsychological assessment of executive functions using: Wisconsin card sorting test, Go No -Go Task, Porteus maze, Controlled oral word association test, Selected subtests of Wechsler Adult Intelligence Scale Revised Similarities & Block Design, Logical memory subtest of Wechsler memory scale revised Positive and Negative syndrome scale Pre-morbid Adjustment scale Wechsler adult intelligence scale revised and Magnetic resonance imaging. **Results** Chronic schizophrenic patients have impairment in all domains of executive functions. In comparison to normal control, paranoid schizophrenia showed a better performance in some of executive functions such as conceptual flexibility, verbal fluency and working memory. There was no statistically significant correlation between frontal lobe size and number of executive impairment.

Introduction:

Executive functions are cognitive processes which orchestrate relatively simple ideas, movements or actions into complex, goal directed behaviors. Without them, behaviors important for independent living, such as coloring, dressing or self-care, can be expected to breakdown into their components (Dauncan, 1986 and Ramsey et al., 2002). They include five components: volition which can determine what one needs or wants, planning with organization of steps and elements (Kzak, 1995), purposive action with translation of planning into self-serving productive activity which occurs in integrated manner (Shallice, 1982), effective performance which is the ability to correct and regulate intensity and other qualitative aspects of delivery (Heilman & Watson, 1991) and working memory: that memory is responsible for immediate recall of small amounts of verbal or spatial elements (Hodges, 1996). Executive deficits may also affect the functional status of the patients in other clinical settings. The syndrome of executive deficits has been associated with frontal lobe damage, but it is relevant to many disabling mental disorders, including schizophrenic

(dementia praecox), depression and Alzheimer's disease (Struss and Benton, 1984). Schizophrenia can be associated with frontal lobe structural lesion, neuropsychological deficits or hypo metabolism by positron emission tomography (PET) or single photon emission tomography (SPECT) imaging (Andreasen et al, 1986). It was found that, negative symptoms and disorganization but not hallucinations & delusions are associated with poor performance on executive function tests (Liddle and Morris, 1991 and Brazo et al., 2005). Zec et al., (1988) proposed dysexecutive syndrome ? Model of schizophrenia characterized by impairment in the ability to call on reservoir of tasks needing completion at appropriate times. In addition, there is difficulty in the ability to assemble materials and information required to complete them. Executive function impairments predict treatment outcomes in schizophrenia. Long - term functional outcomes are better associated with baseline frontal metabolic function and tests executive control than by control of psychosis (Breier et al., 1991 and Chan and chen 2003). Also discharge executive testing is a strong