

Neuropsychological Function, Insight, and Treatment Adherence among Patients with Schizophrenia

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Citation: Deroui K, Bouslikhane M, Abouelfaraj H, Malki Z, Agoub M, et al. (2017) Neuropsychological Function, Insight, and Treatment Adherence among Patients with Schizophrenia. J Cas Rep Stud 5(6): 605

Received Date: May 06, 2017 **Accepted Date:** December 27, 2017 **Published Date:** December 29, 2017

Abstract

Introduction: Research has suggested that poor insight in patients with schizophrenia is associated with poorer treatment compliance. One factor contributing to poor insight may be neurocognitive deficits.

Objectives: The aim of the current study is to explore the relationship between cognitive insight, clinical insight, treatment adherence, executive functions and sustained attention within patients with schizophrenia.

Methods: The study was conducted on 41 patients with schizophrenia using the Beck cognitive insight scale, the schedule for assessment of insight, the drug attitude inventory and two neuropsychological tests.

Results: A correlation was found between the clinical insight and the treatment compliance, but no correlation was found between clinical insight and neuropsychological tests.

Conclusion: This study suggests that poor insight is among factors of poor compliance to treatment in schizophrenia but doesn't support the hypothesis that cognitive impairment may underlie poor insight in schizophrenia.

Keywords: Neuropsychological function; Insight; Treatment adherence; Schizophrenia

Introduction

Initially, insight was considered a dichotomous construct that was either present or absent within patients with schizophrenia, and was measured by a patient's verbal recognition of existing psychological difficulties. This conceptualization, however, has evolved into one of multidimensionality, where insight incorporates a multitude of phenomena [1].

David (1990) suggested that insight is composed of 3 distinct overlapping dimensions: recognition that one has a mental illness, compliance with the treatments and ability to recognize psychotic events (delusions and hallucinations) as pathological [2].

The importance of maintenance therapy in schizophrenia has been well established, the risk of relapse increases almost 5-fold when antipsychotic drug therapy is discontinued. Nonadherence to medication worsens symptoms and increases suicidal attempts and, consequently, emergency room visits or re-hospitalization. Understanding the determinants of nonadherence in schizophrenia is thus important for developing effective relapse prevention strategies [3]; and lack of insight is frequently cited as a significant factor of medication nonadherence [1].

One factor contributing to impaired insight in psychotic disorders may be neurocognitive deficits [1].

Broadly speaking, researches had emphasized that poor insight is significantly related with executive functioning [2]. Executive skills permit an adaptive balance of maintenance and shifting of cognitive or behavioral responses to the environmental demands, permitting longer-term goal-directed behavior [2].

If lack of insight is underpinned by cognitive impairment, then it may require a therapeutic approach which is different from that currently afford; however, several studies have yielded contradictory results concerning the role of cognition, and insight, raising doubts about their predictive power [4].

Hence the confusion regarding the impact of executive function on insight still exists. In Morocco, there is a prominent lack of literature addressing this issue.

Objectives

The aim of this current study is to explore the relationship between cognitive insight, clinical insight, treatment adherence, executive functions and sustained attention within patients with schizophrenia.

Materials and Methods

Site of study

The study was conducted in July/ September 2013 in the University Psychiatric Center Ibn Rushd of Casablanca.

Population studied

The study was conducted among forty one inpatients diagnosed with schizophrenia according to the DSM-IV criteria. An informed consent was requested from patients being insured by anonymity of collected data.

Methods

The following data were collected: Age, gender, and educational level, age of the onset of the disorder, substance misuse, number of hospitalizations and drug information.

Measures

BECK Cognitive Insight Scale (BCIS): This scale was developed to evaluate patients' self-reflectiveness and their overconfidence in their interpretations of their experiences. It's a 15-item self-report questionnaire yielding a 9-item self-reflectiveness subscale and a 6-item self-certainty subscale.

A composite index of the BCIS reflecting cognitive insight was calculated by subtracting the score for the self-certainty scale from that of the self-reflectiveness scale.

Drug Attitude Inventory (DAI-10): The aim of this questionnaire to gain some understanding of what people think about medications and what experiences people have of them. The scale has 10 items, 6 of which would be endorsed as True and 4 as false in a non-dysphoric or compliant profile. A 'compliant' response is scored as +1; a dysphoric response is scored as -1. A positive sum of items indicates a positive subjective response (compliant response); a negative sum of scores indicates a negative SR (non-compliant response).

Schedule for Assessment of Insight (SAI; David, 1990) is a semi structured interview assessing three dimensions of insight (treatment adherence, awareness of illness and relabeling of psychotic phenomena).

Berg's Card Sorting Test (BCST) a PEBL version of the WCST (Wisconsin Card Sorting Test), is a measure of prefrontal executive functioning, the task requires problem solving strategies in addition to working memory components.

Conner's Continuous Performance Task (CCPT) measures a person's sustained and selective attention and impulsivity, it's a vigilance task, which takes approximately 14 minutes to complete.

Analyze

Collection and statistical analysis of data was realized using SPSS software. Correlational analyses among neurocognition, insight and nonadherence were performed using Pearson correlation coefficients. This statistical analysis was performed using the SPSS version 17.0 software package. Statistical significance was defined as $p < 0.05$.

Results

N = 41 patients

- Gender: 12,2 % female and 87,8 % male
- Mean age: 33,51 (+/-9,37) ; with a range of 21 - 66.
- Educational attainment: 0% unschooled; 26,8 % elementary; 24,4 % college; 14,6 % high school; 34,1 university (Figure 1).
- Marital status: 82,9 single; 12,2 married; 4,9 divorced; 0% widow
- Current profession: 61 % no; 39% yes
- Family antecedents: 39 % yes
- Substances misuse: 29,3% no; 48,8% cannabis; 26,8% alcohol; 9,8% psycho-active medicines; 7,3% other substances
- Mean age of the onset of the disorder: 24,61 (+/-6,26) with a range of 16-42.
- Mean of the number of hospitalizations: 3,63 Between 1 and 16 times.
- Treatment: 51,2% Haloperidol; 85,4% Levopromazine; 31,7% Chlorpromazine; 9,8 % Olanzapine; 17,1% Risperidone; 24,4% Long acting antipsychotics; 31,7% Others (Figure 2).

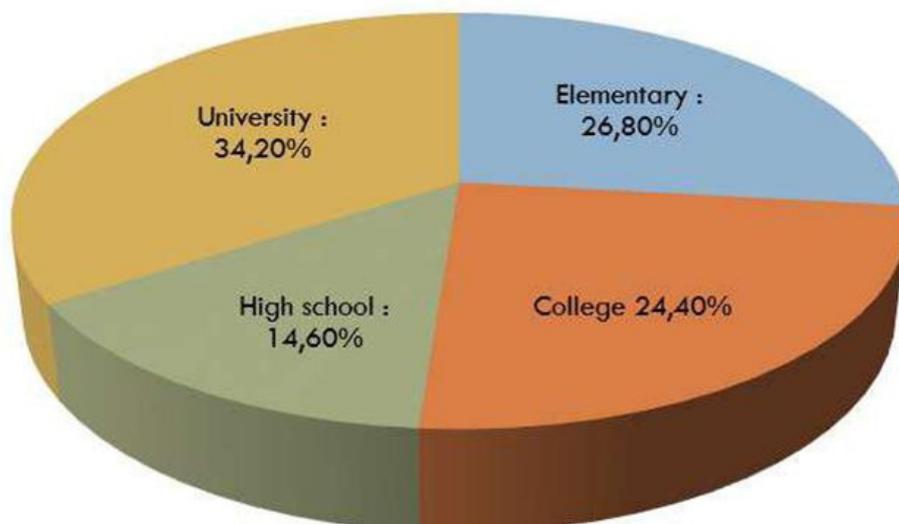


Figure 1: Distribution of patients by educational level

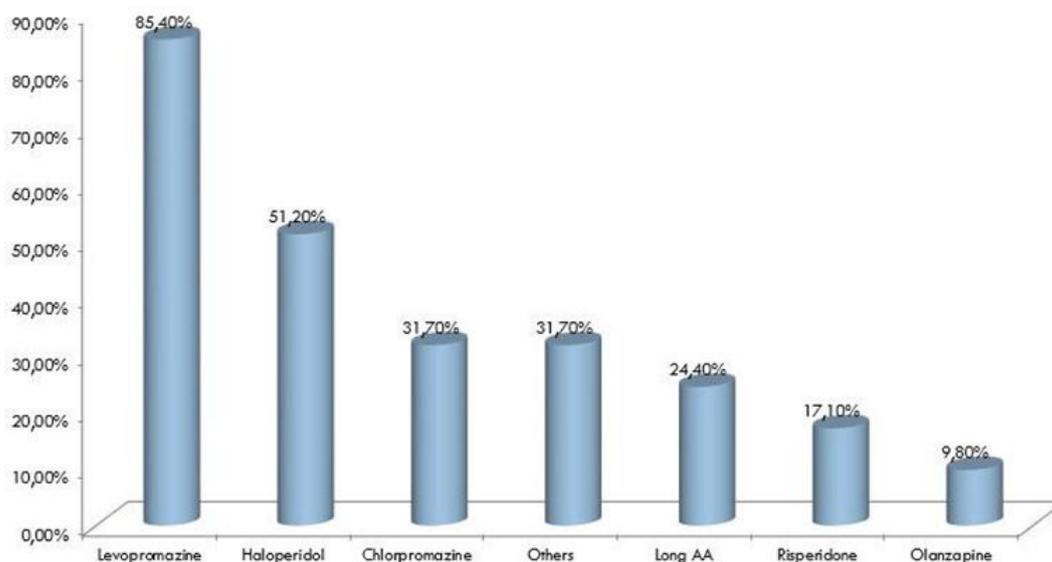


Figure 2: Distribution by treatment received

- Statistically significant correlations between: SAI treatment adherence and DAI ($p=0,001$), and between SAI relabeling of psychotic phenomenon and DAI ($p=0,005$).
- No statistically significant correlation between: SAI awareness of illness subscale and DAI ($p=0,4$).
- SAI awareness of illness subscale statistically correlated with BCIS self-reflectiveness subscale ($p=0,007$) and BCIS composite index subscale ($p=0,006$).
- PCPT correct response trial mean inversely correlated with BCIS self-certainty subscale ($p=0,025$).
- No statistically significant correlations between: neuropsychological tests (BCST, PCPT) and clinical insight (SAI).

Discussion

Insight can be broadly classified into clinical and cognitive. The former is a simpler definition which empowers the clinician to understand whether a patient is aware of the symptoms. The later refers to a higher and complex concept of metacognition, which deals with one's ability to examine distorted cognitive views and revise them [5].

The relationship found between clinical insight and attitudes toward taking medication confirmed previous studies [6,7]; but not all the facets of insight were associated with treatment compliance in this study; one explanation is that reasons for nonadherence are multifactorial (current or past drug-dependency, poor relationship with the therapist, shorter length of illness, hospital discharge without an adequate follow-up plan or environment, distress associated with specific side effects or general fear of side effects, inadequate efficacy with persistent symptoms, believing that medication is no longer needed ...[8]); therefore, multiple approaches, beyond the problem of insight, are necessary to address the complex problem of nonadherence [4].

The Beck Cognitive Insight Scale has two distinct subscales, self-certainty and self-reflection. Poor insight is characterised by a high degree of certainty in one's (mis)interpretations, and a lack of self-reflectiveness [9].

The relationship between insight of illness and cognitive insight has been investigated by Beck *et al.* and Pedrelli *et al.*, and a significant positive association was found between self-reflectiveness and clinical insight, whereas no association was found between self-certainty and clinical insight. Thus, the finding in the current study is congruent with the finding in the studies cited above [9].

The inverse correlation between the BCIS self-certainty subscale and the PCPT mean, suggest that the overconfidence in the validity of the patients beliefs could be a predictor of their cognitive impairment.

But although numerous studies report unawareness of illness to be associated with dysfunction on several neuropsychological tests, the findings are inconsistent. For example, although an association of insight with performance on the Wisconsin Card Sorting Test (WCST) has repeatedly been reported, a number of studies have failed to replicate such a relationship [10], which is challenging the hypothesis that insight deficits are exclusively or primarily related to frontal lobe brain dysfunction, at least as measured by the Wisconsin Card Sorting Test.

Limitations and perspectives

There are several limitations to this study.

Sample size was small; especially the number of females was very small in comparison to the number of males; patients were mostly middle-aged males with mild disease severity and more than 5 years of illness duration. Confirmation is therefore required on more diverse and larger groups of patients.

Our findings should be confirmed in future studies by specifically assessing metacognitive capacities and testing the links with neurocognition, insight and nonadherence.

Conclusion

As some studies suggest the correlation between clinical insight and cognition, some cognitive therapies could be useful to improve the insight which is considered as one of the most important factors of treatment adherence in patients with schizophrenia; but it's important to consider the multifactorial character of insight itself. Thus, further studies may determinate the most influential factors on the insight and how to deal with them.

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