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Cognitive insight in schizophrenia patients and their biological parents: A pilot study

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ABSTRACT

Background: Clinical insight in schizophrenia patients is partly associated with familial environment but has been poorly studied to date. We aimed to explore (1) the relationship between parents' cognitive insight and their offspring's; (2) the relationship between parents' cognitive insight and their clinical insight into the disease of their offspring; and (3) the clinical and cognitive determinants of cognitive insight in parents.
Methods: Cognitive insight was assessed in 37 patient–biological parent pairs/dyads with the Beck Cognitive Insight Scale (BCIS). Other measures included the Scale to assess Unawareness of Mental Disorder and cognitive assessments.
Results: We found no significant association between parents' cognitive insight and their offspring's. Conversely, a positive association between parents' cognitive insight and parents' insight into their offspring's symptoms was found. Better awareness of their offspring's specific symptoms was associated with lower levels of overconfidence in one's beliefs and with BCIS total score. BCIS Self-Certainty and BCIS total score were associated with better executive functioning and verbal comprehension.
Conclusions: Better insight into their offspring's symptoms is associated with cognitive insight in biological parents of schizophrenia patients. Our results support the integration of cognitive intervention targeting parents' cognitive flexibility in family psychoeducational programs and provide an important first step towards developing a more refined understanding of the factors involved in insight into symptoms of illness in parents of schizophrenia patients.

1. Introduction

A general lack of insight into illness is common among patients with schizophrenia (Amador and Gorman, 1998; Lysaker et al., 2008). Past studies published over the last three decades have emphasized the specificity of this phenomenon in schizophrenic disorders versus other mental disorders, psychotic or not (Amador et al., 1994; Gilleen et al., 2011). Previous studies estimate that between 50 and 80% of patients with schizophrenia do not believe that they have a disorder (Amador and Gorman, 1998). Poor insight is related to medication nonadherence (Hill et al., 2010), poor capacity to consent to treatment (Capdevielle et al., 2009) and has long been recognized as a risk factor for poorer functional outcome (Mohamed et al., 2009).

Recently, Beck et al. (2004) proposed an important extension of the classical insight concept (which they term "clinical insight") with the description of "cognitive insight". "Cognitive insight" is defined as an individual's current ability to examine and question beliefs and interpret experiences. Whereas clinical insight focuses on awareness of illness factors such as the awareness of having a mental disorder, the need for treatment and the social consequences of the disorder, the concept of cognitive insight builds on the principles of cognitive theory and Cognitive Behavioral Therapy (CBT). It focuses on the cognitive processes involved in correcting erroneous judgments and certainty about misjudgments (Beck et al., 2004). Studies investigating the factor structure of the BCIS have indicated two distinct dimensions of cognitive insight both in schizophrenia patients ((Beck et al., 2004; Favrod et al., 2008; Pedrelli et al., 2004), bipolar patients (Engh et al., 2010) and healthy controls (Engh et al., 2010; Kao et al., 2011): Self-Reflectiveness (SR) and Self-Certainty (SC)). The first reflects introspection and willingness to observe one's own mental productions and to consider alternative explanations while Self-Certainty (SC) measures mental flexibility or overconfidence in one's beliefs (Beck et al., 2004). Past studies have

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demonstrated that individuals with psychotic disorders have impaired Self-Reflectiveness and are overconfident relative to those without psychotic disorders (e.g. major depression and healthy controls) (Beck et al., 2004; Kao & Liu, 2010; Martin et al., 2010). In addition, although literature showed that cognitive insight consistently correlates with clinical insight, there is an evidence that these two constructs are "complementary" rather than "overlapping" (see Riggs et al., 2012 for a review).

From a clinical perspective, cognitive insight has been associated with a wide range of clinical manifestations such as the creation and maintenance of delusions in schizophrenia patients (Buchy et al., 2009; Engh et al., 2010), depression (Misdrahi et al., 2014) or competence to consent to treatment (Raffard et al., 2013).

The majority of studies in the schizophrenia literature have focused on clinical, cognitive or brain abnormalities specifically associated with poor cognitive insight. Nevertheless, the influence of environmental and familial factors alongside neuropsychological changes, and particularly the relationship between parents' reasoning bias and patients' cognitive insight have not been yet studied. Moreover, although the direct role of the family in the development of schizophrenia is no longer supported, parental communication deviance (Nugter et al., 1997; Roisko et al., 2014) and adverse family environment can be predictive of illness prognosis (Butzlaff and Hooley, 1998) and may constitute a potential factor involved in poor cognitive insight in schizophrenia patients.

Regarding clinical insight, four studies in the current literature all found a significant positive correlation between patient and caregivers' insight in at least one dimension despite modest sample sizes (between 14 and 40 patient–caregiver dyads) and heterogeneous caregiver groups, including biological relatives, partners, friends or mental health professionals (Brent et al., 2011; Gigante & Castel, 2004; Smith et al., 1997; Tranulis et al., 2008). However, to our knowledge, cognitive insight has not yet been studied in parents of schizophrenia patients.

In addition, the possible impact of parents' reasoning biases (i.e. cognitive insight) on patients' awareness of illness and symptoms is also a clinically important question that has received little attention in clinical literature and in research.

The first aim of this study was to explore the relationship between patients' cognitive insight and that of their parents. The second objective was to explore the associations between parents' cognitive insight and their clinical insight into the disease of their children. Thirdly, we sought to assess the clinical and cognitive determinants of cognitive insight in parents of schizophrenia patients. Finally, we aimed to examine to what extent parents' cognitive insight and patients' insight into illness are related in schizophrenia.

2. Methods

2.1. Participants

We recruited patients meeting DSM IV-TR criteria for schizophrenia (American Psychiatric Association, 2000), currently receiving inpatient or outpatient care in Montpellier University Hospital (the Montpellier Insight Study). None were in the acute phase of psychosis (for inpatients, minimum of three weeks between admission and participation in the study). Inclusion criteria were between 18 and 55 years of age and having a diagnosis of schizophrenia. Exclusion criteria were substance dependency other than cannabis or tobacco, substance abuse other than cannabis or alcohol, co-morbid neurological disorder, history of severe brain trauma or current electro-convulsive therapy. Parent inclusion criteria were aged 75 years old or younger. Parent exclusion criteria were co-morbid neurological disorder or history of severe brain trauma. All participants needed to speak, read and write French fluently.

The flow chart in Fig. 1 describes the inclusion process. Patient participation rate was 43.6%. In all, 41 patients participated for whom at least one parent did too. For 30 patients, only one parent participated, most often (in 76.7% of cases) the mother; it was thus decided to use the mother's data when possible. All participants provided written consent. The study received approval by the local ethics committee for medical research.

2.2. Procedure

Patients were assessed by trained psychologists and were assessed by a psychiatrist (A.M.). Participants in the parent group completed the Beck Cognitive Insight Scale (BCIS) and a modified version of the Scale to assess Unawareness of Mental Disorder (SUMD) in order to explore their insight into their offspring's disorder. Concerning insight, patients only completed the BCIS. Patients and their parents both underwent identical cognitive assessments. For the purpose of the study only cognitive data from parents were reported. Parents completed all clinical measures in one session. For schizophrenia patients, the data were obtained in two sessions and completed in two consecutive days. The first day's session consisted the same session as the parents. The second session for participants with schizophrenia involved the administration of the PANSS.

2.3. Measures

2.3.1. Cognitive insight

The BCIS is a 15-item self-report measure initially designed to assess cognitive insight in patients with psychosis (Beck et al., 2004; Favrod et al., 2008 for the French version). Participants rate the extent to which they agree with statements on a scale from 0 (do not agree at all) to 3 (agree completely). The BCIS is composed of 2 subscales, Self-Reflectiveness (9 items) and Self-Certainty (6 items). A composite cognitive insight index score (Composite Index) is obtained by subtracting the Self-Certainty subscale score from the Self-Reflectiveness subscale score and is considered a measure of cognitive insight.

2.3.2. Clinical insight

Insight into illness was assessed using a modified version of the SUMD (Amador et al., 1993; Raffard et al., 2010 for the French version) in which questions were rephrased to probe parents insight into their child's illness — e.g., 'do you think that your son has a mental disorder'? Our parent version of the SUMD follows the model of Brent et al.'s (2011) adaptation of the SUMD for caregivers. For the purpose of the study we used the three general items assessing awareness of having a mental disorder, the effects achieved from medication and the social consequences of having a mental disorder, as well as insight into symptoms and their attribution to the mental disorder. These dimensions of insight were rated in present time on a five-point Likert scale ranging from one (aware) to five (unaware) with higher scores indicating lower awareness.

2.3.3. Neuropsychological assessment

Working memory was assessed with the updating paradigm (Morris & Jones, 1990). The dependent variable was calculated by averaging the number of consonants correctly (serially) remembered over all span levels.

For executive functioning we used the Behavioral Assessment for Dysexecutive Syndrome (BADS, Wilson et al., 1996). The dependent variable was the BADS total score.

Verbal memory was assessed with the verbal memory subtest of the Montreal Cognitive Assessment (MoCA, Nasreddine et al., 2005). In addition we used the subtests Vocabulary and Digit symbol-coding of the Wechsler Adult Intelligence Scale third version (WAIS-3, Wechsler, 1997) to assess verbal comprehension and processing speed respectively.