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# Insight of patients and their parents into schizophrenia: Exploring agreement and the influence of parental factors



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## ABSTRACT

Poor insight is found in up to 80% of schizophrenia patients and has been associated with multiple factors of which cognitive functioning, social and environmental factors. Few studies have explored associations between patient insight and that of their biological parents', and the influence of parental factors. Insight was assessed in 41 patients and their biological parents with Amador's Scale for the assessment of Unawareness of Mental Disorder (SUMD). Parents' knowledge about schizophrenia and critical attitudes were assessed with validated self-report questionnaires. Both groups underwent cognitive assessments for working memory and executive functioning. Insight in patients and their parents was not associated for any of the SUMD dimensions but a significant correlation was found between patient and parent awareness of treatment effect for patient–parent dyads with frequent daily contact. Low parental critical attitude was associated with higher patient awareness of symptoms and a high parental memory task score with high patient insight. Our study is the first to suggest a possible influence of parental factors such as critical attitudes and cognitive performance on patient insight.

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## 1. Introduction

Lack of insight affects up to 80% of patients suffering from schizophrenia (Amador et al., 1994) and has become a topic of increasing interest over the past 20 years. Originally considered as a single entity, either present or absent in patients, clinical insight is today recognised as a multidimensional construct comprising awareness of having a mental disorder, of treatment effects, of social consequences of mental disorder and of specific symptoms, as well as the ability to attribute symptoms to the disorder. The negative impact of poor insight on treatment adherence (Amador et al., 1993), functional outcome (Lincoln et al., 2007) and disease prognosis (Schwartz et al., 1997) has encouraged researchers to explore the various factors underlying insight in schizophrenia, thus inspiring clinicians to offer diverse interventions aiming to improve patients' awareness of disease (Pijnenborg et al., 2013).

Despite the strong evidence, (Shad et al., 2006; Raffard et al., 2009; Boyer et al., 2012; Liemburg et al., 2012; Raij et al., 2012; van der Meer et al., 2013) prefrontal cortex dysfunction alone cannot

explain the complexity of poor insight in psychosis. Other psychological (Lysaker et al., 2003a; 2003b), social and environmental factors (Johnson and Orrell, 1995; White et al., 2000; Pruß et al., 2012), have also been associated to it but very little research has focused specifically on familial factors.

To date, only a few studies have compared caregivers' and patients' insight into illness (Smith et al., 1997; Gigante and Castel, 2004; Tranulis et al., 2008; Brent et al., 2011). However, findings are inconsistent due to the different scales used to measure insight and study populations. Two studies assessed insight with the SUMD (Scale to Assess Unawareness of Mental Disorder) (Smith et al., 1997; Brent et al., 2011), one used a non validated Portuguese translation of David's Scale for the Assessment of Insight (SAI) (Gigante and Castel, 2004), and one created an "Extracted Insight Score" (Tranulis et al., 2008). Caregiver insight of patients' mental disorder was assessed with modified versions of the same scales. Smith et al. (1997) compared insight scores between groups of patients and their significant others, finding no significant difference between the scores in the two groups for all SUMD dimensions except for attribution of symptoms. Correlation coefficients were not calculated. The other three studies found significant correlations between patient and caregivers' insight but not for all dimensions (Gigante and Castel, 2004; Brent et al., 2011) and coefficients were often moderate to low (Gigante and Castel, 2004;

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Tranulis et al., 2008). Furthermore sample sizes were modest (14 (Brent et al., 2011), 18 (Tranulis et al., 2008) 22 (Smith et al., 1997) and 40 (Gigante and Castel, 2004) patient-caregiver dyads), patient diagnoses were heterogeneous (comprising all schizophrenia spectrum disorders including first episode psychosis) and caregiver groups did not focus specifically on biological relatives.

To our knowledge, none of these studies directly explored associations between family or caregiver factors and patient insight. Brent's study does however provide indirect support for the hypothesis of an association between patient insight and caregiver levels of criticism assessed by the Patient Rejection Scale (PRS) as far as it found a correlation between lower caregiver PRS scores and better caregiver insight, and that in the same study certain dimensions of caregiver and patient insight were related. Another study explored the impact of family history of schizophrenia on patient insight (Danki et al., 2007), but no further literature is available on the other parental factors that may influence patients' insight. Yet the impact of patient's entourage on treatment adherence and clinical course is well established whether it be via expressed emotion levels or family interventions (Sellwood et al., 2003). Cognitive dysfunction found in healthy first degree relatives of schizophrenia patients (Snitz et al., 2006) could also explain altered parental insight into their offspring's disorder. Furthermore, parental knowledge about schizophrenia could also impact patients' own awareness of illness as it has been associated to stigma which itself is associated to insight and social distance (Pruß et al., 2012).

The main objective of this paper was to study the association between insight in schizophrenia patients and that of their biological parents, overall and according to daily contact. Our hypothesis was that high parental insight would be associated with high patient insight and that daily contact would increase association strength. We then sought to explore what other parental factors could be associated with patient insight, our hypothesis being that better cognitive functioning, lower expressed emotion levels, and better knowledge about schizophrenia in parents would be associated with higher patient insight levels.

## 2. Methods

### 2.1. Subjects and inclusion procedure

Between January 2012 and March 2014, we recruited patients meeting DSM IV criteria for schizophrenia (American Psychiatric Association, 1994), currently receiving inpatient or outpatient care in the Montpellier University Psychiatric 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 being 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 being aged 75 years old or younger and able to come to the hospital to participate in the study. Parent exclusion criteria were co-morbid neurological disorder or history of severe brain trauma.

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 the mother (23 (76.7%)); it was thus decided to use the mother's data when possible. For 7 patients only the father's data was available. All participants provided written consent after the nature of the procedures had been fully explained to them. The study design received approval by the French medical ethics committee.

Patients were assessed by a trained psychologist (C.R or M.R), parents were assessed by a psychiatrist (A.M.). Information was collected relating to socio-demographic status, substance-use disorders (DSM IV), current treatment and frequency of daily contact between patient and parent.

### 2.2. Assessments

#### 2.2.1. Clinical assessments

Patients' symptom severity was assessed using the French version of the PANSS (Positive and Negative Symptom Scale) (Lançon et al., 1999). Parents' current and

past psychiatric history was explored using the SCID-I semi-structured interview, validated in French (First et al., 2000). Parents' knowledge about schizophrenia was assessed using the Knowledge About Schizophrenia Test (KAST) which covers the origins of schizophrenia, its manifestations and treatment in 18 multiple choice questions (Compton et al., 2007). Parents' critical attitudes were assessed by the Patient Rejection Scale (PRS), a self-report questionnaire of 24 items describing common rejecting attitudes towards patients with mental disorders (Kreisman et al., 1979; 1988). Items are scored on a Likert scale of 0 "never" to 7 "always".

#### 2.2.2. Insight assessment

Current insight among patients was assessed with the French version of the SUMD (Raffard et al., 2010). Among parents we used a modified version in order to explore their insight into their offspring's disorder. The SUMD contains three general items assessing awareness of mental disorder (Q1), the effects of treatment (Q2) and the social consequences of the disorder (Q3), followed by 17 items assessing awareness and attribution of specific symptoms. Each item is scored on a Likert scale of 1 (full awareness/correct attribution) to 5 (totally unaware/erroneous attribution). Symptom awareness is only explored if the patient is sufficiently symptomatic (score  $\geq 3$  on the PANSS scale for the corresponding symptom) and attribution is only assessed if the patient has sufficient awareness of the symptom ( $\leq 3$  on the SUMD). All patients had sufficiently high scores on the PANSS in order to explore awareness of at least three symptoms. For each subject we calculated an average symptom consciousness score, and an average symptom attribution score. A cut-off score was used to separate subjects with low insight ( $\geq 3$ ) from those with high insight (Amador et al., 1993).

#### 2.2.3. Cognitive assessment

Patients and their parents both underwent identical cognitive assessments. For working memory we used the updating paradigm (Morris and Jones, 1990): subjects were read a series of 6–12 consonants and asked to immediately recollect and transcribe the last 6. The series were read in two blocks of 16 series. The dependent variable was calculated by averaging the number of consonants correctly (serially) remembered over all span levels. For executive functions we used the Wisconsin Card Sorting Test (WCST) for mental flexibility (Nelson, 1976) and the Behavioural Assessment for Dysexecutive Syndrome (BADS) for problem solving (Wilson et al., 1996). For the WCST we retained three variables most often associated with insight in the literature (Shad et al., 2006): the number of completed categories, number and percentage of perseverative errors. We used a shortened version of the BADS (Behavioural Assessment of Dysexecutive Syndrome) comprising five of the six subtests: action planning, the key search test, the temporal judgement test, the zoo test and the six elements test (Wilson et al., 1996). BADS total scores were converted to BADS IQ equivalents thus taking subject age into account.

### 2.3. Statistical analysis

The sample is described using percentages for categorical variables and the median and range for continuous variables with skewed distributions. Normality was tested using the Shapiro-Wilk test. As distribution of insight was skewed, non parametric tests were used. Wilcoxon Test was used for comparing distributions between categories and the  $\chi^2$  Test or Fischer Test for testing associations between categorical variables. Correlation coefficients were calculated using Spearman's Test. This was considered preferable to using intra-class correlation as our distributions of insight are skewed. It is also the recommended dyadic analytical approach to measuring non-independence when dyads are distinguishable (Kenny et al., 2006). Comparison of patient and parent insight as categorical variables (high versus low) was performed with the McNemar paired  $\chi^2$  Test, in the whole sample and in two separate groups according to the presence or absence of patient and parent daily contact. Statistical analyses were performed with SAS version 9.2 (SAS Institute, Inc. Cary, North-Carolina).

## 3. Results

### 3.1. Sample characteristics

The sample is described in table 1. Patients were mainly male (82.9%) with a median duration of illness of 10 years [1–34]. None of the parents had a personal history of psychotic disorder. The median number of days of contact per month declared by the parents was 15, ranging from 1 to 31. Four patients (9.7%) saw their caregiver less than 5 days a month and 6 patients (14.6%) between 5 and 10 days a month. We defined frequent daily contacts as more than 27 days per month, this concerned 46.3% of dyads.

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