Preserved awareness of their cognitive deficits in patients with schizophrenia: Convergent validity of the SSTICS

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ABSTRACT

This study aimed to examine the convergent validity of the SSTICS. The association between the SSTICS and the five-factor model of the PANSS was also examined. One hundred and seventy-six schizophrenia-spectrum disorder patients were recruited. A correlation analysis was performed. The SSTICS score correlated with the score on the FPSES. The SSTICS score also correlated with the cognition factor of the PANSS. Our results demonstrate that the SSTICS is a good instrument for evaluating the subjective complaints of patients with schizophrenia. They also reveal good concordance between cognitive impairments experienced by patients and cognitive disorders assessed by a clinical rater.

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1. Introduction

Little is known about schizophrenic patients' subjective complaints concerning their cognition. Several instruments have recently been developed but these scales address the identification of different phenomenological subjective experiences of deficits rather than subjective experiences related to patients' specific cognitive disorders (Peralta and Cuesta 1994).

Only one instrument, the Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS) (Stip et al., 2003), was designed to specifically measure subjective complaints about the cognitive deficits consistently reported in schizophrenia. The SSTICS was validated both in a healthy sample (Mancini-Marie and Stip 2002) and in 114 community-treated patients who met the DSM-IV diagnostic criteria for schizophrenia, schizophreniform disorder, or schizoaffective disorder. The scale demonstrated good internal consistency and test–retest reliability. Moreover, several patients' SSTICS scores signifi-cantly correlated with their neuropsychological results concerning memory and attention. To date, the SSTICS has been translated into 6 languages and validation is in progress in several different countries.

The present study aimed to examine the convergent validity of the SSTICS by means of another scale assessing subjective complaints, the Frankfurt-Pamplona Subjective Experiences Scale (FPSES) (Cuesta et al., 1996). Our second objective was to find out how subjective complaints are related to the symptom profiles rated by the observer. Then, the association between SSTICS and FPSES total scores and the five-factor model of the PANSS was examined.

2. Materials and methods

2.1. Subjects

The study's population consisted of 176 patients (62 women) who met the DSM-IV diagnostic criteria for schizo-phrenia ($n=128$), schizoaffective disorder ($n=40$) or delu-sional disorder ($n=8$). The mean age of the patients was 33.5 years (SD = 11.6). Patients ($n=157$) for whom French was their mother tongue composed the majority of our sample, but all the subjects were fluent in French. Mean educational

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level was 11.6 years (SD = 2.2). Mean duration of illness was 72.9 months (SD = 87.9). All the patients were receiving antipsychotic medication, either a conventional antipsychotic (n = 20) or an atypical antipsychotic (n = 156). Sixty-two patients were receiving an antidepressant, 71 patients an anxiolytic, 46 patients a mood stabilizer, and 62 an antiparkinsonian drug. Patients were either community-based or hospitalised. All the participants gave their informed consent to participate in the study.

The psychopathological symptoms of a subsample of 71 of the patients (22 women and 49 men) were rated with the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987). These 71 patients received diagnoses of schizophrenia (n = 52), schizoaffective disorder (n = 17) or delusional disorder (n = 2). Their mean age was 33.4 years (SD = 11.4).

2.2. Assessment

Subjective experiences were evaluated with the short form of Süllwold's Frankfurt Complaint Questionnaire (Süllwold and Huber 1986), the Frankfurt-Pamplona Subjective Experiences Scale, translated into French. The short form of the FCQ is a self-rated instrument composed of 18 items. The original FCQ was composed of yes–no questions, but the Cuesta et al. (1996) revision (the FPSES) improved the measurability of subjective experiences thanks to a 5-point Likert format (ranging from 0 "never" to 4 "several times per day").

The SSTICS (Stip et al., 2003) was used to measure the subjective cognitive complaints specific to schizophrenic patients. The SSTICS is a 5-point scale (ranging from 0 "never" to 4 "very often") and contains 21 self-rated items. It assesses several cognitive domains which have described to be impaired in schizophrenia: 9 items are dedicated to explicit memory, 2 to working memory, 5 to attention, 3 to executive functions, 1 to language functions and 1 to gesture abilities. The SSTICS is formulated in a way that schizophrenic patients can easily understand. The SSTICS and the FCQ were simultaneously administered to the patients.

The PANSS is a 30-item rating instrument evaluating the presence/absence and severity of positive (7 items) and negative (7 items) symptoms and general psychopathology (16 items) of schizophrenia. It must be administered by a trained interviewer. All 30 items are rated on a 7-point scale (ranging from 1 "absent" to 7 "extreme"). Lindenmayer et al. (1994) identified a 5-factor model for the PANSS (the positive, negative, cognitive, excitement, and depression factors).

The scales and PANSS were administrated during the same interview by the same trained investigator for each patient.

2.3. Statistical analysis

Statistical analyses of the data were performed in two steps using Statistical Package for the Social Sciences (SPSS v15).

First, a correlation analysis (Pearson correlation) was performed with the total scores from the FPSES and the SSTICS scales for the whole sample of patients (n = 176). Second, a correlation analysis (Pearson correlation) was performed with the total scores from the PANSS and either the SSTICS or the FPSES for the 71 patients who had been tested with these scales. Moreover, relationships between

Table 1
Association between PANSS scores and FPSES and SSTICS total scores

	FPSES total score	SSTICS total score
PANSS total score	r = 0.068	r = −0.220
	p = 0.572	p = 0.065
PANSS positive symptoms	r = −0.057	r = −0.100
	p = 0.633	p = 0.407
PANSS negative symptoms	r = 0.094	r = 0.303
	p = 0.433	p = 0.01*
PANSS cognition	r = 0.151	r = 0.338
	p = 0.207	p = 0.004**
PANSS excitement	r = −0.156	r = −0.213
	p = 0.192	p = 0.074
PANSS depression	r = 0.200	r = 0.260
	p = 0.092	p = 0.029*

r = Pearson correlation coefficient.
*p ≤ .05; **p ≤ .01.

each of the five factors listed above for the PANSS and the total scores on the SSTICS and FPSES were explored.

3. Results

Mean FPSES and SSTICS total scores were 11.8 (SD = 7.82) and 24.73 (SD = 9.56), respectively. The SSTICS total score positively correlated with the FPSES total score (r = .541, p < .01).

In our subsample of 71 patients, mean FPSES and SSTICS total scores were 13.44 (SD = 10.00) and 26.54 (SD = 11.86), respectively. The mean PANSS total score was 62.33 (SD = 36.40), mean positive symptoms score was 14.42 (SD = 14.23), mean negative symptoms score was 18.55 (SD = 9.8), mean cognition score was 7.92 (SD = 3.85), mean excitement score was 8.1 (SD = 11.81) and mean depression score was 6.76 (SD = 3.12).

Although the FPSES total score was not correlated with the PANSS total score nor with any of the five factors of the PANSS, the SSTICS total score was positively correlated with the cognition (r = .338, p = .004), negative symptoms (r = .303, p = .01) and, to a lesser extent, depression (r = .260, p = .029) scores of the PANSS (see complete results in Table 1).

4. Discussion

The first aim of this study was to examine the convergent validity of the SSTICS by means of another scale that also assesses subjective complaints. Our results argue that the convergent validity is satisfactory, since the total score on the SSTICS correlates with the FPSES score strongly and positively. Consequently, the SSTICS achieves two complementary objectives: first, this scale allows the subjective complaints of schizophrenic patients to be quickly (only 21 items, 6 min on average to complete the scale) and appropriately evaluated; second, unlike earlier scales that were designed to assess subjective complaints in a rather approximate manner, the SSTICS specifically targets the subjective complaints regarding the cognitive deficits that are consistently reported in schizophrenia-spectrum disorder.

The second objective of this study was to observe how subjective complaints are related to the symptom profiles rated by a trained observer. Our results demonstrated that the SSTICS total score was positively correlated with the cognition score of the PANSS. This result suggests that patients with

schizophrenia-spectrum disorder might be conscious of their cognitive deficits. Moreover, we demonstrated in our validation study of this scale that subjective complaints relative to cognitive deficits correlated with several objective cognitive measures, such as explicit memory (Stip et al., 2003). Consequently, the SSTICS can be considered to be a suitable scale to assess subjective complaints associated with objective cognitive deficits that are recognized by neuropsychological tests, as identified by the clinician using the PANSS. As demonstrated in other studies (Bowie et al., 2008; Keefe et al., 2006), the pattern of relationships between cognitive abilities and functional outcomes is complex. It could be of particular interest to show whether complaints of patients related to their cognitive impairments are associated with deficits experienced during daily life or whether their complaints concern more fundamental cognitive abilities implied in their coping skills. Responding to these aims could give information to adjust the objectives of the cognitive remediation therapies that can be proposed to the patients. Studies using measures of subjective complaints about the cognitive deficits consistently reported in schizophrenia, such as the SSTICS (or the Schizophrenia Cognition Rating Scale (Keefe et al., 2006)) and of functional capacity both are required to clarify this issue. Furthermore, we did not find any relationship between the SSTICS total score and the severity indicated by the PANSS lack of judgement and insight score (item G12 of the PANSS) which is described by the following sentence: Impaired awareness or understanding of one's own psychiatric condition and life situation. This is evidenced by failure to recognize past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalisation or treatment, decisions characterized by poor anticipation of consequences, and unrealistic short-term and long-range planning. Although this result has to be confirmed, we propose that the consciousness of cognitive deficits may be independent of insight into the symptoms of the disease.

These interpretations could clarify the slight positive correlation obtained between the SSTICS score and the severity of the PANSS depression score. Some studies have previously demonstrated relationships between depressive symptoms in schizophrenic patients and their poor cognitive performance (Brebion et al., 1997; Holthausen et al., 1999). Our study suggests that subjective complaints of cognitive deficits may influence patients' objective depressive state, as rated by the clinician. Even though consciousness of their cognitive deficits alone may not be considered as responsible for a depressive mood, it could be considered as a non-negligible factor in the expression of depressive states in schizophrenia, especially due to the consequences of cognitive deficits for daily life functioning.

The relationship between severity of negative symptoms and neurocognitive deficits such as executive functions or memory has been described in schizophrenic patients before (Hughes et al., 2003). The SSTICS total score was also found to be correlated with the PANSS negative score in our previous study (Stip et al., 2003). Despite evidence relating negative symptoms to cognitive deficits, a major difficulty, when cognitive and negative symptoms have to be distinguished, is the fact that cognitive disorders can mimic negative symptoms (Moller, 2007). The SSTICS could become a valuable assessment tool for clinicians in defining and delimiting the influence of cognitive deficits and negative symptoms on the functional outcomes of schizophrenia-spectrum disorder patients.

Hake et al., (2007) have demonstrated that schizophrenic patients who benefited from cognitive remediation therapy reported fewer subjective complaints than patients who did not take advantage of this therapy. Consequently, the SSTICS might be used as a good compromise when cognitive tests are difficult to administer in clinical settings and also be considered as an accurate clue in deciding whether to assign schizophrenic patients to cognitive remediation therapies (Hake et al., 2007).

Patients were either community-based or hospitalised and it could be hypothesized that complaints about the cognitive deficits could differ according to their status. Future studies might include more homogeneous samples of patients to decide if status is related to the amount of cognitive complaints with schizophrenia.

Contributors

ES designed the study and wrote the protocol. CB, AP, PL, LN, AL and ES recruit subjects at their respective sites. LL managed the literature searches, the manuscript preparation, undertook the data analysis and wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of interest

None.

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