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Subjective experiences in schizophrenia and bipolar disorders

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Abstract Studies comparing 'subjective experiences' in schizophrenic and affective disorders have reached inconclusive results. We investigated the pattern of 'subjective perceived cognitive disturbances' in a group of 55 schizophrenic patients and 39 bipolar patients hospitalized for an index psychotic episode. The assessment of the subjective experiences was made using the Frankfurter Beschwerde-Fragebogen (FBF). Comparing the two groups on the four FBF factors, schizophrenic patients showed significantly higher scores in the areas of 'central cognitive disturbances', 'perception and motility' other than a significantly higher FBF total score. Our results suggest that cognitive, perception and motility disturbances are the most characteristic subjective experiences of schizophrenic patients in comparison with bipolar patients. This finding needs to be further explored in light of the issue of cognitive dysfunction in schizophrenia.

Key words Subjective experiences · cognition · schizophrenia · bipolar disorders

Introduction

Abnormal subjective experiences, other than delusions and hallucinations are becoming accepted as having important implications for the comprehension and treatment of schizophrenic disorders [1]. These experiences

include a great variety of cognitive dysfunction complaints about attention, perception, memory, thinking, language, movement and emotion. No universal definition of subjective complaints exists, and assessment of these symptoms largely depends on the particular approach researchers use [1]. Basic symptoms, which can be included in the field of subjective experiences, are considered the underlying basis over which the characteristic schizophrenic symptoms are grounded [15]. The theory of basic symptoms affirms the presence of cognitive disorders, prior to the development of symptoms and subjectively accessible outside the acute phases of the disorder. Basic symptoms were first observed in the defect state of schizophrenia [15] and were subsequently found in the prodromal [11] and in the acute phases of schizophrenia itself [18]. The standard formulation of the basic symptoms theory postulates that these phenomena are relatively aspecific, since they can be also recognized in other non-schizophrenic syndromes [16] like in bipolar disorders [28].

As a matter of fact, both bipolar disorder-like and schizophrenia-like symptoms may present in the same episode, and the patient may not be clearly classifiable into either category [2, 10, 20, 23]. Therefore, despite differences in underlying pathophysiology of the disorders, diagnoses must rely on observations of behavior which is not diagnostically specific and that can change over time [6]. Actually, the study of 'subjective experiences' may add more details on diagnostic status better describing 'qualitative aspects' of psychosis in *that* patient. Expert clinicians could use this information to tailor psychopharmacological and psychosocial interventions [3, 4, 26].

Most studies on the subjective experiences have been conducted in schizophrenia and to a lesser extent in affective disorders. However, studies comparing subjective experiences in schizophrenic and affective disorders have reached inconclusive results. The overall prevalence of subjective experiences seems to be quite similar in the two conditions [30, 31, 38], but particular subjective experiences were found to be more prevalent

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in schizophrenia than in affective disorders [9, 22, 31, 32]. Considering major affective psychosis, Ebel et al. [9], using the Bonn Scale for the Assessment of Basic Symptoms [12], pointed out that the main differences between schizophrenic and affective patients regarded cognitive thought and perception disorders and coenaesthesia, which were more often seen in schizophrenic than in affective patients. The aim of the present study was therefore to further evaluate and compare the subjective experiences in schizophrenic and bipolar patients, in order to elucidate differences between the two groups. The assessment of the subjective experiences was made using the Italian translation of the Frankfurter Beschwerde-Fragebogen (FBF) [36].

Methods

The study was conducted at the Villa Serena Medical Center, a psychiatry tertiary referral center with 80 beds for acute patients. Consecutive admission of non-organic psychotic patients, recently hospitalized for an index psychotic episode, comprised the population sample, which consisted of 94 patients (21 females, 73 males). The group was composed of 55 (58.5%) schizophrenic and 39 (41.5%) bipolar patients (22 recently manic, 17 mixed and 13 with delusions and hallucinations) drawn from a consecutive series of 110 patients; 16 of whom refused to fill out the questionnaire. We decided to limit the study to these 2 groups of subjects because they represented the most prevalent diagnoses in our series. Patients with schizoaffective, schizophreniform and atypical psychosis were excluded.

Demographic characteristics of the patients by diagnosis are shown in Table 1. All subjects were diagnosed according to DSM-IV criteria, ascertained on the basis of a personal interview by a senior psychiatrist (A.R.) and medical chart reviews. They were taking classical neuroleptics (all subjects), lithium ($n = 14$), carbamazepine ($n = 9$) and valproic acid ($n = 16$). The chlorpromazine-equivalent mean daily dose [17] was 650.12 mg (SD 205.80 mg) at the time of the evaluation. Patients gave informed consent to participate in the study.

Assessment

The Italian translation of the FBF [36] was used to evaluate the subjective experiences. The FBF is a measure for self-evaluation of subjective disturbing experiences of cognitive impairment. Even though the use of this instrument has been restricted to a large extent to German-speaking countries, quite recently several papers using FBF translations have appeared in the English literature [8, 21, 26, 27, 29, 35]. The questionnaire consists of 98 yes/no statements grouped into 10 *phenomenological areas*: loss of control, simple perception, complex

perception, language, thought, memory, motility, lack of automatism, anhedonia-anxiety, and sensory overstimulation. These *phenomenological areas* were grouped from the spontaneous complaints of schizophrenic patients collected in a review of hundreds of clinical records. Furthermore, the FBF items can be organized into 4 dimensions, as indicated by Süllwold and Huber [37] on the basis of factorial analysis: central cognitive disturbances, perception and motility, depressivity and internal and external overstimulation. Findings from the *phenomenological areas* will not be discussed in this paper because of limited psychometric validity, despite the descriptive validity for phenomenological investigation.

The time required by the schizophrenic patients to complete an FBF varied from 35 to 50 minutes. Since the patients themselves complete the questionnaire, it was administered just before the planned discharge from the research unit once acute symptoms had remitted.

Statistics

The statistical analysis was performed using the SPSS-PC package [24]. Since the distributions of FBF scores were skewed, we used non-parametric techniques (Mann-Whitney U test and Spearman rank correlation) for statistical analysis. Furthermore, we used the Discriminant Analysis, stepwise method, to identify the best discriminators of the two groups.

Results

Results of the FBF questionnaire in the two groups of patients studied are reported in Table 2. Patients with schizophrenia, when compared to patients with bipolar affective disorder, were found to show significantly higher scores in the *phenomenological areas* of loss of control ($p = 0.044$), simple perception ($p = 0.032$), complex perception ($p = 0.041$), motility ($p = 0.035$) and lack of automatism ($p = 0.049$). Comparing the two groups on the four FBF factors, schizophrenic patients showed significantly higher scores in the factorial areas of central cognitive disturbances ($p = 0.045$) and perception and motility ($p = 0.016$); furthermore they showed a significantly higher FBF total score ($p = 0.024$). The discriminant analysis on the four FBF factors and total score yielded 60.2% of grouped cases correctly classified (65.8% of bipolars and 56.4% of schizophrenics). Interestingly, only the 'perception and motility' FBF factor produced a satisfactory degree of separation as indicated by final Wilk's lambda (0.9410) for the discriminant function. No statistically significant between-group differences were seen for chlorpromazine-equivalent mean daily dose. No gender effect was seen with Mann-Whitney U test either for the total group or for the two groups, separately analyzed. No statistically significant correlations were seen between current daily dose

Table 1 Demographic characteristics of the patients by diagnosis (mean + SD)

	Bipolars (n = 39)	Schizophrenics (n = 55)
Age (yr)	36.7 ± 11.6	36.9 ± 8.3
Sex (M/F)	30/9	43/12
Education (yr)	10.7 ± 2.8	10.4 ± 3.3
Age at onset (yr)	27.4 ± 8.4	22.2 ± 6.4
Length of illness (yr)	10.9 ± 7.9	14.2 ± 9.7

Table 2 FBF total and subscales scores (mean + SD)

	Bipolars (n = 39)	Schizophrenics (n = 55)	Mann-Whitney U
FBF phenomenological areas			
Loss of control	2.87 ± 2.25	3.96 ± 2.50	790.5 ^a
Simple perception	2.23 ± 2.71	3.41 ± 2.75	775 ^b
Complex perception	2.23 ± 2.63	3.22 ± 2.35	786.5 ^a
Language disorder	4.02 ± 3.09	4.87 ± 3.27	902
Thought disorder	3.71 ± 3.37	4.92 ± 3.23	835
Memory	3.79 ± 3.14	4.98 ± 2.91	835
Motility	3.10 ± 2.74	4.43 ± 2.78	777 ^b
Lack of automatism	4.36 ± 2.91	5.65 ± 2.98	798 ^a
Anhedonia-anxiety	3.51 ± 2.65	4.54 ± 2.42	821
Overstimulation	3.92 ± 2.67	5.03 ± 2.69	828
FBF factorial dimensions			
Central cognitive disturbances	7.10 ± 6.69	9.96 ± 6.88	789.5 ^a
Perception and motility	7.46 ± 7.29	11.30 ± 7.22	737.5 ^c
Depressivity	11.51 ± 7.73	14.47 ± 7.46	822
Overstimulation	7.46 ± 4.93	9.34 ± 4.79	825.5
Total	33.54 ± 24.66	45.09 ± 24.28	757.5 ^d

^a $p < 0.05$; ^b $p < 0.04$; ^c $p < 0.02$; ^d $p < 0.03$

of antipsychotic medication, age, age at onset, length of illness, educational level and FBF scores.

Discussion

This study examines the issue of subjective experiences, as evaluated by FBF, in schizophrenia and bipolar disorders. We report that schizophrenic patients show higher FBF scores than bipolar patients on cognitive disturbances, perception and motility but not on depressivity and overstimulation. Our findings are in line with previous observation [9, 32] but not with those of Peralta & Cuesta [30] who concluded that subjective experiences, as evaluated by FBF, are not specific to schizophrenia. Differences in demographic features or composition of the clinical samples may explain differences between the studies. As a matter of fact, when a polydiagnostic approach was used, FBF scores showed a wide variation with higher scores more associated with Schneider-related criteria [29].

The higher 'subjective cognitive disturbances' we report in schizophrenic patients, deserves some comments within the broader issue of 'classical' cognition in psychosis [25]. Interestingly, investigation on 'objective' cognitive function and premorbid functioning found that abnormalities in these fields are not confined to schizophrenia but, even though in a lesser extend, are present in bipolar disorder [5, 13, 14, 33]. The higher FBF 'central cognitive disturbances' and 'perception and motility' factor scores indicate that some aspects of the psychosis, mainly related to positive symptoms in this group of recently admitted psychotic patients, could be translated in the so-called 'self-perceived cognitive disturbances' [29]. These scores could be lower among bipolars simply because the instrument is unable to cap-

ture the essence of bipolar psychosis (i. e., low validity) or because 'central cognitive disturbances' and 'perception and motility' FBF factor scores are not the core of bipolar psychosis. Further studies are needed to clarify the meaning of the FBF cognitive disturbances with respect to other objective measures of cognition [27] and in relation to other 'functional psychoses' [29].

Qualitative alterations of the perception of single objects or of some details of objects are more frequent and lasting in schizophrenia than in major affective patients [32]. Data about qualitative alterations of perceptions refer mainly to the vulnerability pattern (i. e. 'trait' dysfunction), which points to perceptive distortions, as being among the predisposing factors for schizophrenia [7, 19]. We can confirm the findings about 'perception' disturbances, reported previously by Ricca et al. [32], that the 'perception and motility' FBF factor produced a satisfactory degree of 'separation' between schizophrenic and bipolar patients in a discriminant analysis model. Furthermore, at least at the time of evaluation, we found no differences in overstimulation, probably more related to the 'state' dysfunction (i. e., active psychotic phase of the illness or impending relapse). Interestingly, in a discriminant analysis of the Wisconsin Card Sorting Test performances of schizophrenic and bipolar patients, we recently reported 48 % and 40 %, respectively, of subjects correctly classified [33]. These percentages are lower than those we report here with FBF, underscoring the validity of the instrument.

In conclusion, our results suggest that cognitive, perception and motility disturbances are the most characteristic experiences of schizophrenic patients in comparison with bipolar patients.

However, further studies are needed to clarify whether subjective experiences among the bipolar patients are a homogeneous phenomenon or if poor-outcome bipolar patients show higher subjective experiences. Furthermore, the analysis of the FBF cognition could also be used to approach this issue in schizophrenia and bipolar disorders in a different manner, monitoring the impact of the psychopharmacological and psychosocial treatments on cognition [4, 28]. One limit of the study is due to the cross-sectional approach so that subjective experiences have been addressed as a state-dependent variable and, therefore, the fundamental issue of subjective experiences as a trait-dependent variable was not addressed. A possible impact of different drug regimens on FBF scores should be further addressed even though the FBF seems to be more suitable within the domain of 'subjective evaluation' of drug treatment [34].

Further studies conducted in larger samples and during the course of the schizophrenic and bipolar disorders as well as control groups of non-psychotic psychiatric patients, to test the FBF specificity, are needed.

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