Validation of the Italian version of the Functioning Assessment Short Test (FAST) for bipolar disorder

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Aim. The Functioning Assessment Short Test (FAST) is a useful instrument for the assessment of overall functioning of people with bipolar disorder, showing good psychometric properties. The aim of this study is to validate the Italian version of FAST.

Methods. Translation and back-translation of the original FAST Spanish version were performed. Participants with bipolar disorder ($n = 132$) and healthy controls ($n = 132$) completed the FAST as a part of an assessment package including the Montgomery–Asberg Depression Rating Scale and the Young Mania Rating Scale. Internal consistency, inter-rater reliability, construct and discriminant validity were assessed.

Results. The FAST Italian version showed good internal consistency, inter-rater reliability and discriminant validity. The cut-off discriminating patients from controls was 15, with a sensitivity of 0.79 and a specificity of 0.80. Principal component analysis with oblique rotation showed factor loadings consistent with the *a priori* structure of the instrument.

Conclusions. This study confirmed the psychometric properties of FAST and extended its generalization and validity to the Italian population.

Introduction

Over the last years, a number of studies have highlighted the prevalence, severity and persistence of the psychosocial and occupational impairment often associated with bipolar disorder (Sanchez-Moreno *et al.* 2009).

Epidemiological data suggest that, even after remission of mood symptoms, many patients fail to reach premorbid social and occupational status (MacQueen *et al.* 2001). Long-term outcome studies show that only 25–40% of patients achieve full functional recovery (Huxley & Baldessarini, 2007).

Any treatment aimed to enhance function to the highest possible level should stem from an individualized and personalized plan (Ruggeri & Tansella, 2012), based on an assessment of the ability to efficiently and effectively function in different areas of life and throughout different phases of the illness.

Therefore, reliable assessment tools are needed to study the factors associated with disability and to evaluate functioning in clinical practice. Wide variations can be observed across studies in methods to assess social disability in bipolar patients and only a few instruments have been used in more than two studies (Sanchez-Moreno *et al.* 2009). Moreover, most instruments, such as the Life Skills Profile (Rosen *et al.* 1989), the Social Adjustment Scale (Schooler *et al.* 1979) and the Short Form-36 (Ware & Sherbourne, 1992), have a broad focus or have been developed for patients with schizophrenia and are therefore not suitable to address specific areas of impairment in bipolar disorder.

The aim of filling this gap prompted a research team from the Barcelona Bipolar Disorder Program to design a simple instrument, easy to apply, requiring a short time to be administered. This led to the development of Functioning Assessment Short Test (FAST) for the clinical evaluation of functional impairment presented by people suffering from bipolar disorders (Rosa *et al.* 2007). The growing importance of functional assessment in cross-cultural comparative studies and multinational trials requires instruments validated

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in several languages (Swaine-Verdier *et al.* 2004). We present here data on the Italian version of FAST, to address its validity and reliability. This study was carried out in the framework of the European Network of Bipolar Research Expert Centre (ENBREC, http://www.chusa.upmc.fr/ENBREC), a project funded by the European Union designed to foster multinational collaboration among centres with expertise in the clinical management of and/or research in bipolar disorders.

Methods

Participants

The study sample included 132 adult patients with a clinical diagnosis of Diagnostic and Statistical Manual of Mental Disorders-IV bipolar disorder, recruited between 1 January 2010 and 31 May 2011 from the caseloads of the Department of Mental Health and Neuroscience, University of Siena and the Department of Mental Health, San Carlo Hospital Trust of Milan and 132 healthy controls recruited from the general population in various community settings. The patients were referred by the treating clinicians to the validation study. Patients under 18 and over 65 years were excluded.

Trained clinicians confirmed the clinical diagnosis and assessed the bipolar patients by a package of instruments developed in the framework of the ENBREC project including, in addition to FAST, demographic data, clinical information on psychiatric history, comorbidity and current symptoms, the Montgomery–Asberg Depression Rating Scale (MADRS) (Montgomery & Asberg, 1979), the Young Mania Rating Scale (YMRS) (Young *et al.* 1978). MADRS and YMRS were administered at the same time of FAST. Healthy controls were assessed by FAST and provided socio-demographic data. All subjects gave informed consent to the study participation.

The instrument

The FAST is an instrument designed to be administered by trained clinicians. Its time frame refers to the last 15 days before assessment. It is a quite simple instrument, which usually requires less than 10 min to apply (Rosa *et al.* 2007). It had been validated in Spanish (Rosa *et al.* 2007) and Portuguese (Cacilhas *et al.* 2009). An English version has been used, but not validated (Smith *et al.* 2011). A recent longitudinal study found FAST to be useful in both multiple-episode and first-episode patients, showing that it is sensitive to detect small changes in functioning over 1-year follow-up (Rosa *et al.* 2012).

The Italian version was developed using the original Spanish version (Rosa *et al.* 2008). After translation and back translation, items were discussed by the investigators' team and a final version was agreed. The manual was translated as well and it was used to train a group of clinicians to administer the instrument.

FAST comprises 24 items, which cover six specific areas of functioning:

(1) Autonomy refers to the capacity of doing things alone and making one's own decisions.
(2) Occupational functioning refers to the capacity to maintain a paid job, efficiency of performing tasks at work, working in the field in which one was educated and earning according to the level of the employment position.
(3) Cognitive functioning refers to the ability to concentrate, perform simple mental calculations, solve problems, learn new information and remember learned information.
(4) Financial issues involve the capacity of managing the finances and spending in a balanced way.
(5) Interpersonal relationships refer to relations with friends, family, involvement in social activities, sexual relations and the ability to defend ideas and opinions.
(6) Leisure time refers to the capacity of performing physical activities (sport, exercise) and the enjoyment of hobbies.

All items are rated using a 4-point scale, 0 = no difficulty, 1 = mild difficulty, 2 = moderate difficulty and 3 = severe difficulty. The total score is obtained by adding up the scores of each item. The higher the score, the higher the impairment.

Statistical analyses

Psychometrics

We examined the construct validity, the discriminant validity and the inter-rater reliability of the FAST.

Construct validity

A principal component analysis (PCA) with varimax and oblique rotation was carried out on the 24 FAST items to examine the construct validity of the instrument (Jolliffe, 1986). The number of factors was selected by inspecting the screen plot and using components with an eigenvalue >1. Cronbach's alpha was used to evaluate the internal consistency of the factors.

Discriminant validity

Discriminant validity was examined by comparing the total FAST score between patients with bipolar

disorders and controls, and by comparing the total and factor scores among euthymic patients and those currently in a manic, depressive or mixed state. Multiple linear regression models were used to examine the relationship between total FAST score and diagnosis (bipolar *v.* control) or disorder phase (euthymic, manic, depressed and mixed) after adjusting for age, gender, education (in years), marital status (married/single) and work status (employed/other).

Receiver operating characteristic (ROC) analysis was carried out to determine the optimal cut-off on the total FAST score discriminating patients from controls. The ROC curve is a plot of the FAST total score sensitivity *v.* one minus specificity at each cut-off score.

Sensitivity refers to the scale's ability to correctly discriminate individuals with bipolar disorder from controls, and is calculated as the number of individuals with the disorder who score positive on the test divided by the total number of individuals with the disorder.

Specificity refers to the scale's ability to identify people with bipolar disorder, and is calculated as the number of individuals without the disorder who score negative on the test divided by the total number of individuals without the disorder. One minus specificity is the false-positive rate, i.e., the number of individuals without the disorder who score positive on the test divided by the total number of individuals without the disorder.

The area under the ROC curve may range from 0.5 if the instrument performs no better than chance in discriminating patients with bipolar disorder from controls, up to 1, in case of perfect discrimination.

Inter-rater reliability

Ten study clinicians were given each 10 clinical vignettes comprising relevant clinical information regarding fictitious patients with bipolar disorder and were asked to rate their functioning.

Inter-rater reliability was examined using the intraclass correlation coefficient (ICC). A two-way mixed effect model was used to calculate the coefficient, in which patient effects are random and rater effects are fixed. All statistical analyses were carried out using SPSS, version 20.

Results

The characteristics of 132 subjects with bipolar disorders and 132 controls are shown in Table 1.

The controls were 60.6% female and had a mean age of 41.2 (S.D. 14.4), the patients were 62.1% female and had a mean age of 47.7 years (S.D. 12.8). Eighty-seven patients met criteria for bipolar I disorder, 32 for bipolar II and 13 for bipolar disorder Not Otherwise Specified.

The patients' current state was euthymic ($N = 44$), manic ($N = 11$), depressed ($N = 59$) or mixed ($N = 17$) and undefined for 1 subject who was not rated with the MADRS and the YMRS. Depressive state was defined by a MADRS score ≥ 10, manic state by YMRS > 7, mixed state by MADRS score ≥ 10 and YMRS > 7. We used the cut-offs first proposed by Chengappa *et al.* (2003) and Hawley *et al.* (2002), and later suggested by Berk *et al.* (2008) in their empirical redefinition of psychometric criteria for remission in bipolar disorders to identify patients who were not in remission and showed identifiable symptoms. All patients not meeting these criteria were defined as euthymic.

YMRS scores for manic, depressed, mixed and euthymic patients were 15.8 ± 12.4, 2.2 ± 2.2, 12 ± 4.7 and 1.7 ± 2.5, respectively. For the same patient groups MADRS scores were 5 ± 2.8, 20.3 ± 8.4, 19.6 ± 9 and 3 ± 2.9, respectively. Scores differed significantly among groups (YMRS: $F = 52.7$, df $= 127$, $p < 0.001$; MADRS: $F = 62.8$, df $= 127$, $p < 0.001$). *Post-hoc* pairwise comparisons using the Tamhane test indicate that manic and mixed patients had significantly higher scores on YMRS than euthymic and depressed patients ($p < 0.001$) and that depressed and mixed patients had significantly higher scores on MADRS than manic and euthymic patients.

FAST administration was straightforward and took on average 8 min. The time frame of administration was one week. 98% of patients answered all items. For the seven patients who did not answer one item, the total FAST score was calculated by replacing the missing item with the mean.

Construct validity

An exploratory PCA was carried out on the patient group with oblique (promax) rotation. The oblique rotation proved to be more suitable than orthogonal rotation because factors were assumed to be correlated.

Five factors were extracted accounting overall for 73.7% of the variance of the items. The first factor identified was 'work functioning' that included five items, followed by 'interpersonal relationships' (seven items), 'cognitive functioning' (six items), 'autonomy' (four items) and 'finances' (two items). All item loadings were greater than 0.40 and no item had a cross-loading, as shown in Table 2.

The five factors extracted, except for 'finances', exhibited a fair to moderate correlation with each other, as shown in Table 3. Cronbach's alpha for the five components was 0.96, 0.88, 0.88, 0.91, 0.92, respectively, and for the total was 0.93.

Table 1. *Characteristics of patients and control groups. Data are presented as mean (S.D.) or as frequency (%) or as median (interquartile range, IQR)*

	Patients ($n = 132$)	Control group ($n = 132$)	T-test or χ^2 test	p
Age (years), mean (S.D.)	47.7 (12.8)	41.2 (14.4)	3.79	<0.001
Gender, N (%)				
F	80 (62.1)	82 (60.6)	0.06	0.800
M	52 (37.9)	50 (39.4)		
Marital status, N (%)				
Single	40 (30.5)	49 (37.1)	26.64	<0.001
Married/living with partner	59 (45.0)	79 (59.8)		
Separated/divorced	27 (20.6)	2 (1.5)		
Widowed	5 (3.8)	2 (1.5)		
Working status, N (%)				
Employed	55 (42.0)	94 (71.2)	40.96	<0.001
Unemployed	36 (27.5)	10 (7.6)		
Retired	28 (21.4)	8 (6.1)		
Student	6 (4.6)	16 (12.1)		
Homemaker	6 (4.6)	4 (3.0)		
Educational level (years), mean (S.D.)	12.7 (4.0)	17.5 (5.2)	8.12	<0.001
Diagnosis, N (%)				
Bipolar disorder I	87 (65.9)			
Bipolar disorder II	32 (24.2)			
Bipolar disorder NAS	13 (9.8)			
Number of episodes, median [IQR]				
Depressive episodes	5.0 [2.0–10.0]			
Hypomanic episodes	0.0 [0.0–10.0]			
Manic episodes	2.0 [1.0–5.2]			
Mixed episodes	2.0 [0.–5.0]			
Duration of illness (years), median [IQR]	16.5 [8.7–30.0]			
MADRS, mean (S.D.)	13.2 (10.6)			
YMRS, mean (S.D.)	4.5 (6.4)			

Discriminant validity

Means and standard deviations of the total FAST and of the factors scores for patients and controls are provided in Table 4. The optimal cut-off on FAST total score discriminating patients from controls was 15, with a sensitivity of 0.79 and a specificity of 0.80. The ROC area was 0.88 (95% CI 0.84–0.92), denoting a good discriminant validity of the scale, as shown in Fig. 1.

The total FAST and factor scores were significantly higher in patients than in controls after controlling for the effect of age, gender, education (years), marital status (married/single) and working status (employed/ other) in linear regression models (Table 4).

We then compared the FAST total and factor scores among bipolar disorder phases.

Four factors and the FAST total score proved to discriminate euthymic patients from symptomatic patients in multiple linear regression models, after controlling for demographic characteristics, as shown in Table 4.

In particular, compared with euthymic patients, impairment in 'interpersonal relationships' was significantly higher in patients with depression, mania or in a mixed state. 'Cognitive functioning' and overall functioning (total FAST) were significantly poorer in depressed and mixed patients, and 'autonomy' and 'work functioning' were significantly impaired only in depressed patients. No significant differences were found on factors and FAST total scores among patients with depressive, manic and mixed states. Then, given the variability in the cut-off scores on YMRS for mania and on MADRS for depression in the literature, we replicated linear regression analyses with FAST total score as the dependent variable using a more conservative criterion for euthymia based on a score of 0–1 on Clinical Global Impression-depression and Clinical Global Impression-mania. 'Depression' was defined by a score >1 on Clinical Global Impression-depression, 'mania' by a score >1 on Clinical Global Impression-mania and 'mixed state' by a score >1 on both scales. Using this categorization, 33 patients were euthymic, 33 depressed, 15 manic and 50 mixed. After adjusting for demographic characteristics, estimated mean (S.E.) were 18.9 (2.7) for euthymia, 35.2 (2.9) for depression, 25.4 (4.0) for mania and 34.7 (2.1) for mixed states. Pairwise significant

Table 2. *Results of PCA with oblique rotation*

| FAST items | Component | | | | |
	Work functioning	Interpersonal relationship	Cognitive functioning	Autonomy	Finances
FAST.5	0.963				
FAST.9	0.958				
FAST.8	0.940				
FAST.6	0.916				
FAST.7	0.859				
FAST.17		0.896			
FAST.22		0.853			
FAST.18		0.829			
FAST.21		0.762			
FAST.19		0.571			
FAST.24		0.531			
FAST.20		0.506			
FAST.14			0.911		
FAST.13			0.860		
FAST.11			0.813		
FAST.10			0.735		
FAST.12			0.686		
FAST.23			0.429		
FAST.1				0.964	
FAST.3				0.931	
FAST.4				0.805	
FAST.2				0.660	
FAST.16					0.941
FAST.15					0.908

Extraction method: principal component analysis.
Rotation method: promax with Kaiser normalization.

differences at $p < 0.05$ were found for euthymia *v.* depression and mixed states, and mania *v.* mixed states and depression.

Inter-rater reliability

The ICC for the total FAST score was 0.983 (95% CI 0.963–0.995).

Conclusions

The FAST Italian version confirmed in the present study the user-friendly characteristics and strong psychometric properties of the instrument, already shown by previous studies (Rosa *et al.* 2007). The PCA identified the same five factors found in the validation studies of the Spanish and Portuguese versions (Rosa *et al.* 2007; Cacilhas *et al.* 2009), but incorporated the two items of original 'leisure time' factor into the 'interpersonal relationships' and 'cognitive function' factors. Factor loading components were to a large extent consistent with the *a priori* structure of the instrument. Internal consistency was excellent for the five components and the whole scale. The ability of FAST in discriminating between patients and controls, and between patients in different mood states was

Table 3. *Factor correlation matrix*

Component	Work functioning	Interpersonal relationships	Cognitive functioning	Autonomy
Interpersonal relationships	0.426			
Cognitive functioning	0.227	0.479		
Autonomy	0.359	0.623	0.540	
Finances	−0.052	0.024	0.274	0.050

Table 4. *Total FAST and factor scores by diagnostic status and bipolar disorder phase. Results are presented as unadjusted means (s.d.) and adjusted means (s.e.m.)*

	N	Work functioning[$] Mean (s.d.)	Work functioning[$] Adjusted mean (s.e.m.)	Interpersonal functioning[°] Mean (s.d.)	Interpersonal functioning[°] Adjusted mean (s.e.m.)	Cognitive functioning[^] Mean (s.d.)	Cognitive functioning[^] Adjusted mean (s.e.m.)	Autonomy[#] Mean (s.d.)	Autonomy[#] Adjusted mean (s.e.m.)	Finances Mean (s.d.)	Finances Adjusted mean (s.e.m.)	Total FAST[§] Mean (s.d.)	Total FAST[§] Adjusted mean (s.e.m.)
Controls	132	1.96 (2.95)	2.65 (0.47)	2.19 (3.74)	2.52 (0.53)	2.22 (3.09)	0.98 (2.11)	0.98 (2.11)	1.48 (0.35)	0.53 (1.14)	0.67 (0.17)	7.9 (11.44)	10.14 (1.47)
Patients*	132	7.27 (6.13)	7.54 (0.44)	9.52 (6.02)	9.68 (0.49)	7.57 (5.26)	7.27 (0.40)	4.3 (4.2)	4.07 (0.32)	1.2 (1.81)	1.23 (0.16)	29.92 (17.22)	29.86 (1.37)
Euthymic	44	4.77 (6.19)	5.42 (0.90)	4.39 (3.65)	4.79 (0.83)	3.79 (4.53)	3.95 (0.72)	1.64 (2.90)	5.42 (1.96)	1.00 (1.68)	1.13 (0.32)	15.59 (12.33)	17.26 (2.24)
Depressed	59	8.75 (5.64)	7.86 (0.76)	12.81 (4.97)	12.94 (0.7)	9.81 (4.25)	9.50 (0.61)	6.20 (4.28)	13.20 (1.65)	1.13 (1.72)	1.04 (0.27)	38.84 (13.51)	37.43 (1.90)
Mixed	17	8.88 (5.87)	7.16 (1.37)	11.06 (5.79)	10.49 (1.27)	9.29 (5.01)	8.25 (1.11)	4.59 (4.32)	16.70 (2.30)	1.59 (2.37)	1.50 (0.48)	35.41 (16.60)	31.30 (3.44)
Manic	11	7.09 (6.44)	8.10 (1.74)	10.00 (6.03)	10.01 (1.60)	7.91 (5.58)	7.38 (1.41)	4.27 (2.37)	5.31 (3.80)	1.45 (1.86)	1.55 (0.61)	30.73 (17.43)	31.32 (4.36)

One patient has missing phase. Linear regression models by bipolar disorder phase were carried out on the subset of participants with complete demographic data (118 patients, 125 controls).

*All differences between patients and controls were significant at $p < 0.001$.

[$]Significant differences: euthymic *v.* depressed, $p = 0.037$.

[#]Significant differences: euthymic *v.* depressed, $p < 0.001$.

[§]Significant differences: euthymic *v.* depressed, $p < 0.001$; euthymic *v.* mixed, $p = 0.003$.

[°]Significant differences: euthymic *v.* depressed, $p < 0.001$; euthymic *v.* mixed, $p < 0.001$; euthymic *v.* manic, $p = 0.005$.

[^]Significant differences: euthymic *v.* depressed, $p < 0.001$; euthymic *v.* mixed, $p = 0.002$; euthymic *v.* manic, $p = 0.033$.
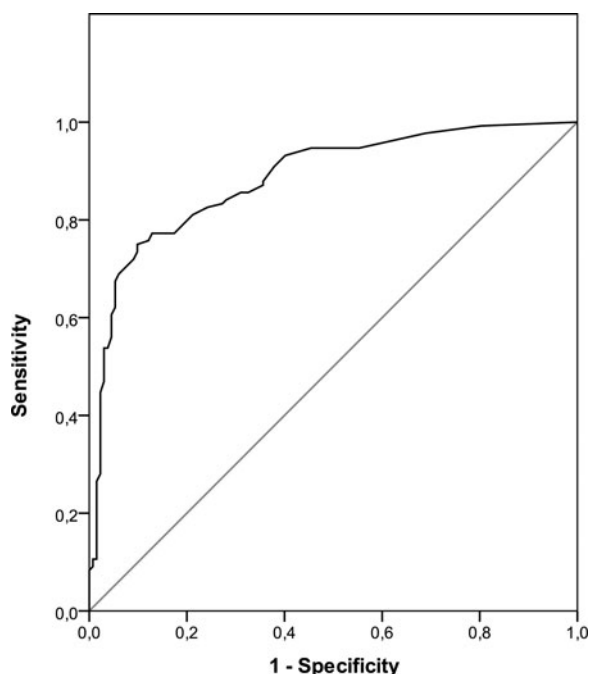
Fig. 1. ROC curve depicting the relationship between sensitivity and one minus specificity (false-positive rate) at each cut-off of total FAST score.

confirmed. The score of euthymic patients was significantly higher than controls, thus showing once more that people with bipolar disorders can be functionally impaired, even when they are in symptomatic remission. It is worth noting that the mean score of euthymic patients in our sample and in the Spanish and Portuguese samples was similar (15.6 ± 12.3 *v.* 18.6 ± 13.2 *v.* 16).

The higher score of our patient group with respect to the original Spanish study (29.9 ± 17.2 *v.* 25.4 ± 16.3) was due to the higher proportion of euthymic patients in the latter (70% *v.* 33%). This is also reflected in the slightly higher cut-off discriminating patients from controls in our study (15 *v.* 11).

The study has some weaknesses. First, no additional scale to assess the concurrent validity of FAST was administered. However, concurrent validity with Global Assessment of Functioning was previously demonstrated by Rosa *et al.* (2007) for the original Spanish version. Second, we found that the ability of the instrument to discriminate between bipolar disorder phases partly depended on the criteria used. This could be considered as a limitation of the instrument. However, the functional assessment cuts across diagnostic categories. Functioning assessment tools are not clinical diagnostic tools and are not necessarily aimed at discriminating between diagnostic groups. Our capacity to identify significant differences was

also limited by the small sample size of patients with mania symptoms or the combination of manic and depressive symptoms.

In conclusion, the psychometric validity and reliability of FAST in the Italian population will provide the Italian clinicians and researchers with a suitable instrument to assess functional impairment in bipolar disorder, useful not only in everyday practice, but also in clinical trials, cross-cultural research and multicentre studies.

Declaration of Interests

Supplementary material

The supplementary material referred to in this article can be found online at http://journals.cambridge.org/eps

References

Berk M, Ng F, Wang WV, Calabrese JR, Mitchell PB, Malhi GS, Tohen M (2008). The empirical redefinition of the psychometric criteria for remission in bipolar disorder. *Journal of Affective Disorders* **106**, 153–158.

Cacilhas AA, Vieira Da Silva Magalhães P, Cereser KM, Walz JC, Weyne F, Rosa AR, Vieta E, Kapczinski F (2009). Validity of a short functioning test (FAST) in Brazilian outpatients with bipolar disorder. *Value in Health* **12**, 624–627.

Chengappa KN, Baker RW, Shao L, Yatham LN, Tohen M, Gershon S, Kupfer DJ (2003). Rates of response, euthymia and remission in two placebo-controlled olanzapine trials for bipolar mania. *Bipolar Disorders* **5**, 1–5.

Hawley CJ, Gale TM, Sivakumaran T (2002). Defining remission by cut off score on the MADRS: selecting the optimal value. *Journal of Affective Disorders* **72**, 177–184.

Huxley N, Baldessarini RJ (2007). Disability and its treatment in bipolar disorder patients. *Bipolar Disorders* **9**, 183–196.

Jolliffe IT (1986). *Principal Component Analysis*. Springer-Verlag: New York.

MacQueen GM, Young LT, Joffe RT (2001). A review of psychosocial outcome in patients with bipolar disorder. *Acta Psychiatrica Scandinavica* **103**, 163–170.

Montgomery SA, Asberg M (1979). A new depression scale designed to be sensitive to change. *British Journal of Psychiatry* **134**, 382–389.

Rosa AR, Gonzalez-Ortega I, Gonzalez-Pinto A, Echeburua E, Comes M, Martinez-Aran A, Ugarte A, Fernandez M,

Vieta E (2012). One-year psychosocial functioning in patients in the early vs. late stage of bipolar disorder. *Acta Psychiatrica Scandinavica* **125**, 335–341.

Rosa AR, Sanchez-Moreno J, Martinez-Aran A, Salamero M, Torrent C, Reinares M, Comes M, Colom F, Van Riel W, Ayuso-Mateos JL, Kapczinski F, Vieta E (2007). Validity and reliability of the Functioning Assessment Short Test (FAST) in bipolar disorder. *Clinical Practice and Epidemiology in Mental Health* **3**, 5.

Rosa AR, Sanchez-Moreno J, Martinez-Aran A, van Riel WG, Bonnin Roig C, Ayuso-Mateos JL, Ferrier N, Kapczinski F, Vieta E (2008). *Prueba Breve de Evaluación del Funcionamiento*. Cibersam: Barcelona.

Rosen A, Hadzi-Pavlovic D, Parker G (1989). The life skills profile: a measure assessing function and disability in schizophrenia. *Schizophrenia Bulletin* **15**, 325–337.

Ruggeri M, Tansella M (2012). People centred mental health care. The interplay between the individual perspective and the broader health care context. *Epidemiology and Psychiatric Sciences* **21**, 125–129.

Sanchez-Moreno J, Martinez-Aran A, Tabares-Seisdedos R, Torrent C, Vieta E, Ayuso-Mateos JL (2009). Functioning and disability in bipolar disorder: an extensive review. *Psychotherapy and Psychosomatics* **78**, 285–297.

Schooler NR, Hogarty GE, Weissman MM (1979). Social adjustment scale II (SAS II). In *Resource Materials for Community Mental Health Evaluators* (ed. WA Hargreaves, CC Attkisson, JE Sorenson) publication no. (ADM) 79–328. Department of Health, Education and Welfare: Washington, USA.

Smith DJ, Griffith E, Poole R, di Florio A, Barnes E, Kelly MJ, Craddock N, Hood Simpson S. (2011). Beating Bipolar: exploratory trial of a novel internet-based psychoeducational treatment for bipolar disorder. *Bipolar Disorders* **13**, 571–557.

Swaine-Verdier A, Doward LC, Hagell P, Thorsen H, McKenna SP (2004). Adapting quality of life instruments. *Value in Health* **7**, Suppl 1, S27–S30.

Ware JE Jr, Sherbourne CD (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care* **30**, 473–483.

Young RC, Biggs JT, Ziegler VE, Meyer DA (1978). A rating scale for mania: reliability, validity and sensitivity. *British Journal of Psychiatry* **133**, 429–435.