



Psychometric testing of the Mandarin Chinese version of the Fatigue Severity Scale in Patients with Major Depressive Disorder

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Background

■ Fatigue is a common health problem in the general population. It occurs in more than 15% of the general population and has a negative impact on these individuals’ level of functioning and quality of life. For patients with major depressive disorder (MDD) in particular, fatigue is one of the most commonly reported symptoms.

Aim

■ The aim of the present study was to examine the psychometric properties of the Mandarin Chinese version of the Fatigue Severity Scale (CFSS) in MDD patients.

Methods

- A total of 179 participants (101 MDD patients and 94 healthy controls) were included. The MDD patients were recruited from an outpatient department of psychiatry and currently under antidepressant treatment. The psychiatric diagnosis was confirmed by a psychiatrist based on the diagnostic criteria for major depression stipulated in the DSM-IV.
- The correlations with a visual analogue scale for fatigue (VASF) and the vital subscale of the Short Form-36 Health Survey (SF36-vit) were used to assess the concurrent validity of the CFSS. To measure the discriminate validity of CFSS, we examined the differences in CFSS scores between MDD patients and non-depressive subjects. The level of agreement between CFSS and VASF was assessed using Bland-Altman analysis.

Results

■ The Cronbach's alpha was 0.93 in the MDD patients. The coefficients of item-item correlation ranged from 0.29 to 0.84 (all $p<0.05$) and item-global correlation ranged from 0.57 to 0.92 (all $p<0.001$) (Table 1)

Table 1 Item-to-item correlations and item-to-total correlations for the CFSS in the major depressive disorder patients (n=101)

item	2	3	4	5	6	7	8	9	Total item
1	0.39**	0.67**	0.59**	0.63**	0.67**	0.60**	0.61**	0.60**	0.76**
2		0.55**	0.43**	0.42**	0.38**	0.36**	0.29*	0.44**	0.57**
3			0.83**	0.82**	0.71**	0.69**	0.63**	0.76**	0.89**
4				0.83**	0.80**	0.71**	0.66**	0.83**	0.89**
5					0.82**	0.73**	0.71**	0.84**	0.90**
6						0.79**	0.74**	0.83**	0.90**
7							0.77**	0.79**	0.86**
8								0.78**	0.83**
9									0.92**

*: $P<0.05$

** : $P<0.001$

Results

- The significant correlation between the CFSS and VAS in the MDD group was observed ($r=0.68$, $p<0.001$). Regarding to the divergent validity, the CFSS negatively correlated with the SF-36_vit in the MDD group ($r=-0.44$, $p<0.001$) (Table 2).
- The average CFSS score of the MDD patients was significantly higher than those of the non-depressive subjects (Table 3).
- The points on the Bland-Altman plot were randomly scattered between the limits of agreement. No specific pattern of differences was observed between the CFSS and VASF, indicating good agreement between the two methods of measurement in the MDD patients (Figure 1).

Conclusions

- The 9-item scale presented satisfactory internal consistency, concurrent and discriminate validity. The agreement between fatigue severity assessed by CFSS and VASF was acceptable. This preliminary validation study of the CFSS proved that it is a valid and reliable Mandarin-language instrument for measuring fatigue severity in MDD patients.

Table 2 Correlations between CFSS and other scales (n=101)

Scale	r
Visual analogue scale	0.68**
The Medical Outcome Studies 36-Item Short Form vital subscale	- 0.44**

** : $P<0.001$

Table 3 Distribution of parameters of bio-demographic characteristics and CFSS scores of participants according to group

	MDD patients (n=101)	Non-depressive subjects (n=94)	P ^a
Age (years), mean ± SD	44.0(11.3)	39.0(9.9)	<0.001
Gender, n (%)			0.06
Male	24 (23.8)	34(36.2)	
Female	77(76.2)	60(63.8)	
Exercise habits, n (%)			0.35
>2 hours	16(15.8)	20(21.3)	
none	85(84.2)	74(78.7)	
CFSS			
Mean scores	5.13 (1.50)	4.27(1.12)	<0.001

CFSS= Chinese version of Fatigue Severity Scale

MDD= Major depressive disorder

^a Tested by the Chi-square test and the independent t test.

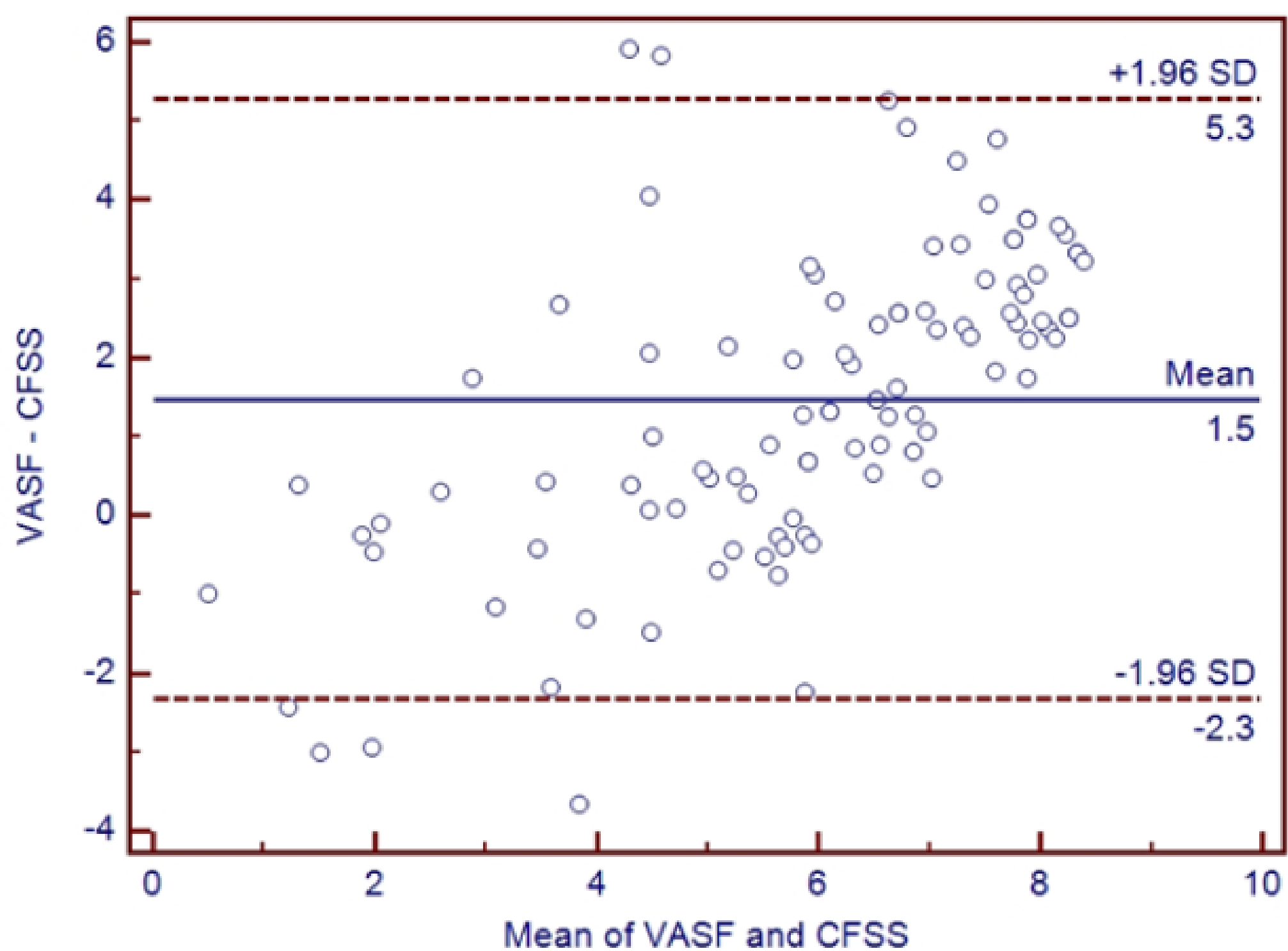


Figure 1. Bland–Altman plots of agreement between Visual analogue scale for fatigue (VASF) and the mean scores of CFSS in MDD patients (n=101)