Paper 4

PERSONALITY DISORDERS AND PERSONALITY PROFILES IN CHRONIC FATIGUE SYNDROME

Personality disorders and personality profiles in chronic fatigue syndrome

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Objective

To study the prevalence of personality disorders and patterns of personality factors in patients with Chronic Fatigue Syndrome (CFS).

Methods

Patients with CFS (n=62) were interviewed using SCID-II and fulfilled questionnaires of Personality Assessment Inventory (PAI) prior to a treatment intervention program. Patients were examined at 5 years follow-up after treatment, recording fatigue symptoms and improvement after 5 years by self-reported Fatigue Scale.

Results

The prevalence of personality disorder was low (13 %), equal to non-clinical populations. The mean personality score by PAI was 51 (norm T=50), indicating low average personality dysfunctions. The CFS patients had a clinical profile most similar to that of somatoform disorder (Coefficient of Fit = .667). There were elevated scores of somatisation and health concerns and on subscales of vegetative signs of depression, and low scores of self-esteem and perfectionism. Low improvement by 5 years follow up was associated with low levels of perfectionism and high levels of vegetative signs of depression.

Conclusion

Patients with CFS seem to have personality disorders and personality pathology level equal to the average population. CFS patients had a tendency to higher levels of somatisation and somatic complaints, more vegetative signs of depression, lower self-esteem and low level of perfectionism. This could be secondary to the CFS illness, possible explained by physiological and cognitive sensitisation processes.

INTRODUCTION:

Chronic fatigue syndrome (CFS) is an illness characterized by excessive fatigue disproportionately related to effort, with incapacitating and sometimes debilitating impairment of physical and mental functioning. There is no established cause, the consensus appears to be to regard it as a multifactorial, complex, and biopsychosocial condition (1-5). There are several slightly different case definitions for CFS. The most recognized case definition, Centre for Disease Control, US, (CFS-CDC) (6) emphasizes sudden onset, dramatic functional impairment and occurrence of specified somatic symptoms, while the Oxford (English) definition (CFS-Oxford)(7) requires mental affection as part of the symptom complex. In an earlier study, we found that patients with CFS-CDC had a significantly poorer prognosis than patients with CFS-Oxford (8).

In this study, we wanted to examine personality factors and occurrence of personality disorders in a patient population with CFS. Previous work has reported a high prevalence of depressive and anxiety states in patients with CFS both present states and in the past. (9-13). Associations between personality factors and fatigue states have been described, particularly associations to neuroticism (14) and negative aspects of perfectionism (15). The combination of higher levels of perfectionism, doubts about actions, concern over mistakes, and lower self-esteem, has been suggested to be important for the development and perpetuation of chronic fatigue (16). Other pre-morbid personality characteristics have also been described: conscientiousness, perfectionism and social control, creating a coping style making the person vulnerable to exhaustion in situations of inadequate competency and emotional control (17). For illnesses assumed to be related to CFS, like unspecific and general pain states and fibromyalgia, tendency to catastrophizing and exaggerated somatic focus have been shown to be of importance (18, 19). Catastrophic beliefs have further been shown to influence the level of functioning in CFS (20).The model of sensitization and increased subjective health complaints by sustained activation and perseverative cognitions (21, 22) could provide a link between such cognitive beliefs, personality factors and coping (23). It also expands the model of somatosensory amplification of bodily sensations (24) found both in medical explainable and unexplainable symptoms.

Systematic studies of personality disorders in CFS patients, using criteria from DSM-IV (25), have shown that up to 40% of the patients have a personality disorder (26), particularly of cluster C/ obsessive-compulsive disorder (OCD). Criteria for this disorder in DSM-IV (25)

(corresponding diagnosis in ICD-10 (27) : obsessive-compulsive personality disorder) include perfectionism, rigidity, excessive caution and conscientiousness, excessive devotion to work and attention to details.

It remains unclear whether these personality factors are premorbid risk factors for developing the fatigue condition and for the perpetuation of the illness, or whether they are due to the prolonged illness (28, 29). It is also unclear whether the associations between personality and fatigue states may in part be confounded by depression, and whether the depression itself is premorbid or secondary to the illness. Comparisons between personality factors in CFS and in another chronic and disabling illness like Rheumatic Arthritis (RA) do not present any evidence of specific personality differences in the CFS sufferers (30). Finally, it remains unclear how to interpret data of personality scores: do the cut off points used represent values that are clinically relevant?

In the present study we examined personality disorders in a clinical population with CFS, using a structured psychiatric evaluation by SCID-II interview (31). For a systematic evaluation of personality characteristics, with particular emphasis on personality patterns found earlier, the Personality Assessment Inventory (32) was used.
This particular patient population has been followed over a 5-years period, which also offers the possibility to examine possible correlations between personality factors and improvement in fatigue symptoms over 5 years (8).

Material

62 patients fulfilling case definitions for chronic fatigue syndrome, either by British/ Oxford criteria (7) or CFS-CDC case definition (6) were included in the study. When adjusting for only exclusive non-overlapping subgroups, the study population was grouped into exclusive categories of CFS-CDC (n=28) and CFS-Oxford non-CDC (n=34).
The participants were part of a randomised clinical trial in chronic fatigue syndrome and neurasthenia (33), referred to a specialist psychosomatic clinic at the West coast of Norway. The group was characterized by high female ratio, middle age, long illness duration, severe physical impairment, and mild to moderate depressive scores (table 1).
All (62) patients were examined for personality disorders by SCID-II; 53 patients completed questionnaires for personality factors (PAI) and 5-years follow-up questionnaires and interviews for clinical assessment.

Insert table 1 about here

Method:

Patients went through structured interviews and completed questionnaires before entering the clinical trial and after 5 years follow-up. The assessments at baseline were done by SCAN (34) structured interview schedules, check-lists of CFS-case definitions, structured clinical interviews of SCID-II (31) examining personality disorders (DSM-IV) (25), in addition to questionnaires of personality factors (PAI) (32). SCID-II assessments were reviewed by the SCID- interviewer and an experienced psychiatrist (BS), at the end of the clinical trial (24 weeks). Improvement in fatigue symptoms was assessed by self-reports at 5 years follow-up examination, and improvement was categorized into three subgroups: more than 6 points reduction in Fatigue scale; 1-6 points' reduction in Fatigue scale; 0 or increased score in Fatigue scale.

Instruments:

Personality Assessment Inventory (PAI)(35-37).

A Norwegian version of PAI that has been translated to Norwegian (back translation to English approved by Leslie C. Morey and Psychological Assessment Resources (PAR)) and that has been used in studies of cognitive schemas in psychiatric outpatients (38), was used in this study.

The Personality Assessment Inventory (PAI) is a multiscale inventory that is widely used in clinical settings (37, 39). It is an objective inventory of adult personality that assesses psychopathological syndromes (35, 36). It consists of 22 scales measured by 344 items. The 22 scales are organized into four categories that include validity scales, clinical scales, treatment scales and interpersonal scales

Reliability and validity are based on data from a U.S. census-matched normative sample of 1,000 community-dwelling adults (matched on the basis of gender, race, and age), a sample of 1,265 patients from 69 clinical sites, and a college sample of 1,051 students. Its validity has been tested and compared to MMPI-2, showing good validity and producing few invalid profiles (40). The PAI scoring software (41) provides an empirical comparison of the respondent's profile with various mean profiles from different diagnostic groups, through a measure of configural similarity (i.e. Coefficients of Fit; between - 1.00 to + 1.00).

T-score values equal to 50 represent mean scores in the standardization sample; 1 standard deviation (SD) equals 10 T-scores. T-scores below or above 1.0 SD is considered clinically significant.

In assessing specific personality factors relevant to research questions the following PAI-scales and subscales were used (37):
Exaggerated somatic focus: Scale for somatic complaints (PAI-SOM), (subscales conversion SOM-C, somatisation SOM-S, health worries SOM-H);
Doubts about actions, concern over mistakes: anxiety scale, cognitive subscale (ANX-C);
Tendency to catastrophizing: anxiety scale, affective (ANX-A) and physiological subscale (ANX-P); Perfectionism: anxiety-related disorder scale, obsessive-compulsive subscale (ARD-O); Low self-esteem: mania scale, grandiosity subscale (MAN-G);
Inadequate social control: dominance interpersonal scale (DOM);
Inadequate competency: depression scale, cognitive subscale (DEP-C).

SCAN (34)
SCAN (Schedules for Clinical Assessment in Neuropsychiatry) is a structured clinical interview for ICD-10 diagnosis (27).

SCID-II (31)
SCID-II is a structured clinical interview for DSM-IV axis-II diagnosis. The instrument has been found to have good validity and test-retest reliability (42, 43). The interviewers were trained for SCID interviews.

Fatigue scale (44)
Fatigue Scale is a self-rating scale developed to measure the severity of fatigue. The scale consists of 11-items, being rated 0-3 in severity. The scale has been found to be reliable and valid in chronic fatigue syndrome, showing a high degree of internal consistency.(45).

SF-36 = Short Form 36 items Life quality:
Health related quality of life was measured by the generic health status measure SF-36 for health situations during the last 4 weeks (46) . SF-36 is a generic QoL scale consisting of 36 items describing eight dimensions (47), aggregated to one physical and one mental health

component (48). Adjusted SF-36 scores were calculated. The mean is 50, and a deviation of ten points from the mean represents one standard deviation.

Statistical methods

Analyses were done with a mixed model for normally distributed continuous data for the outcome measures; using SPSS (SPSS inc. Chicago, USA) version 14.0 for MS-Windows. To account for correlation between the different measures for the individuals, a variance component model was used. Other variables were entered as fixed effects. Descriptive statistics and other analyses were also done using SPSS.

Ethics

The study was approved by the Regional Ethic Committee and the Norwegian Data Inspectorate. The trial was registered with the Norwegian Social Science Data Services (NSD) prior to any patient inclusion. All participants had received written information about the trial and had given formal consent about participation, including new formal consent about the follow-up study.

Results

8 (13 %) of the CFS patients were assessed by SCID-II to have personality disorders (DSM-IV).

Analysis of the PAI questionnaire showed that the CFS patients had a profile of personality factors most similar to the profile for patients with undifferentiated somatoform disorder (fig 1), with a Coefficient of Fit between CFS group and somatoform disorder group 0.667 (41). However, the clinical scale scores in CFS group were generally lower than scores in undifferentiated somatoform disorder.

Insert fig 1 about here

Mean total PAI- T-scores (clinical scales) was 51, which was similar to the normative reference population (T=50). However, there were statistically and clinically significant differences on specific personality scales in the CFS patients, compared to the normative

reference population (40) (table 2). CFS patients had generally higher scores on somatic complaints (1.9 SD, $p<0.0001$), reflecting exaggerated somatic focus. The CFS patients had clinically and significantly higher scores on somatisation compared to the normative reference population (> 2 SD, $p<0.0001$).

Insert table 2 about here

The CFS patients reported high scores (mean T=63) on the physiological depression subscale, reflecting vegetative signs of depression. The subscale of cognitive depressive factors, reflecting perceived lack of adequacy and competency, was within normal range (see table 2). There were low scores on the subscales representing perfectionism in the patient group (T=40), indicating low levels of perfectionism and obsessive-compulsive factors.
The CFS patients reported low scores on the subscale of grandiosity (T=39), indicating low self-esteem. They also reported low scores on the subscale of dominance (T=41), indicating self-consciousness in social interactions and low skills on self-assertion.

There was no clinically significant tendency to catastrophizing, exaggerated doubts about actions or concern over mistakes in the patient group.

When splitting the CFS patients into two subgroups, based on the CFS-Oxford and the CFS-CDC case definitions, there were no statistically significant differences on PAI-scores between the subgroups except for perceived life stress, where patients with CFS-CDC reported significantly higher levels of current or recent stressors (diff T-score 7.0; 95 % CI 2.0 -11.9; p=0.006).

When analyzing the CFS-subgroups categorized by different levels of improvement in fatigue symptoms during 5 years follow-up, there were statistically significant differences on the PAI subscale of physiological depression and obsessive-compulsive elements (perfectionism) between the group of patients most improved and patients showing no improvement. Improvement was significantly associated with lower level of physiological depression score (difference in PAI T-score, DEP-P= -10.3; 95% CI -17.8 – 2.7; p= 0.0075); impairment was significantly associated with lower level of perfectionism (Difference PAI T-score, ARD-O= 9.8; 95% CI 2.3 -17.4; p=0.010).

Discussion:

We did not find that our CFS patients had anywhere near as high a prevalence of personality disorder as that reported by Henderson and Tannock (26). In fact, our prevalence data do not appear to be higher for the CFS group than what is reported from the general population (49, 50). We find these data to be of good quality, in that the personality assessment (SCID-II) were done by two trained interviewers, reviewed in light of clinical impressions from 12 group sessions and 12 individual consultations over 6 months, and conclusion of assessment reached by consensus between interviewers.

The low prevalence of personality disorders corresponds to the low level of psychiatric disorders found at the psychiatric evaluations (51) and structured interviews by SCAN (33), indicating that CFS patient in general have low levels of psychopathology and thus supporting the view of CFS as a non-psychiatric illness. The *rate* of depression is high with the cutoff for depression suggested for patients with CFS (HAMD>14) (52). The *level* of depression, on the other hand, is moderate, the scores represent mild depression. This finding is compatible with the position that the depression might be secondary to the fatigue illness (8) rather than representing a depressive illness of its own.

Further inspection of the PAI depressive scores revealed that the cognitive and affective scales were within normal clinical range. It is the physiological depression scores that were especially elevated. These scores reflect vegetative signs of depression (sleep problems, lack of energy or drive). These complaints are part and parcel of the fatigue condition itself, but are also compatible with psychophysiological imbalances related to the immunological dysfunction as reported in several previous studies (53).

The normal levels of cognitive depression factors combined with elevated physiological factors and high levels of somatisation in CFS patients suggest that bodily sensations are exaggerated and cognitive awareness correspondingly low. Alexithymia has been proposed as a possible factor in CFS, although evidence is low (54). The CFS personality “profile” on the PAI-scores is most similar to that of undifferentiated somatoform disorder, but on a clearly lower level of clinical scale intensity. Such correlation between CFS and somatoform disorder is supported by earlier research (55). The question of distinguishing somatoform disorder and CFS has been discussed, especially the “mindless” fatigue sometimes reported (56).

Our data indicate that patients with CFS have a tendency to somatisation, exaggerated somatic focus and more intense somatic complaints than a normal reference population. Whether this could be secondary to having a chronic illness like CFS, as has been questioned (29), remains unanswered. The findings are compatible with the position that somatisation may be a function of a psychobiological "sensitisation" (21, 57), and that CFS may be a chronic stress disorder, characterised by sustained activation 53(58)). Patients with fatigue as well as chronic, unspecific pains have an exaggerated focus on their complaints, with a perseveration of thoughts and worries about their condition (59-61).

Our data did not confirm an association between CFS and any tendency to catastrophizing or exaggerated doubts about actions, as found earlier (18). We did not find any particular high levels of perfectionism or obsessive-compulsive traits as reported by White (16), neither negative perfectionism (doubts about actions) nor positive perfectionism. Quite to the contrary, we found low levels of perfectionism. Combined with low levels of self-esteem and perception of social control, this could indicate a state of helplessness and negative outcome expectancy that is corresponding well with high reports of depressive symptoms (62).

The low prevalence of more serious psychopathology and personality disorders also indicate that these cognitive assumptions may be more state- than trait-dependent, as is often discussed in personality assessments (63). The indication of a stable self-concept cluster reflected by PAI-scores (moderate self-efficacy, low self-esteem, high stability of self-concept) combined with generally low levels of pathological personality factor and cognitive rigidity suggests that the personality factors found in our study are mainly state-dependent, possibly due to the incapacitating illness of CFS. The dysfunctional cognitive assumptions found could thus be subject to change. Modifying these assumptions may improve the coping with CFS, this is a rationale for a supportive and cognitive-oriented approach in the treatment of CFS. Our data also support the view that the psychopathology found in chronic fatigue illness may be secondary to the illness rather than a predictor for the illness.

The lack of difference between CFS-CDC and CFS-Oxford patients in personality profile is interesting, as these subgroups of CFS seem to have significantly different illness course (8). This could indicate that personality factors have less impact on the actual illness presentation and illness course than the characteristic of the illness itself.

The association between low improvement over 5 years and low levels of perfectionism combined with high somatic complaints of energy impairment could be interpreted as a predictor of illness course by the dynamics of perceived helplessness. Helplessness and negative outcome expectancy could create a vicious circle of social withdrawal and perseverations of negative cognitive assumptions, amplifying health worries, subjective complaints, pain and fatigue (21). However, the alternative interpretation that high physiological complaints and low perfectionism – possibly a coping adaptation - could be secondary to the functional impairment from the illness could be just as reasonable.

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Table 1

Descriptive statistics in CFS group (n=62)

	Mean	*Std.dev.*
Male/ female	*8/54*	
Age	*46*	*8.8*
Fatigue Scale	*25,0*	*4.5*
SF-36 physical	*28.9*	*11.3*
SF-36 mental	*39.4*	*13.1*
HAMD-21	*14.3*	*4.0*
Duration of illness (yrs)	*5*	*4.4*

Table 2

PAI-scales: Total CFS group (n=53); CFS-Oxford (n=34) and CFS-CDC (n=28); difference CFS-Oxford and CFS-CDC

	Total CFS group				CFS- Oxford				CFS- CDC				Difference Oxford- CDC			
	Mean	**95 % CI**		**pvalue**	**Mean**	**95 % CI**		**p-value**	**Mean**	**95 % CI**		**p-value**	**Mean diff**	**95 % CI**		**p-value**
PAI-SOM*	70.0	67.5	72.5	0.0000	69.0	*65.6*	*72.4*	0.0000	71.1	*67.5*	*74.7*	0.0000	2.12	*-2.85*	*7.09*	0.4029
SOM-C	63.7	*61.2*	*66.2*	*0.0000*	62.3	*58.9*	*65.7*	0.0000	65.3	*61.7*	*68.9*	0.0000	2.96	*-2.01*	*7.93*	0.2432
SOM-S	73.7	*71.2*	*76.2*	*0.0000*	71.7	*68.3*	*75.1*	0.0000	75.9	*72.3*	*79.5*	0.0000	4.21	*-0.77*	*9.18*	0.0973
SOM-H	65.0	*62.5*	*67.5*	*0.0000*	65.5	*62.0*	*68.9*	0.0000	64.4	*60.8*	*68.1*	0.0000	-1.02	*-6.00*	*3.95*	0.6861
PAI-ANX	56.1	*53.6*	*58.6*	*0.0000*	56.8	*53.4*	*60.2*	0.0001	55.3	*51.7*	*58.9*	0.0042	-1.51	*-6.48*	*3.47*	0.5524
ANX-C*	52.2	*49.7*	*54.7*	0.0786	53.4	*50.0*	*56.8*	0.0515	50.9	*47.3*	*54.5*	0.6175	-2.47	*-7.45*	*2.50*	0.3293
ANX-A*	55.3	*52.9*	*57.8*	*0.0000*	56.7	*53.3*	*60.1*	0.0001	53.8	*50.2*	*57.5*	0.0373	-2.84	*-7.81*	*2.13*	0.2628
ANX-P*	59.7	*57.2*	*62.2*	*0.0000*	58.9	*55.4*	*62.3*	0.0000	60.7	*57.1*	*64.3*	0.0000	1.82	*-3.15*	*6.80*	0.4720
PAI-DEP	61.4	*58.9*	*63.9*	*0.0000*	62.4	*59.0*	*65.8*	0.0000	60.3	*56.7*	*63.9*	0.0000	-2.15	*-7.12*	*2.82*	0.3966
DEP-C*	58.0	*55.5*	*60.5*	*0.0000*	58.0	*54.6*	*61.4*	0.0000	58.0	*54.4*	*61.6*	0.0000	0.00	*-4.97*	*4.97*	1.0000
DEP-A	57.3	*54.8*	*59.8*	*0.0000*	59.3	*55.9*	*62.7*	0.0000	55.1	*51.5*	*58.7*	0.0059	-4.21	*-9.18*	*0.77*	0.0973
DEP-P	63.0	*60.5*	*65.5*	*0.0000*	63.6	*60.2*	*67.0*	0.0000	62.4	*58.8*	*66.0*	0.0000	-1.17	*-6.14*	*3.80*	0.6439
PAI-ARD	45.9	*43.4*	*48.4*	*0.0013*	45.1	*41.7*	*48.5*	0.0050	46.8	*43.2*	*50.5*	0.0865	1.73	*-3.24*	*6.71*	0.4942
ARD-O*	40.2	*37.7*	*42.7*	*0.0000*	39.7	*36.3*	*43.1*	0.0000	40.7	*37.1*	*44.3*	0.0000	1.01	*-3.97*	*5.98*	0.6915
PAI-MAN	41.3	*38.8*	*43.8*	*0.0000*	41.0	*37.5*	*44.4*	0.0000	41.6	*38.0*	*45.3*	0.0000	0.68	*-4.30*	*5.65*	0.7897
MAN-G*	39.3	*36.8*	*41.8*	*0.0000*	38.4	*35.0*	*41.8*	0.0000	40.3	*36.7*	*43.9*	0.0000	1.85	*-3.12*	*6.82*	0.4651
PAI-DOM*	49.5	*47.1*	*52.0*	*0.0000*	40.5	*37.1*	*44.0*	0.0000	41.9	*38.3*	*45.5*	0.0000	1.38	*-3.59*	*6.36*	0.5849
PAI-BOR	49.5	*47.1*	*52.0*	*0.7203*	48.8	*45.4*	*52.2*	0.4854	50.4	*46.8*	*54.0*	0.8281	1.61	*-3.36*	*6.59*	0.5242

** = PAI-scales representing personality factors found in earlier research:*

Exaggerated somatic focus: somatic complaints PAI-SOM (subscales conversion SOM-C, somatisation SOM-S, health worries SOM-H);

Doubts about actions, concern over mistakes: anxiety scale, cognitive subscale (ANX-C);

Tendency to catastrophizing: anxiety scale, affective and physiological subscale (ANX-A, ANX-P);

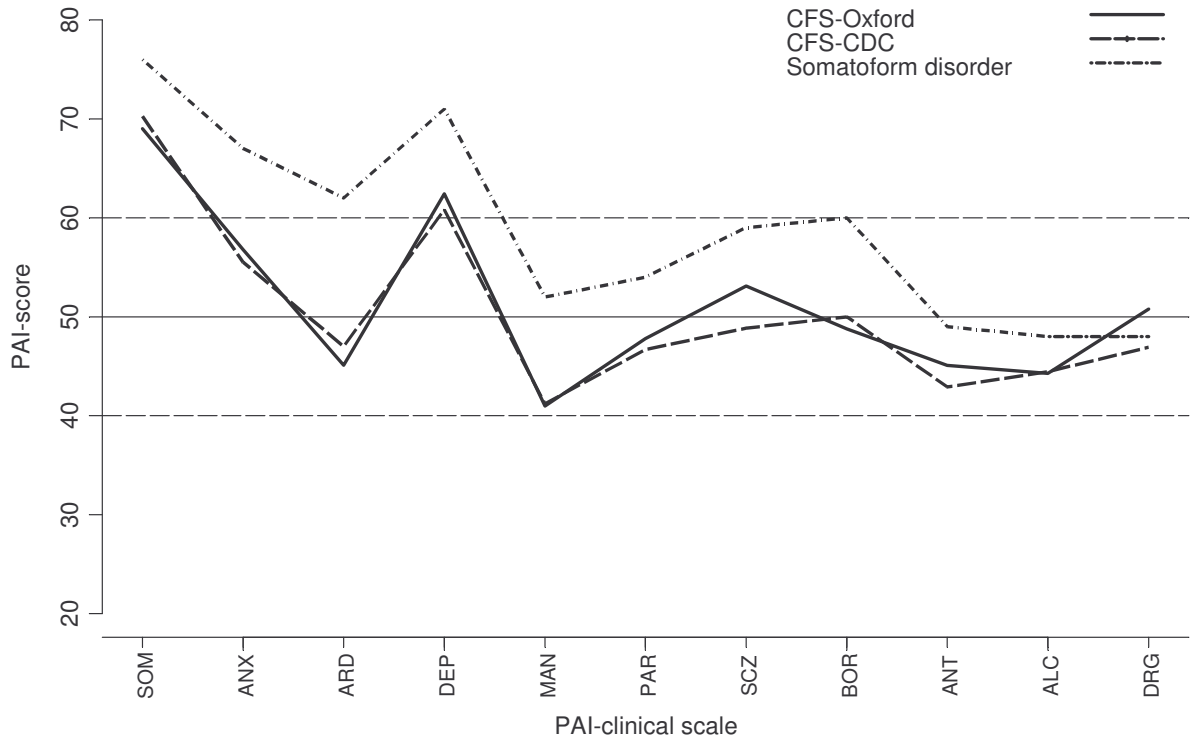
Perfectionism: anxiety-related disorder scale, obsessive-compulsive subscale (ARD-O);

Low self-esteem: mania scale, grandiosity subscale (MAN-G);

Inadequate social control: dominance interpersonal scale (DOM);

Inadequate competency: depression scale, cognitive subscale (DEP-C).

Fig 1



The Coefficient of Fit between CFS group and somatoform disorder group is 0.667.
(The somatoform mean profile is generated by data from 31 patients with the diagnosis somatoform disorder NOS; 61.3% females, mean age 40.4 years (36)).