

Fatigue Syndrome in General Hospital: Psychiatric and Personality Profile Assessment

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ABSTRACT

Introduction: Fatigue is a vague subjective symptom commonly present in every clinic. It is poorly defined. Psychiatric interest in it is progressively increasing.

Aim of the Study: Was to investigate patients with non-organic fatigue in the clinic of Internal medicine.

Subjects and Methods: Included 100 patients with non organic fatigue and control group (n=50) with anemia. Diagnosis was done by mini international neuropsychiatric interview (MINI). Both groups were also tested by Hamilton Rating scale for depression and Hamilton Rating scale for anxiety and Multidimensional Fatigue inventory (MFI) done by SMETS and Middlesex hospital questionnaire (MHQ). Our results were subjected to statistical analysis.

Discussion: Our study revealed significant role of psychiatric disorders especially depression behind fatigue syndrome.

Key words: Fatigue syndrome, depression, personality profile.

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INTRODUCTION

Fatigue can refer to a subjective symptom as malaise and aversion to activity or to objectively impaired performance. It has both physical and mental aspects. The symptom of fatigue is a poorly defined subjective feeling and careful inquiry is needed to clarify complaints of "fatigue" "tiredness" or "exhaustion" and to distinguish lack of energy from loss of motivation or sleepiness, which may be pointers to specific diagnoses¹.

Population-based studies confirm that fatigue is one of the most common somatic symptoms. Twenty to 30% of the population complains of chronic fatigue. Fatigue, headache, stomach ache, chest pain and backache are common. Large international surveys show that about 8% of adults report daily headache, 10% daily backache and 16% daily sleepiness in the mornings. Fatigue is even more common in about third of both male and female having substantial fatigue four or more times a week². Fatigue has been a frequent reason for visits to physicians and the chief complaint in 4 to 9% of all visits to a family practitioner or internist³.

Neurasthenia was quickly incorporated into psychiatric nosology, but as a disease of its own, not as a symptom of various syndromes or diseases. American nosologists, DSM-I, which was published in 1952, named fatigue a "psychophysiologic nervous system reaction," in which general fatigue was said to be the chief complaint. "The term includes many cases formerly called "neurasthenia". This definition was linked to past traditions⁴.

In 1980, American psychiatry turned the page completely on fatigue, returning in the DSM-III to a neo-Kraepelinian style of setting up diseases (now called disorders) rather than focusing on the psychopathology of target symptoms.

As a symptom, fatigue has many causes, ranging from physiological states (sleep deprivation) to medical conditions or psychiatric disorders (depression, anxiety disorders), medications (antihistaminic drugs) and even unhealthy life styles. As a disease, fatigue is often part of group of unexplained illnesses (e.g., Neurasthenia, DeCosta syndrome and chronic fatigue syndrome with little understanding of its causes⁵.

Many theories for the pathophysiology of chronic fatigue in psychiatric diseases have been suggested. Subsequent investigations have documented abnormalities in rather disparate domains, including brain structure and function, neuroendocrine responses; sleep architecture, immune function, virological studies and divergent psychological profiles. Despite the demonstration of abnormalities across these and other domains, such findings remain as largely isolated observations, with the interactions and relationships among them unexplored. In addition, some more recent investigations have focused on understanding the heritability of chronic fatigue. It is possible that chronic fatigue is a heterogeneous symptom with different pathophysiological anomalies. Many investigators have postulated that chronic fatigue is a complex symptom with multifactorial etiology^{6,7}.

Somatizing patients often complain of pain, fatigue, gastrointestinal, sexual and pseudo-neurological symptoms. A number of theories have been proposed to explain the genesis of somatization and two models have attracted attention as leading hypotheses. Adverse childhood experiences contribute to the development of somatizing behavior. Childhood exposure to models of illness behavior, such as a parent with chronic illness, may increase the risk for somatization including fatigue syndrome⁸.

According to the second model, somatizing behavior is a manifestation of maladaptive communication of distress in response to environmental stress.

Due to its multidimensionality, the relationship between fatigue and psychiatric illness has generated significant interest in recent years. A preponderance of research on medical facility samples has established that individuals with fatigue tend to receive higher rates of psychiatric diagnosis than control subjects without fatigue. Other reports demonstrate that psychiatric variables do not play a primary role in the development and course of chronic fatigue^{9,10}.

Somatic symptoms are the leading cause of outpatient medical visits and also the predominant reason why patients with common mental disorders such as depression and anxiety initially present in primary care. At least 33% of somatic symptoms are medically unexplained and these symptoms are chronic or recurrent in 20% to 25% of patients. Unexplained or multiple somatic symptoms are strongly associated with coexisting depressive and anxiety disorders. Other predictors of psychiatric comorbidity include recent stress, lower self-rated health and higher somatic symptom severity, as well as high healthcare utilization, difficult patient encounters as perceived by the physician and chronic medical disorders¹¹.

One fourth of primary care patients complain of fatigue, but only 10 percent have an underlying medical cause. In primary and tertiary care settings fatigue has been associated with psychiatric disorders and unexplained medical symptoms. This study suggests that the same is true in the general population¹².

Anxiety and depression are prevalent in chronic fatigue syndrome. Somatic symptoms like chest pain, dizziness, fatigue, abdominal discomfort and musculoskeletal pains are common in both anxiety and depression. In primary care, patients with anxiety and depression usually present such somatic symptoms, whereas emotional symptoms are less likely to be mentioned if they are not specifically asked about by the interviewer. Physical complaints are seldom attributed to psychological causes and the focus for clinical examination is kept on somatic conditions¹³.

Fatigue syndrome is an illness characterized by profound disabling fatigue and accompanied by numerous rheumatological, infectious and neuropsychiatric symptoms. As the name implies, fatigue syndrome is a symptom-based on clinical diagnosis without distinguishing physical

examination or routine laboratory findings. Infectious, immunological, neuroendocrine, sleep and psychiatric mechanisms have been investigated; however, a unifying etiology for fatigue syndrome has yet to emerge. It seems likely that fatigue syndrome is a heterogeneous disease with different pathophysiological disturbances that manifest with similar symptoms. Regardless of the pathogenesis, persons with fatigue syndrome, like those with other chronic diseases, have a substantially impaired functional status that results in significant personal and economic morbidity^{14,15}.

Among psychiatric disorders, Anxiety disorders are common in the general population, with lifetime rates of 3.5% and 5.1% for panic disorder and generalized anxiety disorder, respectively. Panic disorder and generalized anxiety disorder are also common comorbid conditions among those with fatigue syndrome. Lifetime prevalence rates for panic disorder in fatigue syndrome ranges from 17% to 25% and rates for generalized anxiety disorder from 2% to 30%.

This literature points to an overlap between fatigue syndrome and anxiety. This overlap, along with some neurobiological similarities between chronic fatigue syndrome and generalized anxiety disorder including decreased cerebral blood flow, sympathetic overactivity and sleep abnormalities argues for further investigation of the relationship between fatigue syndrome and anxiety disorders^{16,17}.

Persons with fatigue syndrome have high rates of current and lifetime major depression, which has been taken as evidence that fatigue syndrome, is an atypical manifestation of major depression. On the other hand, the high rates of depression in fatigue syndrome could be a result of overlapping symptoms, an emotional response to disabling fatigue, viral or immune changes, or alterations in brain physiology¹⁸.

AIM OF THE STUDY

Our aim is investigating the psychiatric morbidity and personality profile in patients with non organic fatigue. This will increase the GPs and non psychiatric physicians to reach proper diagnosis and avoid-doing unnecessary investigation.

SUBJECTS AND METHODS

This study is a cross sectional comparative study: Cases were selected randomly from patients attending the general internal.

Medicine Outpatient Clinics of Ain Shams University Hospitals, Cairo, Egypt.

Subjects:

Patient group:

The study included 150 patients presented with fatigue the total sample was divided into two groups, the case group (n.=100) and control group (n.=50).

Selection of cases:

The cases were selected according to the definition of Cella et al.¹⁹. All cases (case group n=100) presented with a subjective state of overwhelming and sustained exhaustion and decreased capacity for physical and mental work that is not relieved by rest for at least one month were selected from internal medicine clinic of Ain Shams University according to the following rules:

A. Inclusion criteria:

- Age range: 18-45.
- Sex: Both males and females.
- Presented with fatigue as a main somatic symptom without known concomitant medical diseases or receiving any medications.

B. Exclusion criteria:

- Patients with fatigue due to organic causes.
- Substance-related disorders.

Selection of Control group:

Fifty patients with fatigue due to chronic non-hemolytic non-malignant anemia (as an example of medical condition) will be selected from the hematology outpatient clinic of Ain Shams University Hospitals. The control group matched the case group as regards sociodemographic characteristics as shown in (Table 1).

Table 1 : Sociodemographic data of both groups.

	Case Group (n=100)		Control Group (n=50)		P
	No	%	No	%	
Gender					
Male	32	32	12	24	0.3
Female	68	68	38	76	
Age Mean $\pm$ SD	29.8	8 $\pm$ 47	29.92	8.65	0.9
Marital Status					
Married	57	57	33	66	0.4
Single	34	34	11	22	
Divorced	7	7	4	8	
Widow	2	2	2	4	
Educational Level					
Low	21	21	9	18	0.7
Moderate	43	43	25	50	
High	36	36	16	32	
Occupation					
Unemployed	51	51	20	40	0.2
Employed	49	49	30	60	

Methods:

An informed written consent was taken from all subjects after explaining to them the aim of the study.

All case subjects involved in the study were assessed using:

1. The multidimensional fatigue inventory (MFI) to assess the symptom and measure fatigue from different aspects²⁰.
2. Patients who are approved that their complaint is fatigue will undergo a clinical evaluation to exclude underlying or contributing organic medical conditions that may cause fatigue.
3. A thorough history exploring all possible medical causes; alcohol or other substance abuse and current use of prescription and over-the-counter medications and food supplements will be taken.
4. A thorough physical examination.
5. A minimum battery of laboratory screening tests including complete blood count with leukocyte differential; erythrocyte sedimentation rate; serum levels of alanine amino-transfers total protein, albumin, fasting blood glucose, blood electrolytes and creatinine; determination of thyroid stimulating hormone and urine analysis.
6. Psychiatric diagnosis was carried out using the Mini International Neuropsychiatry Interview (M.I.N.I) which is a structured interview schedule tested as regard reliability and validity on Egyptian patients^{21,22}.

Tools:

1. Mini International Neuropsychiatric Interview (MINI)²²:
 - MINI is a short structured diagnostic interview developed by psychiatrists and clinicians in United States and Europe. MINI is:
 - Short and inexpensive tool.
 - Simple, clear and easy to administer.
 - Highly sensitive, i.e., A high proportion of patients with a disorder should be detected by the instrument.
 - Specific, i.e., Has the ability to screen out-patients without disorders.
 - Compatible with international diagnostic criteria, including the international classification of diseases (ICD-10) as well as diagnostic and statistical manual of mental disorders, 4th edi (DSM-V).
 - Able to capture important subsyndromal variants.

MINI has been validated against the much longer structured clinical interview for DSM diagnoses (SCID-P) in English and French and against the composite international diagnostic interview for ICD-10(CIDI) in English, French and Arabic. It has been validated against expert opinion in a large sample in four European countries (France, United Kingdom, Italy and Spain)²².

The Arabic version used in this study was validated through its use in many studies that were conducted in the Institute of Psychiatry Ain Shams University²¹.

2. The Hamilton Depression Rating Scale (HDS)²³.
3. Hamilton Anxiety Scale (HAS)²⁴.
4. Multidimensional Fatigue Inventory (MFI)²⁰:

MFI-20 is a multidimensional self-report instrument designed to measure five aspects of fatigue. The postulated dimensions are based on the fact that fatigue can be expressed by general remarks of a person concerning his/her functioning (general fatigue); by referring to physical sensations related to feelings of tiredness (physical fatigue); as well as in terms of cognitive symptoms, such as having difficulty concentrating. The last two dimensions assess lack of motivation to start any activity (reduced motivation) and reduced activity which might result from fatigue.

Each scale contains 4 items for each dimension. The statements are worded in a positive and negative direction (2 in each case) to prevent tendencies towards the response set as much as possible.

The statements refer to how the respondent has been feeling lately. The latter has to indicate on a 5 point scale ranging from agreement (yes) to disagreement (no) with the statement higher scores indicating a higher degree of fatigue.

The MFI-20 had been translated into Arabic language and revalidated on an Egyptian population²⁵ and used as it is short and multidimensional, designed to provide a complete description of the fatigue experience²⁰.

5. Middlesex hospital questionnaire (M.H.Q).

MHQ is a short clinical diagnostic self-rating scale for psychoneurotic patients. It was designed to assess the personality traits (bereavement, sleep disorders anorexia nervosa, parents of handicapped children, fire raisers and sickness absence in industry)²⁶ and the clinical relevant dimension of neurosis (anxiety, phobia, depression, obsession, psychosomatic and hysterical traits). The Middlesex hospital questionnaire has been renamed Crown-crisp Experiential Index (CCEI) and standardized, item analyzed for reliability and validity. MHQ has been translated into many languages Italian, Hindi, French. and Arabic. and used by psychologists for assessing the personality traits of many conditions. These include.

Scoring was interpreted as normal (0-7), borderline (8-11) and significant (12-16).

6. Statistical methods.

Statistical results were done by the Statistical Package for Social Sciences (SPSS), Version 15.

Qualitative data were described using frequency and percentage and for quantitative data mean and standard deviation.

The Following Statistical procedures have been used:

1. Chi-square (X²): A nonparametric statistic used to test for significance of the difference between more than two independent proportions.
2. Student t-test: A statistic used to test for significance of an independent variable in experiments where there are only two levels of these variables.
3. Correlation coefficient test.
4. P-value: Used to indicate level of significance as $p > 0.05$ = non-significant and $p < 0.05$ = significant.

RESULTS

Psychiatric examination of both groups shows highly statistically significant difference of depressive disorder, anxiety disorder, somatization, hypochondrias and schizophrenic disorder in cases than control group (Table 2).

Table 2 : Primary Psychiatric Diagnosis in both groups.

Psychiatric Diagnosis	Case Group		Control Group		P
	No	%	No	%	
Major Depressive Disorder	39	39	5	10	0.000*
Dysthymia	4	4	5	10	
Anxiety Disorders	23	23	5	10	0.000*
GAD	14	14	0	0	
PD	6	6	0	0	
Mixed AD	3	3	5	10	
Somatization Disorder	27	27	0	0	0.000*
Hypochondriasis	4	4	0	0	0.000*
Schizophrenia	3	3	0	0	0.000*

*Statistically significant

Table 3 shows significant statistical difference between case and control group in three types of fatigue; physical fatigue, reduced activity and mental activity. While there is no significant statistical difference at the level of general fatigue and reduced motivation.

Table 3 : Comparison Between Case and Control groups as regards to different types of fatigue.

Types of Fatigue	Case Group		Control Group		P
	No	%	No	%	
General Fatigue	93	93	50	100	0.9
Physical Fatigue	61	61	49	98	0.00*
Reduced Activity	70	70	49	98	0.00*
Reduced Motivation	37	37	17	34	0.7
Mental Fatigue	60	60	44	88	0.00*

* Statistically Significant

Our study also investigated the correlation of psychiatric diagnosis with different types of fatigue (Table 4).

There was also a positive correlation in four types of fatigue; physical fatigue, reduced activity, reduced motivation and mental fatigue (Table 4).

1. Physical fatigue was significantly higher in somatization and hypochondriasis disorders.
2. Reduced activity was significantly higher in anxiety disorders somatization and hypochondriasis disorder.
3. Reduced motivation was significant higher in schizophrenic patients and depressive patients.
4. Mental fatigue was significant higher in anxiety disorders and schizophrenia.

Table 4: Correlation of Psychiatric Diagnosis in case subject with Different Types of Fatigue.

Psychiatric Diagnosis	Medians (Range)				
	MDFI General Fatigue	MDFI Physical Fatigue	MDFI Reduced Activity	MDFI Reduced Motivation	MDFI Mental Fatigue
Depressive Disorder	18 (14-20)	14 (7-20)	16 (8-20)	17 (8-20)	15 (10-20)
Anxiety Disorder	19 (18-20)	16 (6-20)	18 (9-20)	8 (5-17)	19 (11-20)
Somatization Hypochondriasis	19 (14-20)	19 (14-20)	18 (13-20)	7 (4-20)	12 (6-20)
Schizophrenia	19 (19-20)	14 (11-17)	14 (13-16)	19 (19-19)	18 (17-20)
P - Value	0.784	0.000	0.043	0.000	0.000

Severity of the mental disorder may also be correlated to severity of fatigue (Table 5) shows a positive correlation between the degree of severity of depressive disorders with reduced motivation and mental fatigue, while there is a negative correlation between the severity of depressive disorders with general fatigue, physical fatigue and reduced activity.

Table 5: Correlation of the severity of depressive disorders in the case subjects with different types of fatigue.

Degrees of depressive disorders	MDFI General fatigue	MDFI Physical fatigue	MDFI Reduced activity	MDFI Reduced motivation	MDFI Mental fatigue
Mild	10(19.6%)	6(22.2%)	6(17.1%)	2(18.2%)	1(9.1%)
Mild to moderate	1(37.3%)	11(40.7%)	16(45.7%)	14(73.7%)	9(47.4%)
Moderate to severe	22(43.1%)	10(37%)	13(37.1%)	15(68.2%)	10(81.8%)
P-value	0.15	0.715	0.138	0.006	0.000

Table 6 shows negative correlation between the degree of severity of anxiety disorders in case subjects as regards different types of fatigue.

Table 6: Correlation of the severity of anxiety disorders in the case subjects with different types of fatigue.

Degrees of anxiety disorders	MDFI General fatigue	MDFI Physical fatigue	MDFI Reduced activity	MDFI Reduced motivation	MDFI Mental fatigue
Mild	1(5%)		1(5.9%)	1 (5.3%)	1(5%)
Mild to moderate	8(40%)	5(45.5%)	6(35.3%)	7 (36.8%)	9(45%)
Moderate to severe	11(55%)	6(54.5%)	10(58.8%)	11(57.9%)	10(50%)
P-value	0.497	0.561	0.344	0.229	0.62

(Table 7) shows the comparison of personality traits between case and control groups revealing. more hysterical traits, anxiety traits, obsessive traits and psychosomatic traits in cases than control group.

Table 7: Comparison of personality traits between case and control groups.

Personality traits	Case	Control	P-value
	NO. %	NO. %	
Anxiety	51(51%)	10(20%)	0.000 *
Phobia	12(12%)	5(10%)	0.854
Obsession	21(21%)	5(10%)	0.003 *
Psychosomatic	76(76%)	23(46%)	0.000 *
Depression	51(51%)	19(38%)	0.121
Hysteria	8(8%)	0(0%)	0.095

* Statistically significant.

DISCUSSION

Fatigue is one of the commonest presenting symptoms in primary care, being the main complaint in 5%-10% of patients²⁷. Most psychiatric morbidity among primary care patients passes undetected by the primary care practitioners, inevitably leading to unnecessary investigation and medication as well as the continuation of patients' suffering.

This work demonstrates that the most frequently encountered diagnoses belonged essentially to three major categories; depressive disorders (43%), somatization (31%) and anxiety disorders (27%). in addition, high comorbidity was found between the previous groups (21%); among which major depressive disorder (34%) and somatization (>25%) was the most prevalent diagnosis. GAD was also found in a high rate.

Numerous studies have shown a strong association of unexplained chronic fatigue with general psychiatric morbidity and specific psychiatric disorders, mainly depression. This finding has been reported in studies done in tertiary centers, primary care settings and the community and thus it is not due to selection bias.

Several explanations have been suggested for this association:

1. Overlapping criteria for chronic fatigue and psychiatric disorders, especially depression
2. The association could be causal, i.e., Fatigue could be viewed as a neurotic symptom and patients with unexplained chronic fatigue could suffer from a primary psychiatric disorder,
3. The psychiatric symptoms could be viewed as a secondary reaction to a chronic physical illness (reverse causality)
4. Confounding could occur if common factors contributed to the etiology of both psychiatric disorders and chronic fatigue.

Similar to our work, An Egyptian study on 120 patients showed that fatigue represents 90% of the somatic symptoms and that the diagnoses given to the 72 inpatients were as follows: Depressive disorder (32%), schizophrenia (29.1%), anxiety (13.8%), delusion disorder (12.5%), somatoform disorder (8.3%). Among the 48 outpatients 25% had depressive disorders, 25% had somatoform disorders, 25% had anxiety disorders, 18.75% had bipolar manic disorders and 6.25% had neurasthenia²⁸.

A cross-cultural comparison between Western and Egyptian patients reveals some differences. Depression among Egyptian patients is manifested mainly by agitation, somatic symptoms, hypochondriasis, physiological changes such as decreased libido, anorexia and insomnia, which is not characterized by early morning awakening. Egyptian patients mask their affect with multiple somatic symptoms, occupying the foreground and the affective component of their illness that recedes to the background. This may be because of the greater social acceptance of physical complaints than of psychological complaints²⁸.

Also considerable number of patients do not ask for help at all, especially in rural populations, among which absenteeism from work or inability to face day-to-day affairs is largely tolerated by the community^{29,31}.

Our study is also supported by the findings in United Arab Emirates where fatigue was strongly associated with anxiety especially in young adults (25.8% in males and 47.1% in females), meanwhile depression was strongly associated with fatigue in female only (its prevalence in female was 45.8%)³². As well as Saudi Arabia patients in another study conducted by El Refaie et al.³³ using the Hospital Anxiety and Depression (HAD) scale, showed the prevalence of depression (17%), anxiety (16%) and the total morbidity for depression and anxiety or both was 26%.

Patients from well-developed countries are more likely to report fatigue in response to direct questions but are less likely to present with fatigue to physicians compared with patients from less-developed countries³⁴. In addition, in less-developed countries, the complaint of fatigue might be an indicator of hidden psychiatric morbidity. By contrast, in

more-developed countries, although syndromes of fatigue are common, they should not be always considered as evidence of unmet need as they might represent a common expression of psychosocial distress.

On the other hand a study on 100 subjects to detect the prevalence and experience of psychiatric morbidity among primary care patients with chronic fatigue in Hong Kong using the enhanced version of the Structured Clinical Interview for DSM-III-R revealed that the psychiatric morbidity was common among primary care patients with chronic fatigue and the current depressive and anxiety disorders were identified in 28% of subjects, somatoform pain disorder in 33% and undifferentiated somatoform disorder in 30%, but most of them could also be diagnosed as having shenjing shuairuo (weakness of nerves) and to a lesser extent, ICD-10 neurasthenia³⁵. These differences can be ascribed to variations in methodology besides the cultural gaps between Egyptian and Chinese society. In addition, the Chinese society, "neurasthenia," or more specifically shenjing shuairuo (weakness of nerves), remains a ubiquitous illness and a major source of health care utilization that exists as a residual neurotic disorder in the national system of classification used in China, the CCMD-2 in spite of it is not formally found in DSM-IV.

As discussed before, such conflicting results might be due to a number of factors, first of all consideration the cultural factors that may play major role in the fatigued subjects.

Lastly, some patients with anxiety and depression may lack insight into their psychiatric condition. Consequently, it is possible that estimation based on the subjects' self-assessment of whether or not they are depressed may underestimate these psychiatric disorders.

As regard socio-demographic data and its relation to fatigue, our findings are in accordance with the findings of two earlier primary health care studies in Arabic countries. First, in a primary health care study carried out in northern Jordan the highest prevalence of psychiatric morbidity was in females ≥ 40 years, in uneducated and highly educated groups, in unemployed people and in patients who were perceived to have fair or poor physical health³⁶. Second, in El-Bahraini study the prevalence of psychiatric morbidity was 44.4% and was commonest in women aged 50–55 years, married and in less-educated patients³⁷.

Several theories have been proposed to explain the increased somatic symptom report in women. It may be based on the higher prevalence of anxiety disorder and depression in women, which is strongly related to symptom reporting. Other factors may be a history of sexual or physical abuse, gender differences in social roles and responsibilities, cultural factors permitting greater expressiveness in women, lower threshold for seeking health care, Also educational level, may increase orientation and capacity of subjects towards different stresses. Some studies reached results similar to ours, revealing^{38,39} that $>50\%$ of the sample had little education (i.e. finished intermediate school or less).

A tendency for a significant difference was found in the education level; less educated patients were more likely to have psychological disorders.

In our work, it was found that physical fatigue, reduced activity and mental fatigue were higher in control subjects than case group (Table 3), even in the pure organic control subjects, implying that medically ill disease like chronic anemia via its pathology. On the contrary to our work, in UK, physical fatigue and fatigability are prominent in CFS, depressive and neuromuscular disorder, implying that subjective complaints of physical fatigue have little diagnostic use.

We also found that all dimension of fatigue were positively correlated with psychiatric diagnoses of the case group except general fatigue (Tables 4_6), indicating that general fatigue measures the comprehensive aspects of fatigue (screening subscale) and that was supported by Smets et al.²⁰.

Physical fatigue was significant higher in somatoform disorders. Reduced activity was significant higher in anxiety disorders and somatoform disorders. While reduced motivation was significant higher in schizophrenia and depressive disorders. Finally, mental fatigue was significant higher in anxiety disorders and schizophrenic patients.

There was a positive correlation between the degree of severity of depressive disorders with reduced motivation and mental fatigue, while there was a negative correlation between the severity of depressive disorders with general fatigue, physical fatigue and reduced activity.

There was a negative correlation between the degrees of severity of anxiety disorders in the case subjects as regards different types of fatigue.

Personality of patients was different in patients of fatigue syndrome than organic patients in obsessive, psychosomatic and anxiety traits. Our results are similar to other who reported the association between somatization and obsessive compulsive pattern^{41,43}. These patients are concerned about control over physical and mental functioning and consequently are threatened by unexplained symptoms.

Finally we recommend more deep studies on larger sample size concerned with patients with fatigue syndrome as regard their personality profile and the underlying mental disorders in different cultures.

Also psychiatric teaching programs for medical students and GPs including such vague disorder is important because of its high frequency and its liability for misdiagnosis and consequently management.

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