

The epidemiology of fatigue and depression: a French primary-care study

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SYNOPSIS The prevalence of fatigue as a presenting complaint and as a symptom is evaluated in French general practice patients. The data for a sample of 3784 persons 18–64 years-of-age who were seen by 367 general practitioners were examined for fatigue as a presenting complaint, diagnosis, and reported symptoms of persistent fatigue. Gender, age, and socio-professional category were considered as potential risk correlates. At least one of the symptoms of persistent fatigue was reported by 41.2% of the patients, but only 7.6% had presented with fatigue to the doctor. Women reported more symptoms of fatigue than men, but they were only slightly more likely to present with, or be diagnosed with fatigue; women were more frequently diagnosed with depression. There was a strong relationship between the symptoms of depression as measured by the Center for Epidemiologic Studies – Depression Scale (CES-D) and fatigue, but fatigue was neither sensitive nor specific for the diagnosis of depression. Age and fatigue as a presenting complaint and diagnosis were strongly associated for men. After adjusting for sex and age, we found that lower social classes were less likely to be diagnosed as fatigued, though they were more likely to report symptoms of fatigue.

INTRODUCTION

At the beginning of the twentieth century one of the principal concerns of the neurological and psychiatric literature in both Europe and the United States was the chronically fatigued patient (Wessely, 1991a; Shorter, 1992). The problem of fatigue attracted attention from politicians, scientists, educators, novelists and administrators. In the medical literature a specific diagnosis was created to describe sufferers from persistent fatigue: neurasthenia. However, during the first half of this century interest in fatigue declined, and by the Second World War professional interest in the tired patient had become very slight indeed.

Recently all this has changed. The dramatic rise to prominence of several new labels for sufferers from chronic fatigue has renewed medical interest in fatigue. These diagnoses, such as chronic mononucleosis and chronic

fatigue syndrome in the United States, or post-viral fatigue syndrome and myalgic encephalomyelitis in the United Kingdom, have attracted extraordinary attention from the public and media, recently matched by similar attention in the professional journals.

The new fatigue syndromes have been accompanied by often intense controversy about their nature. Much of this has revolved around competing physical and psychological explanations of illness. However, to date the controversy has surrounded the interpretation of small hospital-based case-control studies using highly selected groups of patients (Lewis & Wessely, 1992). Such studies contain numerous problems, including selection, duration, information and ascertainment biases (David *et al.* 1988; Wessely, 1991b) that render many of their conclusions suspect.

Few reports have appeared using primary care populations, and even fewer use adequate survey techniques. Researchers in Scotland (Hoyen & McNamara, 1991) and Australia (Lloyd *et al.* 1990) have asked general practitioners to identify cases of severe fatigue retrospectively,

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although this method is subject to large errors of misclassification. There are a number of epidemiological studies in which data on the prevalence of fatigue were obtained as part of a larger study (see Lewis & Wessely, 1992), but few surveys have been reported specifically concerned with the question of fatigue. These have included an ambulatory care service in a large teaching hospital (Buchwald *et al.* 1987), and primary care surveys in Texas (Kroenke *et al.* 1988), the United Kingdom (David *et al.* 1990) and Canada (Cathébras *et al.* 1992). All confirmed that persistent fatigue was common in those attending for medical care. All also found associations with either a complaint of depression (Buchwald *et al.* 1987), questionnaire measures of psychological disorder (Kroenke *et al.* 1988; Cathébras *et al.* 1992), or psychiatric diagnoses (Cathébras *et al.* 1992; McDonald *et al.* 1993).

Although fatigue is common, one must beware of thinking that it is a trivial complaint (Lewis & Wessely, 1992). An American primary-care study (Nelson *et al.* 1987) concluded that 'about one-third of sufferers indicate that it seriously erodes their overall enjoyment of life and renders them unable to carry out their usual role activities'. In the American primary care study already discussed (Buchwald *et al.* 1987), 28% of patients had been completely bedridden as a result of fatigue at some stage of their illness. Fatigue is not just a frequent complaint in primary care, it is also an important public health problem, associated with disability comparable to that found in chronic medical patients (Kroenke *et al.* 1988).

We now report the results of a large scale study in French primary care that examined the epidemiology of fatigue as a presenting complaint, as a diagnosis or as a persistent symptom, and the association between fatigue and depression. France has a national health insurance system that provides coverage to virtually all persons in the country, and a social aid system exists for the needy who do not have the health insurance coverage; hence, there are no barriers to medical care and individuals from all social classes are included in the sample. Furthermore, due to the geographic diversity in the sampling frame, this study sample spans the regional heterogeneity that exists throughout the country.

METHOD

Selection of sample

The study sample is a subgroup of a large scale epidemiological survey of depressive disorders in patients seen by general practitioners (GP) in France. The full sample was selected from the population of patients consulting their GP during the week of 12–19 November 1984 in 15 *départements* throughout France. All patients 18 years of age or older, who consulted the 367 participating GPs, were eligible for inclusion in the study – there were no exclusion criteria. Any patient who was seen on a scheduled, emergency or home visit was invited to participate. The details of the study design and the objectives are reported elsewhere (Fuhrer & Rouillon, 1991). For the present report, the sample was limited to the 3784 patients between the ages of 18 to 64 (Table 1). This subsample of patients consists of 2324 women (61%), 12% of the sample was less than 25 years of age, 24% was between 25 and 34 years old, while 24% was at least 55 years old. Seventy-four per cent of the sample was married or living with a partner, 15% was single, 6% was divorced or separated and 5% was widowed. A social class index does not exist in France, but the Socio-Professional Category developed by INSEE (1983) is a proxy measure based on the person's profession: the majority of patients (57.8%) were clerical or sales staff, or skilled and unskilled labourers, whereas 5.2% were executives, upper management or in professional occupations and 10% were not employed. It should be noted that this classification system is not ordinal and analyses are carried out based on a dummy variable transformation of this nominal variable with high level professionals as the reference group.

Data

Information about the patient was recorded by both GP and patient. The GP completed a study-specific medical record abstract form that included basic demographic data, presenting complaints and/or reasons for encounter (up to four) as expressed by the patient, diagnoses and/or reasons for encounter as judged clinically by the GP, treatments provided, referrals, and the *Diagnostic and Statistical Manual*, 3rd edn (DSM-III) (American Psychiatric Association,

Table 1. Sociodemographic characteristics of the sample by gender (N = 3784)

	Total		Men		Women	
	%	N	%	N	%	N
Gender	100.0	3784	38.6	1460	61.4	2324
Age group*	N = 3723		N = 1429		N = 2294	
18-24	12.3		10.4		13.5	
25-34	23.8		21.5		25.3	
35-44	19.2		20.4		18.5	$\chi^2 = 20.5, P < 0.001, df = 4$
45-54	20.8		21.3		20.4	
55-64	23.8		21.4		22.2	
Socio-professional category†	N = 2626		N = 1065		N = 1561	
Executives, upper management, Professionals (doctors, lawyers, scientists)	5.2		7.1		3.9	
Middle management + intermediate professions	19.3		21.4		17.9	
Self-employed (shop keepers, artisans, farmers)	7.6		11.0		5.3	$\chi^2 = 378.3, P < 0.0001, df = 6$
Office and sales staff	33.6		18.5		43.9	
Skilled and unskilled workers	24.2		38.1		14.7	
Not employed (housewives, students, never employed)	10.1		3.9		14.3	

* Numbers do not add up to the totals due to missing values.

† Socio-professional category only available for subjects having returned their questionnaires, of whom 12% (359) did not provide this information.

1980) diagnostic criteria for major depressive episode (MDE) that the GP had been trained to use. If fatigue or neurasthenia was mentioned by either the patient or the doctor, then it was considered to be a presenting complaint or diagnosis of fatigue, respectively.

The patient completed a questionnaire that included detailed socio-demographic data, health care seeking behaviour, reason for encounter (up to three), and the Center for Epidemiological Studies - Depression Scale (CES-D) (Radloff, 1977). The CES-D is a 20-item self-report questionnaire that measures depressive symptomatology, developed for use in epidemiological surveys. Response categories vary between 0 and 3, based on the frequency of the symptom during the preceding week. Most American studies use a score of 16 and above as indicative of a high level of depressive symptoms. Based on Receiver Operating Characteristic (ROC) analyses carried out during the validation phase of the French version of the CES-D (Fuhrer & Rouillon, 1989), it was recommended that different cut-offs (≥ 17 men; ≥ 23 women) be employed from those usually used in American epidemiological research. An

elevated level of depressive symptomatology should not be equated with depression *per se*, in view of the fact that it is also associated with physical illness and other mental disorders.

The presenting complaints, reasons for encounter and diagnoses were coded using the International Classification for Primary Care (Lamberts & Wood, 1987), a system that is compatible with the ICD-9, but appropriate to the data collected. Fatigue is the health problem of interest in this report, and the following methods will be used to define the presence of fatigue.

1. Fatigue-complaint

Fatigue as a presenting complaint as expressed by the patient and recorded by the GP; this complaint may be the principal or a secondary reason for consulting.

2. Fatigue-diagnosis

Fatigue, neurasthenia and asthenia as the diagnosis or reason for encounter as judged by the GP. (In addition, exhaustion, psychasthenia and spasmophilia will be analysed separately where appropriate.) When the doctor did not record

any other diagnoses, then fatigue was defined as being the unique diagnosis for that consultation.

3. MDE-fatigue

The persistent presence of 'loss of energy, fatigue' during the preceding 2 weeks, one of the criteria for DSM-III diagnosis of MDE. The presence of this symptom was recorded by the GP at the end of the clinical interview.

4. Symptoms of fatigue (CES-D items)

Two of the CES-D items assess feelings of fatigue: 'I felt that everything I did was an effort' and 'I could not get going'. For this report we dichotomized the items as absent (if experienced rarely (or some of the time) and present (if experienced at least a moderate amount of the time) during the preceding week.

The information collected by the GP is for a maximum sample size of 3784 patients, when there are no missing data. Questionnaires were sent back by 3023 (79%) patients including 27 who refused to provide further information, and 2711 (71.6%) answered at least 16 items of the CES-D. A CES-D with more than four missing items was excluded from analysis as recommended by the instrument's authors. Patients who sent back their questionnaires, as well as those who completed the CES-D, did not differ from the non-responders on sex, fatigue as a presenting complaint or diagnosis, depression according to the GP or to the DSM-III criteria for major depression. The age distribution did differ for those who sent back the questionnaire, where more patients (85.0% v. 77.2%) in the oldest age group (55–64) responded, but this difference did not persist for the completed CES-D.

Statistics

The measures of association used were the Pearson's χ^2 test, the Mantel-Haenzel χ^2 test for linear trends, and the odds ratio (OR). Where appropriate, the risk estimates were adjusted for the effects of sex or sex and age. The odds ratios and the 95% confidence intervals (CI) were computed by the logit estimator method (SAS FREQ Procedure: SAS User's Guide, 1991) for bivariate analyses and the BMDP (BMDP, 1990) Logistic Regression (LR) procedure was used for the multivariate analyses. Attributable risks

were calculated using the method proposed by Miettinen (Miettinen 1974).

RESULTS

Table 2 shows the prevalence rates of fatigue according to the different definitions. The prevalence estimates ranged between 7.6% for fatigue as the presenting complaint (Fatigue-Complaint) as noted by the doctor, to 3.7% for a diagnosis of fatigue (Fatigue-Diagnosis). In contrast, the GP noted that the patient had experienced persistent fatigue for a two week period (the MDE criterion) for 31.3% of the sample (although this was not necessarily a presenting complaint or diagnosis); 33.8% of the patients reported a persistent feeling that 'everything was an effort' while 30.6% reported persistently feeling that 'they could not get going or were lacking energy'. The more precise diagnosis of psychasthenia was made for 23 (0.6%) of the patients, whereas spasmophilia, a diagnostic category that is used in France and that we added to the ICPC, was reported for 47 (1.2%) of the patients. Thus, we note that about one-third of all patients reported persistent symptoms of fatigue both in a self-administered questionnaire and to their physician, but a far smaller proportion actually consulted for fatigue as such.

When fatigue as the patient's presenting complaint (Fatigue-Complaint) was examined separately by gender, 8.1% of the women consulted their GP for fatigue, compared to 6.8% of the men (Odds Ratio = 1.21; 95% CI 0.94–1.56). Little difference was also found between men and women for a diagnosis of fatigue (Fatigue-Diagnosis). However, the prevalence of fatigue as defined by the MDE criterion of persistent fatigue for the preceding 2 weeks, or defined by the persistence of the CES-D items for at least 3–4 days, was consistently reported more often by women. Nonetheless, while women experienced more fatigue than men, they were only slightly more likely to consult with this presenting complaint. Furthermore, doctors did not diagnose fatigue more often in women.

Age was significantly related to fatigue for three of the measures of fatigue used; the exceptions were the two CES-D items (Table 3). For the patient's presenting complaint, it was the oldest age group (55–64 years of age) that

Table 2. Prevalence rates and odds ratios of fatigue using multiple definitions and measures

	Fatigue-complaint N (%)	Fatigue-diagnosis N (%)	Persistent fatigue-MDE N (%)	'Effort' N (%)	Lack of 'energy' N (%)
Total	292 (7.6)	141 (3.7)	1194 (31.3)	924 (33.8)	842 (30.5)
Men	99 (6.8)	49 (3.5)	353 (24.5)	280 (26.9)	244 (23.2)
Women	188 (8.1)	89 (3.8)	829 (36.0)	644 (38.0)	598 (35.1)
	$\chi^2 = 2.19, NS$	$\chi^2 = 0.57, NS$	$\chi^2 = 54.7, P = 0.00$	$\chi^2 = 35.4, P = 0.00$	$\chi^2 = 43.1, P = 0.00$
Odds ratio (95% CI)					
Women/Men	1.2 [0.9-1.6]	1.2 [0.8-1.6]	1.7 [1.5-2.0]	1.7 [1.4-2.0]	1.8 [1.5-2.1]

Fatigue-complaint: Fatigue as a presenting complaint as expressed by the patient but noted by the GP (N = 3784).
 Fatigue-diagnosis: Fatigue, neurasthenia and asthenia as the diagnosis or reason for encounter as judged by the GP (N = 3784).
 Persistent fatigue-MDE: The persistent presence of 'loss of energy, fatigue' during the preceding 2 weeks, one of the criteria for the DSM-III diagnosis of major depressive episode (N = 3748).
 Fatigue symptom-effort*: 'I felt that everything I did was an effort' (N = 2734).
 Fatigue symptom-energy*: 'I could not get going' (N = 2758).
 * For this report, items were dichotomized as absent (code = 0) for the first two response categories and present (code = 1) for persistence of the feeling (at least 3 or 4 days during the preceding week).

Table 3. Prevalence rates (%) and crude odds ratios [95% CI] fatigue by age and gender

Age group	Prevalence rate				
	Fatigue-complaint	Fatigue-diagnosis	Persistent fatigue-MDE	'Effort'	Lack of 'energy'
18-24	7.4	3.9	23.7	28.2	25.6
25-34	9.6	4.5	33.5	32.0	30.9
35-44	8.5	4.5	32.0	32.0	30.8
45-54	8.0	3.6	36.6	36.2	32.9
55-64	4.5	2.3	28.6	37.7	30.6
	$\chi^2 = 18.1, P \leq 0.001$	$\chi^2 = 8.06, NS$	$\chi^2 = 26.9, P = 0.0001$	$\chi^2 = 12.4, P = 0.01$	$\chi^2 = 5.5, NS$
Crude odds ratio					
Age group by gender					
Men					
18-24	2.4 [1.0-5.8]	2.6 [0.6-10.4]	0.8 [0.5-1.3]	0.4 [0.2-0.7]	0.5 [0.3-1.0]
25-34	2.8 [1.4-5.9]	4.8 [1.6-14.6]	1.3 [0.9-1.9]	0.9 [0.6-1.3]	1.1 [0.7-1.6]
35-44	3.3 [1.6-6.7]	5.4 [1.8-16.4]	1.4 [0.9-2.0]	0.8 [0.6-1.3]	0.9 [0.6-1.4]
45-54	3.0 [1.4-6.1]	3.2 [1.9-10.2]	1.6 [1.2-2.3]	1.0 [0.7-1.5]	1.2 [0.8-1.8]
55-64	1.0	1.0	1.0	1.0	1.0
Women					
18-24	1.4 [0.8-2.4]	1.5 [0.7-3.0]	0.7 [0.5-1.0]	0.7 [0.5-0.9]	0.8 [0.6-1.1]
25-34	1.9 [1.2-3.1]	1.4 [0.7-2.6]	1.2 [0.9-1.5]	0.7 [0.5-0.9]	0.9 [0.7-1.2]
35-44	1.5 [0.9-2.5]	1.2 [0.6-2.5]	1.1 [0.8-1.4]	0.7 [0.5-1.0]	1.0 [0.7-1.4]
45-54	1.4 [0.8-2.3]	1.2 [0.6-2.5]	1.3 [1.0-1.7]	0.8 [0.6-1.2]	1.0 [0.7-1.4]
55-64	1.0	1.0	1.0	1.0	1.0

had the lowest rate, although the difference only reached conventional statistical significance in males ($\chi^2 = 12.6, df = 4, P = 0.01$). The oldest age group also had the lowest rate of fatigue as a diagnosis (though the effect of age remained non-significant for women ($\chi^2 = 1.4, df = 4, P = 0.85$), whereas it was significant for men ($\chi^2 = 12.4, df = 4, P = 0.02$)). It should be noted that male patients in the 25-44 year age groups were at increased risk of receiving a doctor's 'diagnosis' of fatigue, whereas we found that

women in this age group were at increased risk for the diagnosis of depression. 'Everything being an effort' was correlated with age, though the association was weak. As people aged, the frequency of the sense of effort increased ($\chi^2_{MH} = 11.6, df = 1, P = 0.001$), with this trend being somewhat stronger for women than for men as illustrated by the odds ratio estimates.

After adjusting for gender and age, there was no association with socio-professional category for a presenting complaint of fatigue or the

Table 4. Odds ratios (95% CI) fatigue by socio-professional category adjusted for gender and age

Socio-professional category	Fatigue-complaint	Fatigue-diagnosis	Persistent fatigue-MDE	'Effort'	Lack of 'energy'
Executives, upper management, professionals (doctors, lawyers, scientists)§	1.0	1.0	1.0	1.0	1.0
Middle management + intermediate professions (teachers, nurses, etc.)	0.9 [0.5-1.7]	0.7 [0.3-1.5]	0.8 [0.5-2.1]	1.3 [0.9-2.1]	1.7 [1.0-2.7]
Self-employed (shop-keepers, artisans, farmers)	0.9 [0.4-2.0]	0.8 [0.3-2.0]	0.7 [0.4-1.2]	1.2 [0.7-2.0]	1.7 [0.9-2.9]
Office and sales staff	0.7 [0.4-1.3]	0.4 [0.2-1.0]	0.9 [0.6-1.3]	1.5 [1.0-2.3]	1.9 [1.2-3.0]
Skilled and unskilled workers	0.6 [0.3-1.1]	0.4 [0.2-0.9]	0.9 [0.6-1.4]	1.5 [0.9-2.3]	1.7 [1.0-2.7]
Not employed (housewives, students, never employed)	0.4 [0.2-0.9]	0.2 [0.1-0.7]	0.7 [0.4-1.1]	1.5 [0.9-2.4]	1.4 [0.8-2.5]

Fatigue-complaint: Fatigue as a presenting complaint as expressed by the patient but noted by the GP ($N = 2619$).

Fatigue-diagnosis: Fatigue, neurasthenia and asthenia as the diagnosis or reason for encounter as judged by the GP ($N = 2619$).

Persistent fatigue-MDE: The persistent presence of 'loss of energy, fatigue' during the preceding 2 weeks, one of the criteria for the DSM-III diagnosis of major depressive episode ($N = 2596$).

Fatigue symptom-energy: 'I felt that everything I did was an effort' ($N = 2430$).

Fatigue symptom-effort: 'I could not get going' ($N = 2450$).

§ Reference group.

MDE fatigue criterion (Table 4). We did obtain a slight negative effect for a diagnosis of fatigue among female skilled and unskilled workers and the non-employed, which may be due to other more specific diagnoses taking precedence. In contrast, a weak, but positive association was found for the symptoms of fatigue (CES-D items) for most of the other job categories when compared to the executive/professional category. When this association was examined separately for men and women, the effect was significant only for men. Men in the highest professional category reported these symptoms $\frac{1}{2}$ to $\frac{1}{3}$ less often than men in the intermediate or office/skilled/semi-skilled categories respectively. This increase in risk could be due to reporting bias.

Fatigue and depressive disorders

The mean CES-D score for the sample was 18.5 (14.6 for men, 20.2 for women ($t = 12.6$, $df = 2509$, $P = 0.0001$)) and 37.8% scored above the cut-off currently used in France. Patients with a presenting complaint of fatigue had a mean CES-D score of 23.5 (19.0 for men, 25.9 for women), a highly significant difference from those consulting for all other reasons (mean = 17.6, $t = 6.7$, $df = 243$, $P = 0.0001$). Men with a diagnosis of fatigue had a significantly higher mean CES-D, whereas no difference was found for women. Among those patients who only retained the unique diagnosis of fatigue, the

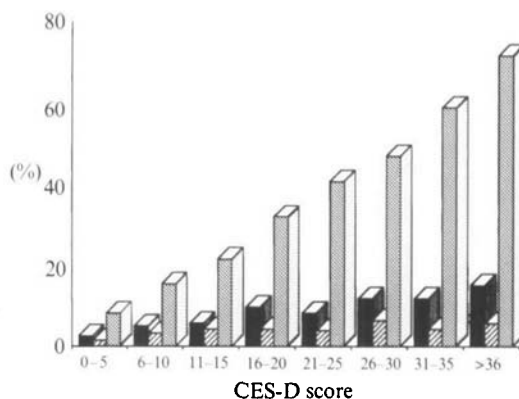


FIG. 1. Proportion of general practice patients with fatigue as presenting complaint, diagnosis and DSM-III major depressive criterion by Center for Epidemiologic Studies-Depression Scale (CES-D). (■, Fatigue: PT; ▨, Fatigue: MD; □, MDE-Criterion.)

CES-D score was 20.4 (± 10.3), for those with fatigue as one of the diagnoses the mean CES-D score was 22.0 (± 12.3), whereas it was 17.6 (± 12.0) otherwise. The group differences were highly significant ($F = 8.2$, $df = 2$, $P = 0.0003$). These differences were comparable after controlling for sex, and there were no significant sex/diagnosis interactions.

The total CES-D score for the sample was broken down into 5-point bands. Within each band we plotted the proportion of patients with Fatigue Complaint, Fatigue Diagnosis, and the MDE criterion of persistent fatigue. Fig. 1

Table 5. Prevalence rates and odds ratios for fatigue as presenting complaint and attributable risk for selected diagnoses

Diagnosis	Prevalence of diagnosis (%)	Fatigue-complaint prevalence (%)**	Odds ratio [95% CI]	Attributable proportion (%)
Fatigue/neurasthenia	3.7	62.4	28.5 [19.7-41.3]	29.1
Psychasthenia	0.6	73.9	36.6 [14.3-93.6]	5.7
Spasmophilia	1.2	17.0	2.5 [1.2-5.5]	1.6
Depression†	11.6	17.7	3.2 [2.5-4.3]	18.6
Major depressive episode‡	11.4	17.0	3.0 [2.3-4.0]	17.1
Anxiety§	3.3	13.3	1.9 [1.1-3.3]	2.8
Any psychological complaint/diagnosis	22.0	17.1	4.0 [3.1-5.1]	37.3
Low blood pressure	0.7	29.6	5.2 [2.3-12.1]	2.2
Anaemia	0.5	21.1	3.3 [1.1-9.9]	0.9
Bronchitis	0.9	11.8	1.6 [0.6-4.7]	0.5

† Clinical diagnosis of depression or depression with anxiety.

‡ DSM-III inclusion criteria for major depressive episode but no exclusion criteria applied.

§ Clinical diagnosis of anxiety without depression.

** Prevalence of fatigue-complaint among patients with the cited diagnosis.

illustrates the relationship between these definitions of fatigue and the CES-D score. The proportion of patients with a diagnosis of fatigue was marginally related to the CES-D score ($\chi^2 = 12.8$, $df = 7$, $P < 0.08$), though the CES-D score had a stronger association with the fatigue complaint ($\chi^2 = 53.4$, $df = 7$, $P < 0.0001$), and the strongest association found was with the MDE criterion ($\chi^2 = 482.7$, $df = 7$, $P < 0.0001$). Strong positive linear trends were obtained for both. The results were comparable for men and women for fatigue as a presenting complaint and for the MDE criterion, but in fact were quite different for the diagnosis of fatigue. Doctors diagnosed men more often as fatigued as their score on the CES-D increased ($\chi^2_{MH} = 9.9$, $df = 1$, $P = 0.002$), whereas the CES-D score had no effect on the diagnosis of fatigue for women ($\chi^2_{MH} = 1.8$, $df = 1$, $P = 0.18$).

A presenting complaint of fatigue was frequent for patients with depression. Among those with a diagnosis of depression, defined by clinical judgement or DSM-III criteria for a major depressive episode, nearly 18% had a presenting complaint of fatigue whereas 6% of all other patients presented with fatigue (Odds Ratio = 3.2, 95% CI = 2.4-4.3). This finding was consistent for men and women. Furthermore, 27.2% of patients presenting with a fatigue complaint were diagnosed as depressed by the GP, compared to 10.4% of non-fatigued patients. Although this finding appears different for men and women (33% of women complaining of fatigue end up with a diagnosis of depression

versus 16.2% for men), in fact women with or without fatigue are 2.5 times as likely to end up with a diagnosis of depression.

Fatigue and selected diagnoses

The frequency of fatigue as a presenting complaint was estimated for selected diagnoses, other than depression, considered to be associated with elevated levels of fatigue (Table 5). The prevalence rates of fatigue as a presenting complaint ranged between 11.8% to 73.9% according to the diagnosis. It was not surprising to find that 62.4% of patients who were diagnosed with fatigue, had presented with a complaint of fatigue. Of those who presented with fatigue ($N = 292$), 30% retained fatigue as one of several diagnoses, while only 6.5% had the unique diagnosis of fatigue. For the entire sample only 0.9% had a unique diagnosis of fatigue. Not surprisingly the odds ratio for a presenting complaint of fatigue was strongly associated with the diagnosis of fatigue and psychasthenia. Other diagnoses had significantly elevated risk estimates that ranged between 1.9 for anxiety and 5.2 for low blood pressure. There was no significant association between bronchitis and fatigue.

DISCUSSION

The present study in a French primary-care sample confirms some of the results from previously reported epidemiological findings of fatigue in other cultures. We found that women

are more likely than men to report symptoms of fatigue, however they are not more likely to consult for fatigue as a presenting complaint, neither are they more likely to be diagnosed as fatigued. Patients over the age of 55 presented less often with fatigue, and they were also at lower risk for a diagnosis of fatigue. On the other hand, symptoms of fatigue did increase with age, albeit the effect of age was weak. Patients in the highest social class category were somewhat more likely to consult for fatigue, although they were less likely to report symptoms of fatigue *per se*. As in any primary-care study it is not possible to generalize to the community population, since many possible confounding factors influence the decision to consult.

It is often stated that women are more fatigued than men. Reported odds ratios vary, but the usual finding is that females are approximately 1.5 times more likely to be fatigued than males (Lewis & Wessely, 1992). Our results confirm that the presence of fatigue is more common in women (OR = 1.7), but fatigue as a presenting complaint shows less gender difference. The odds ratio of 1.2 is very similar to those reported from single general practices in London (David *et al.* 1990) and Canada (Cathébras *et al.* 1992). Jenkins (1985), in her seminal study of gender differences within a single grade of the British Civil Service, also found an odds ratio of 1.2. Pawlikowska and colleagues (1994), in their large community survey, also found an increase of fatigue symptoms for women; although the increase was significant due to their sample size, as in our study, the magnitude of the difference was so small as to question the clinical relevance of this finding. We do note that women report more persistent symptoms of fatigue, as they report more symptoms in general on the CES-D (results not shown, but available from authors). This may be due to the proposition that women are more likely to acknowledge and to express feelings, both positive and negative, more than men (Briscoe 1982). This may reflect biological and/or social factors, but this type of study cannot take this debate further.

Most studies report that there is little variation in the prevalence of fatigue between the ages of 18 and 50. While other studies have found a similar decline after 50, either in women alone (Bengtsson *et al.* 1987) or in both sexes (Essen-

Moller, 1956), Cathébras *et al.* (1992) found no age effect and Pawlikowska *et al.* (1994) actually found an age-associated increase in symptoms for women only. We found that men reported fatigue more frequently before the age of 55 and also that they were diagnosed with fatigue more frequently. Competing health problems and physical diagnoses after the age of 55 may explain that other reasons for consulting would be noted. However, the absence of parallel behaviour as regards women, is a limitation of this explanation.

The popular media stereotype of the chronically fatigued patient is of someone in the higher socio-economic strata, which is confirmed by all published studies of chronic fatigue syndrome based in a specialist or hospital practice. Occasional authors have developed intricate theories to explain this finding (Dowsett *et al.* 1990), without considering the possibility of selection bias. In contrast we report that fatigue as a symptom is more common in social class groups other than the highest category – the highest group reports the least fatigue. By contrast, a positive socio-economic gradient can only be discerned for fatigue as diagnosed by the doctor. This suggests that there exist social class differences in medical recognition of fatigue. A similar finding is reported in a preliminary study of medical utilization, social class and chronic fatigue using the Epidemiological Catchment Area (ECA) data (Price *et al.* 1990).

We found striking dissimilarities in the associations examined for the presentation and diagnosis of fatigue *versus* the symptoms of fatigue. The results illustrate that of all those attending the general practitioner who reported symptoms of fatigue, only 13% actually presented with a complaint of fatigue to the doctor. The decision as to which symptom to present to the doctor may be an arbitrary one, and, as indicated by the current survey, may introduce a social class bias.

As in other surveys, there was a strong association between persistent fatigue (MDE criterion of fatigue) and psychosocial morbidity as assessed by the CES-D score. The only discrepancy is the weaker association between the medical recording of fatigue and the CES-D score, which was only significant for men. The implication is that the practitioner is more willing to diagnose males rather than females as

fatigued. In contrast, the doctor appears to preferentially diagnose depression in women, perhaps reserving the more neutral category of fatigue for men. This may, once again, reflect the social stigma of psychological disorders.

We calculated the population attributable risk of psychological disorder and fatigue to be 37.3% – in other words if psychological disorders could be totally prevented the number of fatigued patients presenting to general practitioners would decrease by that amount. Similar proportions have been reported in several small retrospective case note studies carried out in American primary care (Morrison, 1980; Sugarman & Berg, 1984). These figures, albeit substantial, are rather lower than those suggested by studies that have assessed in detail the relative diagnostic yield of physical and psychological investigations in fatigued patients (Kroenke & Mangelsdorff, 1989; Valdin *et al.* 1989; Lane *et al.* 1990; McDonald *et al.* 1993). However, these represent more selected samples, for example of a special fatigue clinic, or ambulatory medical care. Several surveys of more selected fatigue patients, those labelled as CFS in hospital care, find very high rates of psychological disorder (see Abbey & Garfinkel 1990; David, 1991 for reviews), in excess of those found in controls with chronic medical conditions. By comparing these selected studies of CFS with the results described above it would seem that the diagnosis of CFS appears to select for psychological morbidity, as noted elsewhere (Katon & Russo 1992; Pawlikowska *et al.* 1994).

In specialist clinics, be they for CFS or major psychiatric disorders, there is a strong and consistent relationship between chronic fatigue and major psychiatric disorder. There are reported high rates of fatigue in patients with major psychiatric disorders, and high rates of psychiatric disorders in patients with chronic fatigue (Wessely, 1994). A survey in primary care cannot provide information on aetiology, but it can highlight the possible selection bias when extrapolating from studies conducted on specialist clinic samples.

Although the risk of fatigue increases at least seven-fold between the lowest and highest categories of CES-D scores, the absolute figures show that fatigue is not characteristic of depression, except perhaps in the most severely depressed cases. The relationship between

fatigue and other non-psychological diagnostic categories confirm that it is not a discriminating symptom for depression either.

Of those presenting to the doctor with a principal complaint of fatigue, most received an alternative diagnosis. Only a minority were left with a diagnosis of fatigue, or a fatigue syndrome such as psychasthenia or spasmophilia (Table 5). A similar finding can be inferred from other studies. Although between 10 to 30% of those attending primary care have significant fatigue lasting more than a few weeks, it is recorded as a 'diagnosis' in only 1 to 2% of primary care consultations (Morrell, 1972; Morrison, 1980; OPCS, 1981; Sugarman & Berg, 1984). Thus, the majority of those attending with fatigue received an alternative diagnosis.

The nature of this small residual category for whom the doctor is only able to confirm fatigue, rather than supply an explanation, remains unclear. One possibility is that this subgroup have a similar diagnostic profile to the majority, but the diagnosis has been missed by the doctor. There is some evidence in favour of this. It is known that both British and American general practitioners frequently fail to diagnose relevant psychological disorder in patients presenting with somatic symptoms such as fatigue (Goldberg & Huxley, 1992). There is little reason to suspect that French doctors are more accurate in the detection of psychological disorder. One can also postulate that a substantial proportion of this subgroup are referred for specialist evaluation. Evidence from detailed studies of such samples in hospital practice confirms high rates of psychological morbidity (Wessely & Powell, 1989; Katon & Russo, 1992).

Alternatively, these cases may represent a separate diagnostic category of fatigue, exemplified by the return of the concept of neurasthenia in ICD-10. It has been argued that patients who present with fatigue and little else, can be conceptualized as having a psychological disorder that lies between anxiety and depression, or alternatively, that it is an incomplete resolution of previous episodes of those disorders (Ormel *et al.* 1990; Goldberg & Huxley, 1992).

There is also considerable interest at present in the subject of the cultural aspects of fatigue syndromes. Looking at French diagnostic practice it appears that neither CFS nor 'ME' have

taken root, at least not yet (see Rubinstein, 1991). However, the extremely strong association between psychasthenia and fatigue suggests that psychasthenia (originally described by Pierre Janet (1911) as a fatigue neurosis resulting from excessive demands made upon a sufferer's limited supply of psychic energy) is being used as another diagnosis for the severely fatigued patient who does not easily fit into either medical or psychiatric classification systems. Low blood pressure is another diagnosis for the fatigued patient – one that is almost unknown in the English speaking world but extremely popular in Germany and to a lesser extent in France (Payer, 1988; Wessely *et al.* 1990). It is surprising that so little attention has been given to these striking cross national differences in the perception of fatigue and minor psychiatric illness.

How generalizable are these results? First, our study, like all primary care studies of fatigue, is not representative of fatigue in the general population. In a British population survey of those identified as either tired or feeling 'very run down all the time' during the previous 14 days, less than one-fifth had brought the symptoms to medical attention (Wadsworth *et al.* 1971). Secondly, French medical tradition differs in many respects from those in the English speaking countries (Payer, 1988). However, the results are in keeping with the patterns described elsewhere, for example the odds ratios for fatigue in defined medical conditions (Chen, 1986; Wessely, 1989), suggesting the general conclusions may have a wider relevance.

Our results suggest that a consultation for fatigue is commoner in France than in the United States. The 1985 US National Ambulatory Care Survey (NCHS, 1988) found that 0.9% of visits to primary-care physicians were for a complaint of fatigue. Instead, the French experience may be closer to that of the United Kingdom. It should be borne in mind that financial considerations are not a barrier to medical care in France or the United Kingdom, but probably do have an impact on access to care in the United States and could thereby influence the prevalence rates obtained.

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