Fatigue in Primary Care:

Prevalence, Psychiatric Comorbidity, Illness Behavior, and Outcome

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Objectives: ***To identify the prevalence, psychiatric comorbidity, illness behavior, and outcome of patients with a presenting complaint of fatigue in a primary care setting.***
Methods: ***686 patients attending two family medicine clinics on a self-initiated visit completed structured interviews for presenting complaints, self-report measures of symptoms and hypochondriasis, and the Diagnostic Interview Schedule (DIS). Fatigue was identified as a primary or secondary complaint from patient reports and questionnaires completed by physicians.***
Results: ***Of the 686 patients, 93 (13.6%) presented with a complaint of fatigue. Fatigue was the major reason for consultation of 46 patients (6.7%). Patients with fatigue were more likely to be working full or part time and to be French Canadian, but did not differ from the other clinic patients on any other sociodemographic characteristic or in health care utilization. Patients with fatigue received a lifetime diagnosis of depression or anxiety disorder more frequently than did other clinic patients (45.2% vs. 28.2%). Current psychiatric diagnoses, as indicted by the DIS, were limited to major depression, diagnosed for 16 (17.2%) fatigue patients. Patients with fatigue reported more medically unexplained physical symptoms, greater perceived stress, more pathologic symptom attributions, and greater worries about having emotional problems than did other patients. However, only those fatigue patients with coexisting depressive symptoms differed significantly from non-fatigue patients. Patients with fatigue lasting six months or longer compared with patients with more recent fatigue had lower family incomes and greater hypochondriacal worry. Duration of fatigue was not related to rate of current or lifetime psychiatric disorder. One half to two thirds of fatigue patients were still fatigued one year later.***
Conclusions: ***In a primary care setting, only those fatigue patients who have coexisting psychological distress exhibit patterns of abnormal illness cognition and behavior. Regardless of the physical illnesses associated with fatigue, psychiatric disorders and somatic amplification may contribute to complaints of fatigue in less than 50% of cases presented to primary care.***
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FATIGUE is a common problem in primary care medicine. In the United States, the National Ambulatory Medical Care Survey found fatigue to be the seventh most frequent initial complaint in primary care,[1] and in Quebec it is the eighth most frequent diagnosis in primary care.[2] Despite this high prevalence and recent interest stimulated by the controversies surrounding post-viral chronic fatigue syndrome, fatigue as a presenting complaint has received little attention in the medical literature.

Fatigue is a nonspecific symptom of many somatic illnesses, psychological disturbances, and stress reactions and has been found to be associated with several functional somatic syndromes.[3] Most review articles[4-10] and research reports on fatigue in primary care[11-15] suggest that the majority of fatigue patients have psychological or emotional problems. In one study, two thirds of the complaints of fatigue in specialized referral clinics were attributed to exaggerated perceptions of physical symptoms resulting from coexisting psychiatric disorders.[16] However, there is no study of lifetime and current psychiatric comorbidity in primary care patients complaining of fatigue. While fatigue has been associated with increased health care utilization and disability,[13, 14] there has been no controlled study to date of illness cognition and behavior in patients presenting with fatigue in primary care.

In this paper we examine the prevalence of the complaint of fatigue in a large sample of patients attending two general hospital family medicine clinics. We compare the psychiatric comorbidity and illness behavior of patients who have fatigue with those of patients who do not have fatigue. We also determine how patients whose chief complaint is fatigue differ from patients for whom fatigue is a subsidiary complaint. If fatigue complaints among some patients represent only a minor symptom associated with otherwise prominent somatic illness, fatigue as a subsidiary complaint may be less closely associated with psychiatric morbidity, hypochondriasis, and other "abnormal" illness behaviors than is fatigue as a chief complaint. Primary fatigue may be more closely related to exaggerated perceptions of physical symptoms than is minor fatigue.

In retrospective studies, fatigue of longer duration has been found to be associated with greater psychiatric morbidity.[11] To identify patterns of symptoms and illness behavior that may contribute to chronicity, we also compare patients whose fatigue has lasted more than

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six months with patients who have more recent fatigue.

Finally, because many experiences of fatigue are likely to be multicausal, involving psychiatric, somatic, and symptom perception processes, we compare fatigue patients who have high levels of depressive symptoms with fatigue patients who do not have marked depression, and with nonfatigue clinic patients.

METHOD

Setting and Sample

The settings for this study were two adjacent university-affiliated general hospital family medicine clinics in an ethnically diverse inner-city district of Montreal. Consecutive patients between the ages of 18 and 75 years, able to speak and read English or French and attending one of the clinics on a self-initiated visit for a new problem, were asked to participate. Of 1,366 potential subjects who met inclusion criteria, 699 or 51% agreed to participate and completed all measures. Although we cannot exclude a possible sampling bias toward people more willing to discuss their illness experiences, sociodemographic characteristics of the sample were comparable to those of the clinic population as a whole. The mean age was 44.4 years ± 16.6 SD; mean years of education, 12.5 ± 4.0 SD; and average household income, $24,423. The gender ratio of patients enrolled in the study (58% female) was comparable to that of all the patients eligible for inclusion (55% female). One half of the sample was currently married. Reasons for refusal have not been thoroughly investigated. It is likely, however, that refusals may have been due to the length of the research interview (about two hours). Also, people disgruntled with the health care system may have been more likely to refuse to participate, and debilitated or frail patients may have found the study too demanding to participate. We acknowledge these potential sources of bias, but do not believe that they greatly invalidate our description of fatigue in primary care.

One year after their initial interview, all traceable subjects who agreed were reinterviewed about new symptoms, visits to health care professionals, and illness attitudes. Of 686 patients eligible for the second interview, 637 were traceable. Of these, completed data were obtained for 543 or 85.2%.

Measures

Presenting symptoms, symptom explanations, numbers of visits to a doctor in the preceding 12 months, and sociodemographic data were obtained by a semistructured interview conducted by trained interviewers.

Recent life events were rated by a 12-item checklist drawn from the Quebec Health Survey.[17]

Current depressive symptoms were determined by the Center for Epidemiologic Studies Depression scale (CES-D), a 20-item scale with established reliability and validity.[18] A score of 16 or above on the CES-D has been used in screening for depressive disorders in the community.[19]

Current somatic symptoms were measured with a modified version of the SCL-90 Somatization scale.[20] This is a list of 12 common somatic symptoms in which we changed the response categories from symptom frequency to symptom duration to match the response categories of the CES-D. In previous studies we have found this scale to be a reliable($\alpha = 0.80$, $N = 686$) and valid indicator of somatic distress.[21]

Illness worry was measured by a nine-item scale using questions adapted from the Illness Behavior Questionnaire.[22] Similar to the Whiteley Index of hypochondriasis,[23] the Illness Worry scale measures the tendency for people to worry about being ill, to be convinced they are ill, and to feel more sensitive to pain and more vulnerable to illness than are others. The Illness Worry scale has moderate internal reliability (nine items, $\alpha = 0.70$), correlates at $r = 0.83$ with the Whiteley Index, and shows convergent and discriminant validity with other measures of illness cognition.[24] The belief that one has or is vulnerable to a serious emotional problem was measured by the Emotion Worry scale (eight items, $\alpha = 0.81$), which consists of items constructed to parallel the Illness Worry scale.

Psychiatric diagnoses were ascertained with the Diagnostic Interview Schedule (DIS), version III-A, a structured psychiatric interview for making DSM-III diagnoses that can be administered by trained lay interviewers.[25] For ease of administration, the DIS was shortened by retaining only the sections necessary for making the diagnoses of somatization disorder, affective and anxiety disorders, schizophrenia, and organic mental disorder (13 subjects with the latter two diagnoses were excluded from the analysis to reduce unreliable responses to the study questionnaires).

Lifetime history of medically unexplained symptoms was measured by the Somatic Symptom Index (SSI) of the DIS, a count of the 37 somatic symptoms from the somatization section of the DIS. Escobar et al.[26] have advocated criteria for "subsyndromal somatization disorder" of four medically unexplained symptoms for men and six for women (denoted SSI 4,6).

Patients completed the Symptom Interpretation Questionnaire (SIQ), a reliable and valid scale measuring causal attributions for common physical symptoms.[21, 27] We used the forced-choice version of the SIQ, which asked subjects to choose among somatic, psychological, or environmental explanations for each of 13 symptoms. Symptom attributional style has been shown to contribute to the somatization and psychologization of distress in primary care.[27]

A chart review determined the severity of past and current organic disease and the total number of visits

and discrete symptoms over a 12-month period following the initial interview. The severity of organic disease was rated according to the Revised Seriousness of Illness Rating Scale (R-SIRS), a list of 137 common medical conditions ordered by severity. The R-SIRS is an ordinal-level scale that reliably measures current views on illness seriousness.[28] When a symptom or a problem was not listed in the R-SIRS, it was assigned a value based on similarity to a condition in the list. While the R-SIRS included a number of psychiatric disorders, these were not scored in order to produce an index of only somatic disease. The chart review also determined the proportion of fatigue cases in which a somatic contributor was considered significant in the reviewer's judgment.

At the one-year follow-up interview, all symptom and illness cognition self-report measures were repeated, including the CES-D, the SCL-90 Somatization scale, the Illness and Emotion Worry scales, and the SIQ, and questions based on the somatization and depression sections of the DIS were asked.

Procedure

Fatigue as a presenting complaint was identified in two ways: 1) patients' mention of fatigue or closely related terms, including feeling "tired" or "drained" in response to the interview question, "Why did you come to see the doctor today?" and 2) mention of fatigue as a presenting complaint in a questionnaire completed by the physician after the visit. In 56% of the cases, fatigue was mentioned by the patient alone, and in 12% of the cases, by the physician alone. In the remaining 32% of cases, fatigue was noted as a presenting complaint by both patient and physician.

Patients were classified as presenting fatigue as either a chief complaint or a subsidiary complaint, based on their answers to the question, "Was fatigue the most important reason why you decided to see the doctor?" Patients who did not spontaneously mention fatigue were considered to have fatigue as a subsidiary complaint.

Patients who had fatigue for more than six months were classified as having "chronic" fatigue, while those with a duration of fatigue of less than six months were classified as having "recent" fatigue. Fatigue of at least six months' duration is a major criterion of the Centers for Disease Control (CDC) case definition of chronic fatigue syndrome (CFS).[29]

No specific clinical examination for fatigue was conducted at the one-year follow-up. Instead, we used the responses to two questions to indicate the resolution of fatigue. The SIQ includes the question, "Have you felt fatigued in the last three months?", and the depression section of the DIS includes the question, "Have you been tired for more than two weeks in the past 12 months?" These measures should be considered conservative, since fatigue of even mild severity would be likely to prompt a positive answer to the SIQ question, and often to the DIS-derived question.

Data Analysis

Chi-square was used to test for significant differences between fatigue patients and other clinic patients on dichotomous variables. Significant differences between groups in interval level variables were determined by t-test. For analyses comparing fatigue patients with depression, fatigue patients without depression, and nonfatigue control patients, analysis of variance was used. Statistical significance was accepted when p was < 0.05. No adjustment to alpha levels was made for multiple tests. Data in text and tables are presented as mean $\pm$ SD.

RESULTS

Prevalence and Duration of Fatigue

Among the 686 patients, 93 (13.6%) presented with fatigue. Fatigue either was the only complaint or was considered the major reason for consultation in 49.5% of the cases and was a subsidiary complaint in 51.5% of the cases. Thus, the prevalence of fatigue as the primary major complaint in this sample was 6.7%.

Of the 80 patients for whom the precise duration of fatigue was known, 22.5% had been fatigued for less than one month, 36.3% from one to six months, 17.5% from six to 12 months, and 23.7% for more than one year. Following a chart review, the remaining 13 patients could be classified as fatigued for roughly less than six months or more than six months. In total, 54 (58%) had experienced fatigue for less than six months and 39 (42%) for six months or longer.

Characteristics of Patients with Fatigue

In Table 1, patients who had fatigue are compared with the remaining clinic sample on sociodemographic characteristics, severity of physical illness in past medical history, severity of current somatic symptoms, and recent stress.

There was no difference between fatigue and nonfatigue patients in gender, age, education, or income. Patients with fatigue were more likely to be working full or part time and to be French Canadian.

Patients complaining of fatigue suffered from no more severe physical illnesses than did patients without fatigue and, in fact, had significantly less severe illnesses at the time of the initial visit. Fatigue patients received lower scores on the R-SIRS for health problems presented on the first visit.

A careful review of the medical charts of fatigue patients over the one-year follow-up period showed that 44% had experienced physical illnesses consistent

TABLE 1

Sociodemographics, Severity of Illness, and Stress among Patients with and without Fatigue as a Presenting Complaint

	Fatigue ($N = 93$)	No Fatigue ($N = 593$)	χ^2 or t-test p Value
Sociodemographics			
Gender — female	65.6%	57.3%	NS*
Age — mean ± SD	43.2 ± 16.0 years	44.6 ± 16.7 years	NS
Education — mean ± SD	12.2 ± 4.1 years	12.5 ± 4.0 years	NS
Income category (1 to 9) — mean ± SD	5.2 ± 1.9	4.9 ± 2.0	NS
Working full or part time	59.1%	46.1%	0.02
French Canadian	42.0%	27.8%	0.02
Severity of illness			
Severity of physical illness in past history (1 to 137) — mean ± SD	72.8 ± 42.6	80.3 ± 38.3	NS
Severity of illness presented at time of initial visit (1 to 137) — mean ± SD	36.3 ± 45.8	49.3 ± 43.2	0.01
Stress			
Perceived stress in the last 3 months (0 to 10) — mean ± SD	6.7 ± 2.3	5.8 ± 2.8	0.001
Number of life events in the last 3 months — mean ± SD	1.2 ± 1.6	1.2 ± 1.5	NS

*NS = not significant.

with a feeling of fatigue over that time.[4-6] The most common conditions were infections (12 cases), chronic obstructive pulmonary diseases (seven cases), cardiovascular diseases (four cases), and medical complications of alcohol or drug abuse (six cases).

Patients with fatigue reported more subjective stress in the past three months than did the control group, but there was no difference in the numbers of stressful life events experienced within the last three months.

Psychiatric Comorbidity

In Table 2, patients with fatigue are compared with the remaining clinic sample on lifetime and current psychopathologic factors. The rate of lifetime diagnosis of major depression or anxiety disorders identified by the DIS was much higher in patients with fatigue than in other clinic patients. Almost one half of fatigue patients reported a history of major depression or anxiety during their lifetimes. The rate of lifetime major depression for fatigue patients was over twice that of the nonfatigue population. Similarly, during the last year one fifth of the fatigue patients had experienced at least one episode of major depression, versus about one tenth of the controls. Only 16 fatigue patients or 17.2% were currently depressed (major depression according to the DIS), compared with 8.8% of the control patients. Fatigue patients also scored significantly higher on the CES-D ($\bar{X} = 17.6 \pm 11.2$ SD vs. $\bar{X} = 12.3 \pm 10.3$ SD, $p = 0.001$). All 16 fatigue patients who received a current psychiatric diagnosis according to the DIS were depressed.

The prevalence of somatization disorder among patients with and without fatigue, according to the DSM-III criteria, was very low (1% in each group). There also was no difference in the prevalence of subsyndromal somatization disorder among patients with and without fatigue according to the SSI 4,6.[25] Anxiety disorders and dysthymia accounted for the remaining cases of lifetime psychopathologic conditions. Rates of phobias, panic disorder, obsessive-compulsive disorder, and dysthymia were comparable for fatigue and nonfatigue patients.

Illness Cognition and Symptom Attribution

Somatic symptoms, illness worry, and attributions for common somatic symptoms are reported in Table 3.

TABLE 2

Psychiatric Comorbidity among Patients with and without Fatigue as a Presenting Complaint

	Fatigue ($N = 93$) (%)	No Fatigue ($N = 593$) (%)	χ^2 p Value
Lifetime prevalence			
Diagnosis of major depression or anxiety disorder	45.2	28.2	0.001
Major depression	32.3	15.7	0.001
Dysthymic disorder	5.4	5.9	NS*
Panic disorder	2.2	0.8	NS
Phobias	3.2	5.7	NS
Obsessive-compulsive disorder	3.2	2.9	NS
Somatization disorder	1.1	1.0	NS
Subsyndromal somatization disorder	19.4	16.2	NS
Recent prevalence			
Major depression within last year	20.4	11.3	0.02
Major depression within last month	17.2	8.8	0.02

*NS = not significant.

TABLE 3

Medically Unexplained Somatic Symptoms, Illness Worry and Emotion Worry, and Symptom Attributions among Patients with and without Fatigue as a Presenting Complaint

	Fatigue ($N = 93$) (Mean ± SD)	No Fatigue ($N = 593$) (Mean ± SD)	t-test p Value
Medically unexplained symptoms			
Modified SCL-90* Somatization scale	8.2 ± 6.1	5.4 ± 5.8	0.001
Number of unexplained somatic symptoms on DIS†	3.9 ± 3.4	3.0 ± 3.0	0.01
Illness worry and emotion worry			
Illness Worry scale (0 to 9)	1.7 ± 1.6	1.5 ± 1.8	NS‡
Emotion Worry scale (0 to 8)	1.8 ± 2.2	1.3 ± 1.8	0.05
Symptom attributions			
Somatic attribution subscale (0 to 13)	3.2 ± 2.1	2.9 ± 2.1	NS
Psychological attribution subscale (0 to 13)	4.8 ± 2.7	4.0 ± 2.7	0.01
Normalizing attribution subscale (0 to 13)	4.9 ± 2.5	6.0 ± 2.7	0.001

*See text for explanation.
†DIS = Diagnostic Interview Schedule.
‡NS = not significant.

Fatigue patients reported more current somatic symptoms than did other clinic patients on the modified SCL-90 Somatization scale and more medically unexplained symptoms on the somatization section of the DIS. Patients with fatigue scored no higher on the Illness Worry scale but significantly higher on the Emotion Worry scale.

Patients with fatigue made more psychological attributions and fewer normalizing attributions for common somatic symptoms than did the other patients. Fifty-five patients (67.1%) of the 82 who had mentioned fatigue as a presenting symptom during the interview acknowledged a psychosocial contribution to this symptom by spontaneously attributing their fatigue to a psychosocial cause or by answering "yes" to the question, "Do you think that worries or personal problems could have had anything to do with bringing the fatigue on?" However, only 44.1% of all fatigue patients were recognized by their physicians as being psychosocially distressed (defined as any mention of a psychosocial problem in the chart during the follow-up period).

In review, fatigue was associated with higher levels of current and lifetime somatic distress, with greater emotion worry, and with the tendency to attribute common somatic symptoms to illness processes more often than to environmental causes. Most fatigue patients willingly acknowledged psychosocial causes for their symptoms.

Health Care Utilization and Outcome

Despite higher levels of somatic distress and emotion worry, fatigue patients were no different from nonfatigue patients in number of visits to the doctor during the year preceding the interview [$\bar{X} = 4.3$ vs. $\bar{X} = 4.0$, not significant (NS)]. Complete data after the one-year follow-up were obtained for 67 of the 93 patients initially presenting with fatigue. This attrition rate of 28% is slightly higher than the rate for the total patient population (21%). A simple attrition analysis showed that patients lost to follow-up did not differ from their counterparts on sociodemographic characteristics, past and current severity of somatic illness, and lifetime psychiatric diagnoses, but they were more likely to be currently depressed (34.9% vs. 10.4%, $p = 0.01$). This tendency for depressed patients to be lost to follow-up was observed for the sample as a whole. One fatigue patient suffering from concurrent severe ischemic heart disease and major depression died during the year following the index visit.

Patients with fatigue did not differ from other clinic patients in number of visits to the clinic ($\bar{X} = 3.4$ vs. $\bar{X} = 4.1$, NS) or to health care professionals ($\bar{X} = 7.9$ vs. $\bar{X} = 7.1$, NS) during the follow-up year, and were no more likely to have been hospitalized (16.7% vs. 16.4%, NS). Despite their higher levels of past and current psychiatric disorders, fatigue patients were no more likely to have been treated by a mental health care professional than were other patients (10.6% vs. 11.4%, NS).

When asked at the 12-month follow-up, "Have you felt fatigued in the last three months?", 30% of patients presenting with fatigue a year before, compared with 44.4% of the control patients, answered "no." Similarly, when asked the DIS depression question, "Have you been tired for more than two weeks in the past 12 months?" at follow-up, 49% of fatigue patients versus 75.2% of the control patients answered "no." On the basis of responses to these two questions, we estimated

that between one third and one half of the fatigue patients were no longer fatigued 12 months after their presentations. Patients considered to be recovered by answering "no" to the question, "Have you felt fatigued in the last three months?", reported lower initial levels of worry about having an emotional problem than did patients rated not recovered ($\bar{X} = 0.75 \pm 0.7$ SD vs. $\bar{X} = 1.9 \pm 2.1$ SD, $p < 0.05$).

For both fatigue and nonfatigue patients, scores on the CES-D after one year were lower than they were on the first interview and did not differ between groups ($\bar{X} = 9.0$ vs. $\bar{X} = 8.7$, NS). The number of symptoms on the SCL-90 Somatization scale was much lower than it was at the index visit, but remained higher for fatigue patients than for nonfatigue patients ($\bar{X} = 4.3 \pm 4.5$ SD vs. $\bar{X} = 3.2 \pm 4.1$ SD, $p < 0.05$). Levels of illness worry and emotion worry and attributions on the SIQ at follow-up did not differ significantly between fatigue and nonfatigue patients.

Fatigue as a Major or a Subsidiary Complaint

Patients complaining of fatigue as the chief problem differed very little from patients with fatigue as a subsidiary complaint. No difference was found between the two groups in sociodemographic characteristics, severity of past and current illness, lifetime and current psychiatric comorbidity, illness cognition or behavior, and outcome. Patients with fatigue as a chief complaint did have significantly fewer years of education. ($\bar{X} = 11.3 \pm 4.3$ SD vs. $\bar{X} = 13.0 \pm 3.7$ SD, $p = 0.04$). Patients with fatigue as a major complaint and those with fatigue as a subsidiary complaint did not differ on any follow-up measure of symptoms or illness cognition.

Recent or Chronic Fatigue

Patients with recent fatigue and those with chronic fatigue were similar in gender distribution and age. Chronic fatigue patients reported significantly less income than did patients with fatigue lasting less than six months ($\bar{X} = 5.7 \pm 2.0$ SD vs. $\bar{X} = 4.6 \pm 1.6$ SD, $p = 0.01$). The degrees of seriousness of past and current illness did not differ significantly among groups, although there was a tendency ($p = 0.18$) for higher ratings for patients with chronic fatigue. Other factors associated with the chronicity of fatigue are presented in Table 4.

Chronicity was not related to lifetime major depression or anxiety disorders, or to current depression (DIS and CES-D scores). There was a trend ($p = 0.12$) for a greater prevalence of subsyndromal somatization disorder among patients with longer-lasting fatigue.

Patients with chronic fatigue tended to report slightly more unexplained somatic symptoms on the DIS and the SCL-90 and presented more somatic symptoms during follow-up. They scored higher on the Illness Worry scale but not on the Emotion Worry scale, and tended to make fewer psychosocial attributions for their fatigue than did patients with recent fatigue (55.5% vs. 74.5%, $p = 0.07$). There was no difference between groups in rate of physician recognition of psychosocial distress (46.2% vs. 42.6%, NS).

Amounts of health care utilization did not differ between groups of fatigue patients. Outcome of fatigue

TABLE 4

Characteristics of Patients with Fatigue Lasting Less than Six Months or More than Six Months

	<6 Months ($N = 54$)	>6 Months ($N = 39$)	χ^2 or t-test p Value
Psychiatric diagnoses			
Lifetime diagnosis of major depression or anxiety disorder	44.4%	48.7%	NS*
Current major depression	18.5%	15.4%	NS
Subsyndromal somatization disorder	13.0%	25.6%	NS (0.12)
Symptoms			
CES-D† — mean ± SD	17.6 ± 12.5	17.3 ± 9.1	NS
Modified SCL-90‡ Somatization scale — mean ± SD	7.5 ± 5.9	9.1 ± 6.4	NS
Number of unexplained somatic symptoms on DIS§ — mean ± SD	3.5 ± 2.9	4.2 ± 3.6	NS
Number of new symptoms during follow-up¶ — mean ± SD	3.7 ± 2.4	5.6 ± 5.0	0.05
Illness worry and emotion worry			
Illness Worry scale — mean ± SD	1.5 ± 1.5	2.2 ± 1.7	0.05
Emotion Worry scale — mean ± SD	1.7 ± 2.2	2.0 ± 2.1	NS

*NS = not significant.
†CES-D = Center for Epidemiologic Studies Depression scale.
‡See the text for description.
§DIS = Diagnostic Interview Schedule.
¶Data for 90 patients (52, 38).

TABLE 5

Characteristics of Fatigue Patients with Depression (CES-D* ≥ 16), Fatigue Patients without Depression (CES-D < 16), and Patients without Fatigue

	Fatigue CES-D ≥ 16 (*N* = 42)	Fatigue CES-D < 16 (*N* = 51)	No Fatigue (*N* = 593)	χ^2 or F-test p Value
Psychiatric diagnoses				
Lifetime diagnosis of major depression or anxiety disorder	59.5%	33.3%	28.2%	0.02
Duration and importance of fatigue				
Fatigue for more than 6 months	48.8%	35.3%		NS†
Fatigue as a major complaint	57.1%	43.1%		NS
Stress				
Perceived stress in the last 3 months—mean ± SD	7.9 ± 1.7	5.7 ± 2.2	5.8 ± 2.8	0.001
Number of life events in the last 3 months— mean ± SD	1.4 ± 1.9	1.1 ± 1.4	1.2 ± 1.5	NS
Symptoms				
Modified SCL-90‡ Somatization scale— mean ± SD	11.1 ± 5.9	5.8 ± 5.2	5.4 ± 5.8	0.001
Number of unexplained somatic symptoms on DIS§—mean ± SD	4.9 ± 4.1	3.1 ± 2.3	3.0 ± 5.8	0.02
Subsyndromal somatization disorder	23.8%	15.7%	16.2%	NS
Illness worry and emotion worry				
Illness Worry scale—mean ± SD	2.2 ± 1.6	1.3 ± 1.5	1.5 ± 1.8	0.01
Emotion Worry scale—mean ± SD	3.0 ± 2.4	0.9 ± 1.4	1.3 ± 1.8	0.001

*CES-D = Center for Epidemiologic Studies Depression scale.
†NS = not significant.
‡See text for explanation.
§DIS = Diagnostic Interview Schedule.

was slightly worse in chronic fatigue patients. After one year, only 22.2% of them answered "no" to the SIQ question, "Have you felt fatigued in the last three months?", compared with 35% of recent fatigue patients ($p = 0.26$), and only 37.5% answered "no" to the DIS question, "Have you been tired for more than two weeks in the past 12 months?", compared with 56.8% of the recent fatigue group ($p = 0.25$).

On follow-up measures of illness cognition, patients with chronic fatigue had a higher illness worry ($\bar{X} = 2.8 \pm 1.1$ SD vs. $\bar{X} = 1.9 \pm 1.4$ SD, $p = 0.005$) and made more somatic attributions on the SIQ ($\bar{X} = 3.3 \pm 2.4$ SD vs. $\bar{X} = 2.2 \pm 1.9$ SD, $p < 0.05$) than did patients with recent fatigue.

Depressed and Nondepressed Fatigue Patients

Forty-two patients (45%) scored 16 or above on the CES-D scale, sometimes used as a screening criterion for depression.[19] Of these, one third received a diagnosis of major depression on the DIS. Two fatigue patients with current major depression scored lower than 16 on the CES-D. In Table 5, fatigue patients scoring 16 or above on the CES-D are compared with fatigue patients scoring less than 16 and with other clinic patients.

Fatigue patients with and without depression did not differ significantly on any sociodemographic characteristic. The severities of past and current somatic illnesses were similar in the two groups and did not differ from those of other clinic patients. Depressed patients received a lifetime diagnosis of major depression or anxiety disorder almost twice as often as did the nondepressed patients. Major depression represented 80% of the lifetime psychiatric morbidity of patients currently scoring 16 or above the CES-D scale.

Depression in patients with fatigue was not significantly associated with a longer duration of fatigue ($p = 0.19$) or with fatigue as the major complaint ($p = 0.18$), though tendencies in these directions were apparent. Although the numbers of stressful life events were similar among groups, perceived stress during the past three months was higher among depressed fatigue patients than among nondepressed fatigue patients or other patients.

Depressed patients experienced more medically unexplained somatic symptoms. Symptoms of the SCL-90 Somatization scale significantly associated with depression among fatigue patients were lump in throat, nausea, dizziness, chest pain, and hot and cold spells. Headaches, low back pain, and muscle soreness were not reported more often by depressed patients. Patients with high scores on the CES-D also scored higher on both the Illness Worry and the Emotion Worry scales.

Fatigue patients scoring lower than 16 on the CES-D did not differ from the nonfatigue clinic patients on measures of subjective stress, symptoms, lifetime and current psychiatric diagnoses, or illness cognition.

Most patients with high CES-D scores (75.7%) acknowledged a psychosocial influence on their fatigue,

but the physicians' recognition of a psychosocial problem during the follow-up reached only 54.8%. All patients but one receiving a diagnosis of major depression on the DIS spontaneously made or accepted when asked a psychosocial attribution for their fatigue.

The overall outcome of fatigue patients scoring 16 or above the CES-D was similar to that of their nondepressed counterparts: 20.8% answered "no" to the SIQ question, "Have you felt fatigued in the last three months?", versus 34.9% in the nondepressed fatigue group (NS), and 54.5% answered "no" to the DIS question, "Have you been tired for more than two weeks in the past 12 months?", versus 46.2% in the nondepressed fatigue group (NS).

The validity of follow-up data is hampered by the overrepresentation of depressed subjects among fatigue patients lost to follow-up. Nonetheless, after one year, the emotion worry remained higher in patients with depressive symptoms at the index visit ($\bar{X} = 2.1 \pm 1.8$ SD, vs. $\bar{X} = 0.9 \pm 1.5$ SD, $p = 0.007$). No other measure of symptoms or illness cognition completed on follow-up distinguished between fatigue patients depressed and nondepressed at initial presentation.

DISCUSSION

Fatigue is a common health problem. Studies of the epidemiology of fatigue indicate a community prevalence of between 10 and 20%.[30-32] In primary care, fatigue as an isolated symptom or diagnosis accounts for 1–3% of the visits to general practitioners.[2, 11, 12, 31] When studies are oriented specifically to the detection of fatigue and include systematic questioning about the condition, the proportion of patients who report fatigue rises to 20–25%.[15, 33] Our study relied on patients' initiative in offering fatigue as a presenting complaint and physicians' initiative in recording patients' complaints of fatigue and thus may better represent the natural presentation of the problem in primary care. The prevalence rates that we observed of 13.6% for fatigue in general and 6.7% for fatigue as a chief complaint may better reflect the scope of the problem in an average urban North American primary care practice.

Many studies of fatigue have attempted to partition patients into those whose fatigue is organic in origin and those for whom psychosocial causes are presumed.[11-14, 34] These studies are often inconsistent due, perhaps, to arbitrary decisions of researchers in attributing fatigue to a single physical or psychological disturbance. For example, fatigue in primary care is often attributed to viral infection[11, 33] but no simple clinical procedure or routine laboratory test is able to confirm the relationship between infection and the feeling of fatigue.[35] Further, fatigue may result from the cooccurrence of minor somatic diseases (such as mild anemia), psychological disturbance (such as chronic anxiety), and physiologic factors (such as lack of sleep or unusual physical exertion).[5-8] Evidence from community-based and primary care studies also suggests that severity of fatigue is linearly related both to levels of depression and anxiety and to levels of functional somatic symptoms.[13, 15, 32, 34] Thus a distinction between psychological and somatic causes of fatigue is likely to be artificial. Because fatigue is most probably multifactorial, we have chosen to deal not with somatic and psychiatric "causes" of fatigue but with the psychiatric comorbidity and illness behavior of patients presenting a complaint of fatigue to their doctors.

The organic comorbidity of fatigue patients has not been thoroughly assessed in this study. We did not apply to fatigue patients standardized clinical procedure and laboratory investigations. We did, nonetheless, conduct a careful review of the patients' charts over the follow-up year and discovered no severe medical illness unsuspected on first encounter among fatigue patients. Degrees of seriousness of past somatic illness were similar for patients with and without fatigue. Moreover, much previous research has demonstrated the limited yield of diagnostic laboratory tests in isolated fatigue.[12, 15, 16, 35-37]

We found that patients presenting with a complaint of fatigue were not appreciably different from their nonfatigue clinic counterparts in gender, age, education, or marital status. This is consistent with most of the previous studies of fatigue in primary care.[12, 13, 34, 38] Kroenke et al.[15] and Valdini et al.,[39] however, found fatigue to be more prevalent in women. Morrison[11] found more women and fewer married subjects among fatigue patients. We found a higher rate of fatigue among persons working full or part time, and among French Canadians. Differences in the prevalences of fatigue among cultural groups have also been observed by Gutzwiller et al.[31] in Switzerland.

As expected, we found a high level of lifetime psychiatric comorbidity among patients with a complaint of fatigue. Almost one half (45.2%) of fatigue patients had a lifetime diagnosis of major depression and anxiety disorders, compared with only 28.2% of other clinic patients. To our knowledge, this is the first use of the DIS to estimate the rate of psychiatric disorder among patients presenting with fatigue in a primary care setting. Compared with the high number of fatigue patients reporting lifetime disorders, only 17.2% of fatigue patients suffered from a current psychiatric disorder according to DSM-III. Major depression accounted for all of these cases. Prior estimates of the prevalence of current depression among patients with fatigue in primary care have been somewhat higher, from 20 to 56%.[11, 12, 15] None of these studies, however, used the DIS.

Our findings are in contrast to the very high rates of current psychiatric morbidity found among patients with fatigue visiting an internal medicine referral clinic. Manu et al.,[16] using the DIS, found that 66% of patients with a chief complaint of chronic fatigue had

one or more current psychiatric disorders that were considered to be major causes of their fatigue. Major depression was diagnosed in 39% of the patients, dysthymia, in 6%; panic disorder, in 6%; social phobias, in 3%; and somatization disorder, in 15%. A mean of two lifetime DSM-III diagnoses per patient was found. Using the same diagnostic instrument, Katon et al.[40] also found a very high prevalence of lifetime and current psychiatric disorder in patients who had chronic fatigue, compared with patients who had rheumatoid arthritis: lifetime history of major depression, 76.5%; panic disorder, 29.6%; somatization disorder, 45.9% (20.4% when excluding seven chronic fatigue symptoms); current major depression, 15.3%. These high rates of psychiatric morbidity are likely to reflect the tertiary care setting. Studies of patients with functional somatic syndromes in tertiary care show much more psychiatric morbidity than do studies done in the community or in primary care settings.[3] Psychological distress may contribute more to the propensity to seek specialized care than to the experience of fatigue. More than 80% of the patients presenting with fatigue in our study did not suffer from current major depression. Thus, while psychiatric comorbidity is common in fatigue patients, it is far from universal.

Two thirds (67.1%) of the fatigue patients, when asked directly, acknowledged a psychosocial contribution to their fatigue. Despite psychosocial attributions and higher levels of past and current psychiatric disorders, fatigue patients were not more likely than controls to have received treatment by mental health professionals. This may reflect the underrecognition of psychiatric morbidity by primary care physicians.[41, 42]

Patients with fatigue reported more somatic symptoms on the modified SCL-90 Somatization scale and more unexplained symptoms on the somatization section of the DIS than did other clinic patients. A high prevalence of nonspecific somatic symptoms has been associated with the complaint of fatigue in community studies[32] and in studies of fatigue in primary care.[13] However, only one of our fatigue patients (1%) met criteria for somatization disorder, and the prevalence of subsyndromal somatization disorder according to SSI 4,6[26] was not significantly higher in fatigue patients than in patients without fatigue. The 15% prevalence of DSM-III somatization disorder reported by Manu et al.[43] among patients with chronic fatigue may again reflect the greater severity and chronicity of patients seen in the specialized clinic setting of their study.

The illness worry of fatigue patients was not higher than that of other clinic attenders. Thus hypochondriacal beliefs are unlikely to contribute greatly to the complaint of fatigue. However, fatigue was associated with a greater self-perceived emotional vulnerability (as measured by the Emotion Worry scale), and fatigue patients tended to attribute common somatic symptoms to illness as opposed to environmental causes more often than did control patients. This suggests that certain patterns of illness cognition involving worries over the instability of one's emotions and pathologic symptom attributions may play a role in the propensity to complain of fatigue.

Health care utilization has been shown to be increased in patients complaining of fatigue.[13, 14] This was not observed by Kroenke et al.[15] Although our study is limited by the overrepresentation of depressed subjects among fatigue patients lost to follow-up, it suggests that amounts of health care utilization are not essentially different among the patients with and without fatigue, as well as among the different groups of fatigue patients.

The outcome of fatigue in primary care is generally found to be poor. In three prospective studies, the rate of improvement over one year varied from 28% to 66%.[13-15] We estimated, based on conservative criteria, that between one third and one half of our fatigue patients were free of fatigue after one year. Patients with fatigue lasting longer than six months had slightly worse outcomes, with only 20 to 40% of them being free of fatigue after one year.

Patients with prominent somatic illnesses often feel fatigued but would probably complain first of discrete or localized symptoms consistent with their illnesses. If presented to their doctors, fatigue would likely be a subsidiary complaint for these patients. It could be argued, then, that fatigue as a subsidiary complaint should be less closely associated with psychiatric morbidity or abnormal illness behavior than should fatigue as a chief complaint. To test this hypothesis, we compared patients having fatigue as the major complaint with patients having fatigue as a subsidiary complaint. No significant difference was found between these two groups. Even among patients with a chief complaint of fatigue in this setting, more than 80% were not suffering currently from DSM-III major depression. These findings suggest that fatigue secondary to other more prominent illnesses may be no less attributable to psychiatric distress, emotional vulnerability, and illness worry than is fatigue as the primary symptom.

Fatigue with a longer duration is thought to be associated with a greater prevalence of psychological problems.[11] We found no major difference in psychiatric morbidity between patients with fatigue lasting less or more than six months. A duration of six months in defining chronic fatigue is arbitrary and may be of little value for fatigue patients seen in primary care. However, patients with chronic fatigue experienced more somatic symptoms, had greater illness worry, tended to have lower recovery rates, and reported lower family incomes. They also made more somatic attributions for common symptoms and had even higher illness worry on follow-up. These differences do not appear to be explained by a higher prevalence of psychiatric dis-

orders or severity of somatic illnesses. They suggest a greater somatic focus in patients with chronic fatigue. Persistence of fatigue may be related to exaggerated health concerns and fewer material resources. This points to need for a social – psychological approach to chronicity that examines factors other than psychiatric comorbidity.

Of all patients with fatigue, 45% had high levels of depressive symptoms (scored 16 or above on the CES-D scale). As expected, patients with fatigue who also had higher levels of depressive symptoms were more likely than those with fewer symptoms to have a lifetime diagnosis of major depression or anxiety disorder. They also experienced more somatic symptoms and expressed greater illness worry and feelings of emotional vulnerability than did nondepressed fatigue patients. Fatigue patients scoring lower in the CES-D (55%) were indistinguishable from other clinic patients on psychiatric morbidity, illness worry, and illness behavior. Thus less than half of fatigue patients gave any evidence that psychiatric disorder and somatic amplification may have contributed to their fatigue. Our findings suggest that the CES-D may be a sensitive but nonspecific screening instrument for depression, anxiety disorders, and generalized psychological distress in primary care fatigue patients. We conclude that over half of the complaints of fatigue in primary care appear to be unrelated to psychiatric disorder, exaggerated somatic perception, or abnormal illness behavior. This is in contrast to the results of studies of patients with chronic fatigue in tertiary care settings.[16, ,40]

Depression in fatigue patients is unlikely to be "hidden," since three fourths of the patients scoring 16 or above on the CES-D acknowledged psychosocial content to their fatigue. However, the recognition of psychosocial problems by physicians reached only 55%. Kirk et al.[34] found that patients with fatigue are more willing to attribute fatigue to psychosocial causes than are their physicians. This study and ours suggest that, in primary care settings, most depressed patients will accept the opinion that psychosocial factors contribute to fatigue. However, patients may be reluctant to ascribe their physical distress *exclusively* to psychosocial factors since this may call into question the reality of their distress.[44]

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■

REFLECTIONS

The process of "equipping oneself" has no predeterminable limits and is bad psychological policy, anyway; we always need to know and understand a great deal more than we do already and to master many more skills than we possess. The great incentive to learning a new skill or supporting discipline is an urgent need to use it. For this reason, very many scientists (I certainly among them) do not learn new skills or master new disciplines until the pressure is upon them to do so; thereupon they can be mastered pretty quickly. — P. B. MEDAWAR, *Advice to a Young Scientist,* Harper & Row, New York, 1979