

Fatigue as a Presenting Complaint in Family Practice

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The medical records of 176 patients with an isolated diagnosis of fatigue (ICHPPC-7901) were reviewed. The study population represented the experience of four family physicians in private practice and of residents and staff of a university family medicine center in Denver, Colorado, over a 12-month period. Variables included for study were age, sex, family structure, diagnostic testing, duration of symptoms, and associated final diagnosis.

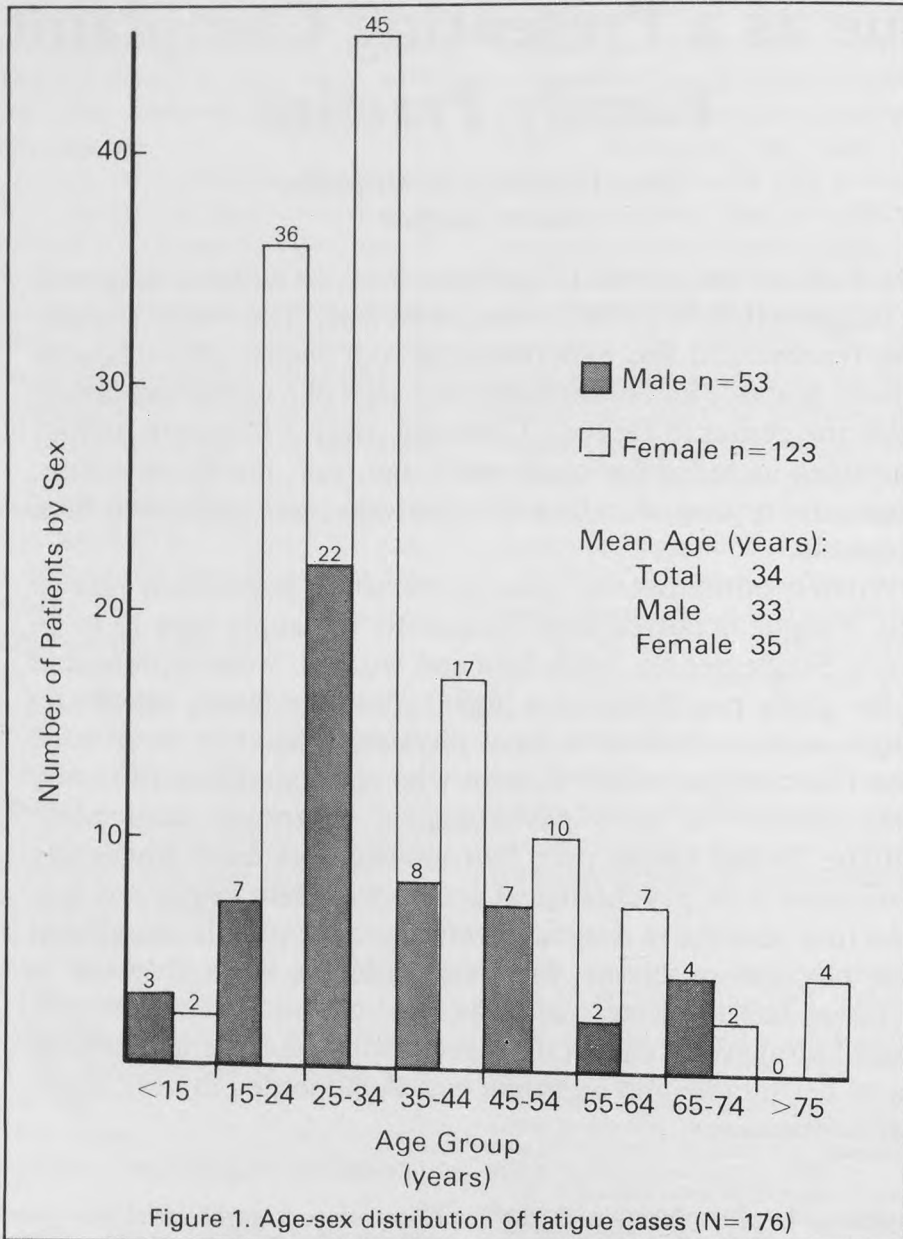
Women outnumbered men in the study population two to one. Fatigue occurred most frequently in people ages 15 to 34 years. Single people, both men and women, were represented in the study population at a higher rate than family members. Single women tended to have physical diagnoses associated with their fatigue, while women who were members of family units tended to have psychological diagnoses associated. Fatigue lasting longer than four months was more frequently associated with psychological problems, while symptoms less than four months in duration were more frequently associated with physical problems. Physical problems were involved in just over half the cases, with the most common being the prolonged viral syndrome. A discussion with the patient regarding his or her fatigue and its origin was documented in only about half of the cases.

The family physician is often faced with the patient who complains of fatigue. There is little true incidence data in the literature regarding this problem. Rockwell and Burr have reviewed the problem of "The Tired Patient" according to differential diagnosis, yet they, like many others, fail to provide any estimate of the frequency of the various causes cited.¹ The uncertainty surrounding the causes of fatigue is demonstrated by the conflicting views presented in the book *Common*

Complaints: a psychiatrist first presents data from 235 "fatigued" patients; 85 percent had nonphysical causes²; an internist then strongly encourages the search for physical causes in such patients, with particular reference to obesity, hypoglycemia, and narcolepsy.³ A Canadian review article estimates (without data source) that 50 percent of all fatigue cases are due to "functional," nonphysical causes.⁴ The family physician, by virtue of his knowledge of and access to the entire family situation, should be in an excellent position to better define the factors involved in a patient's fatigue. This review of patients with the complaint of fatigue was undertaken to delineate these factors within the context of a family practice setting.

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Materials and Methods

Colorado's Family Medicine Information System (FMIS),⁵ which provided the cases of fatigue for review, included over 31,000 active patients in a variety of geographic and practice settings in 1978. A total of 458 patients received a diagnosis of "Fatigue" (ICHPPC-7901) in the 12-month study period. This represented rank order number 42 in the FMIS morbidity index for the year. The cases of fatigue in the three metropolitan Denver practices participating in the FMIS network were

selected for review because of ready access to medical records. The three practices include: (1) a three-man private practice, (2) a solo private practice, and (3) a university family medicine center averaging 4 full-time faculty and 20 residents. These practices generated 220 cases of fatigue during the 12-month study period from a total of 7,600 active patients. The medical records of these patients were reviewed by the author using a prepared checklist of variables. Data analysis was performed with punched cards which were hand

Table 1. Family Setting of Patients With Fatigue

	Number	% Total	Spouse Only	Two Parents and Child	Single Parent and Child
Male, Single	14	8	—	—	—
Female, Single	37	21	—	—	—
Subtotal	51	29	—	—	—
Male, HOH	33	19	12	19	2
Female, HOH	12	7	—	—	12
Female, With Spouse	65	37	31	34	—
Subtotal	110	63	43 (24%)	53 (30%)	14 (8%)
Male Child	6	3	—	4	2
Female Child	9	5	—	8	1
Subtotal	15	8	—	12 (7%)	3 (2%)
Totals	176	100%	43 (24%)	65 (37%)	17 (10%)
HOH=Head of Household					

sorted. This series does *not* include all patients who complained of fatigue. If the diagnosis was clear at the initial encounter, a more refined diagnosis was used. If, however, the source of the fatigue was in doubt at this initial encounter, the diagnostic label of fatigue was applied, and it is *these* cases that comprised the study population.

The primary diagnosis ultimately associated with each case of fatigue was determined by chart review. The cases were then grouped as those with "physical" or "organic" type of diagnosis, those with "psychological" or "functional" type of diagnosis, cases where both types of diagnosis were associated, and cases with no more specific diagnosis. This case sorting was difficult in many instances, since it was based on the medical record alone and follow-up was not always complete or well documented.

Results

The original population of 220 was reduced by 20 percent when chart review revealed errors in coding in 44 cases. For example, when the diagnosis of both fatigue and mononucleosis was made on the same visit, the case was discarded. A total of 176 cases of fatigue as an isolated symptom remained as the study population.

The age-sex frequency distribution of those patients is presented in Figure 1. The peaks in the

young adult age groups are clearly demonstrated, as is the greater than 2 to 1 ratio of females to males. This picture was similar in all three practices. The female predominance was significantly greater than expected from total active patient data during the study period ($\chi^2=11.36$, $P<.01$). However, within individual age groups, the only one significantly over-represented was the 15- to 24-year-old female group as compared with its male counterpart ($\chi^2=7.67$, $P<.01$).

The monthly incidence of cases showed great variations, but there were no discernable seasonal patterns and no differences attributable to sex or age.

Table 1 presents the family setting of the patients with fatigue. Twenty-nine percent of the patients were single adults, 63 percent were adult family members (26 percent head of household and 37 percent spouse), and 8 percent were dependent children. Ten percent of the patients were single parents. Compared to the entire active patient population, single parents were neither over- nor under-represented in the study population. However, single males were represented in the study population significantly more than male heads of household (intact families) ($\chi^2=8.82$, $P<.01$). At the same time, single females were found significantly more often than female spouses from intact, two-parent families ($\chi^2=11.92$, $P<.01$).

Test	Number of Patients	Number of Positive Results	% of Tests Positive
CBC	148	16	11
Urinalysis	102	2	2
SGOT	100	2	2
T ₄	96	4	4
Glucose (either single or glucose tolerance)	80	9	11
Potassium	79	6	7
Sedimentation Rate	75	3	4
Monospot	55	11	20
Chest X-ray	31	3	10
Pregnancy Test	6	1	16
Other	40	3	7
Mean=4.4 tests per patient			

Age (years)	Physical		Psychological		Mixed		Undetermined		Totals	
	M	F	M	F	M	F	M	F	M	F
<15	2	2	1	—	—	—	—	—	3	2
15-24	4	11	3	12	—	5	—	8	7	36
25-34	8	14	13	19	1	8	—	4	22	45
35-44	3	6	3	9	2	1	—	1	8	17
45-54	4	3	2	4	—	3	1	—	7	10
55-64	2	3	—	4	—	—	—	—	2	7
65-74	3	—	1	1	—	1	—	—	4	2
>75	—	4	—	—	—	—	—	—	—	4
Totals	26	43	23	49	3	18	1	13	53	123
Totals both sexes	69		72		21		14		176	
Percent	39		41		12		8		100	

A summary of the most frequently performed diagnostic tests is listed in Table 2. The average number of tests performed was 4.4 tests per patient; the average cost using prevailing charges was \$32.80 per patient. The most frequently positive test was the slide test (Monospot): 20 percent

of patients tested (11 of 55 cases) had a positive result. These were patients for whom the diagnosis of mononucleosis was unsuspected at the initial encounter. As previously stated, patients for whom this diagnosis was suspected and confirmed at the initial encounter were *excluded* from the

Table 4. Associated Physical Diagnoses

Physical Only (N=69)	
Viral Syndrome	27
Mononucleosis	9
Hypokalemia	5
Asthma/COPD	4
Hypothyroidism	3
Hypoglycemia	3
Hepatitis	2
ASHD	2
Hypertension	2
Allergy-Fatigue	2
Diabetes Mellitus	1
Hyperthyroidism	1
Anemia, Iron Deficiency	1
Rheumatic Heart Disease	1
Urinary Tract Infection	1
Strep Pharyngitis	1
Mitral Prolapse	1
Pregnancy	1
Antabuse Ingestion	1
Physiologic	1
Mixed Physical and Psychological (N=21)	
Viral Syndrome	4
Systemic Lupus	2
Obesity	2
Allergy-Fatigue	2
Hypoglycemia	2
Mononucleosis	1
Anemia, Iron Deficiency	1
Peptic Ulcer	1
Congestive Heart Failure	1
Hypokalemia	1
Dietary-Fasting	1
Menorrhagia	1
Sickle Cell Trait	1
Physiologic	1

Table 5. Associated Psychological Diseases

Psychological Only (N=72)	
Depression	31
Anxiety	19
Stress, acute	9
Adjustment Reaction	4
Alcoholism	4
Other	5
Mixed Physical and Psychological (N=21)	
Anxiety	9
Depression	8
Stress, acute	4

to either category. Table 3 is a distribution of these categories by age and sex. Thirty-nine percent of the cases had associated physical diagnoses, 41 percent had associated psychological diagnoses, 12 percent had both kinds of diagnoses associated, and 8 percent had no discernable diagnosis associated. There were no significant differences between the sexes or among age groups in this distribution. Tables 4 and 5 delineate the specific diagnoses categorized as either "physical" or "psychological." The "mixed" cases, where both kinds of diagnoses were identified, are listed in both tables. Again, the specific diagnoses were those of the practicing physicians, so that criteria may have varied among physicians.

Ten of the women in the study were taking oral contraceptives. Two of these had associated physical diagnoses, and two had associated psychological diagnoses. In three cases, both physical and psychological problems presumed to be unrelated to oral contraceptives were noted. Three of these women had no specific cause for their fatigue delineated. None of the cases of fatigue were attributed to the oral contraceptives directly by the study physicians.

The duration of fatigue at the time of seeking medical attention was different in cases with associated physical diagnoses as compared to cases with associated psychological causes. Table 6 shows the significant association of physical diagnosis cases with a shorter duration of symptoms.

Table 7 presents the relationship of sex and family situation to the type of fatigue-associated diagnosis. For males, there was no significant relationship. For females, the single person tended

study population. Positive complete blood count results included those patients found to have anemia or viral syndromes. Positive glucose tests (either single values or five-hour glucose tolerance tests) included those patients with diabetes mellitus and those with hypoglycemia.

Case sorting according to a single physical or psychological diagnosis associated with the fatigue was attempted. The criteria for these diagnoses were those of the practicing physician, while the grouping of cases was carried out by the author alone. Several cases could not be clearly assigned

Table 6. Duration of Symptoms and Associated Diagnoses (N=176*)

Duration of Symptoms	Physical	Psychological	Totals
4 Weeks or Less	39	16	55
1-4 Months	21	27	48
More Than 4 Months	9	29	38
Totals	69	72	141*

$\chi^2=20.88$
 $df=2$
 $P<.01$
 * Thirty-five cases with mixed or undetermined diagnosis associated have been omitted. If all omitted cases are presumed to have psychological diagnoses associated, $\chi^2=26.26$, $df=2$, $P<.01$

to have more associated physical diagnoses; while the adult family member, whether or not she was head of household, whether or not she had children, and whether or not she was employed, more often had associated psychological diagnoses.

Table 8 presents the difference between private practice experience and teaching center experience in terms of associated physical and psychological diagnoses. There are no ready explanations for this difference: age, sex, family structure, employment, Medicaid status—none of these discriminated. Other socioeconomic factors may well explain the differences, as may physician differences. All private physicians are graduates of the University of Colorado residency program.

No significant relationships were found between age or sex alone and type of associated diagnosis. Socioeconomic status variables were not available for study, except for the fact of employment, for which no associations were found.

An initial diagnosis of fatigue is one which presumably calls for refinement and greater specificity. It acknowledges that neither physician nor patient has resolved the problem. Despite the fact that 92 percent of the cases reviewed had one or more diagnoses associated with the fatigue, 51

percent of the cases had no documented follow-up visit or telephone call to the patient to clarify the problem for the patient. The average number of visits per patient was only 1.7.

Discussion

This series of patients demonstrates the variety and frequency of issues that the family physician faces in the evaluation of the fatigued patient. Younger adults presented in greatest numbers for evaluation of fatigue. Twice as many women as men sought medical attention, a significantly greater ratio than that expected from the total active patient population.

Psychological diagnoses were not the only ones associated with fatigue in this series: over one third of the patients had only organic diagnoses associated, and just over half (51 percent) had some kind of organic problem in association. While both physical and psychological diagnoses were distributed among both sexes and all ages, the duration of the fatigue helped to separate cases with physical diagnoses from those with psychological diagnoses. For female patients, family status (single person vs family member) was associated with different types of diagnoses. One interpretation of this finding is that the stresses of marriage and family responsibilities may affect women more than men. The family physician should be attuned to this kind of information in his/her evaluation of the patient's complaint.

Laboratory testing yielded relatively few positive results. More emphasis should probably be placed on the history and physical examination, while laboratory tests can be limited more than they were in this series. The complete blood count, serum potassium, and Monospot do appear to be useful tests, however. The value of a single hypoglycemic-range blood glucose remains obscure in the evaluation of fatigue; this single biochemical abnormality may not fully explain a patient's fatigue.⁶

Finally, the high degree of failure to document "closure" in these patients is disturbing. The picture drawn from this series was too often that of a single physician-patient encounter with the problem remaining unresolved. Subsequent laboratory testing may have suggested probable cause, but documentation of further discussion with the patient was frequently lacking. Certainly, the family physician owes his patients not only thorough

Table 7. Sex, Family Situation, and Associated Diagnoses in Adult Patients (N=161*)			
	Physical	Psychological	Totals
Male			
Single Person	5	9	14
Family Member	18	11	29
Subtotal	23	20	43
$\chi^2=NS$			
Female			
Single Person	19	7	26
Family Member	19	40	59
Subtotal	38	47	85
$\chi^2=10.60$			
df=1			
P<.01			
Totals	61	67	128*

*Thirty-three cases with mixed or undetermined diagnosis associated have been omitted. If all omitted cases are presumed to have psychological diagnoses associated, $\chi^2=6.85$, df=1, P<.01
NS=not significant

Table 8. Type of Practice and Associated Diagnoses (N=176*)			
Type of Practice	Physical	Psychological	Totals
Private	62	48	110
Teaching	7	24	31
Totals	69	72	141*

$\chi^2=9.74$
df=1
P<.01
*Thirty-five cases with mixed or undetermined diagnosis associated have been omitted. If all omitted cases are presumed to have psychological diagnoses associated, $\chi^2=6.40$, df=1, P<.05

evaluation of ill-defined problems but also communication regarding the possible causes of these problems.

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