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A Comparison of the Characteristics of Chronic Fatigue Syndrome in Primary and Tertiary Care

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Background. To evaluate the characteristics of Chronic Fatigue Syndrome (CFS) in primary and tertiary care.

Method. A comparison of subjects fulfilling criteria for CFS seen in primary care and in a hospital unit specialising in CFS. Subjects were 33 adults fulfilling criteria for CFS, identified as part of a prospective cohort study in primary care, compared to 79 adults fulfilling the same criteria referred for treatment to a specialist CFS clinic.

Results. Hospital cases were more likely to belong to upper socio-economic groups, and to have physical illness attributions. They had higher levels of fatigue and more somatic symptoms, and were more impaired functionally, but had less overt psychological morbidity. Women were over-represented in both primary care and hospital groups. Nearly half of those referred to a specialist clinic did not fulfil operational criteria for CFS.

Conclusion. The high rates of psychiatric morbidity and female excess that characterise CFS in specialist settings are not due to selection bias. On the other hand higher social class and physical illness attributions may be the result of selection bias and not intrinsic to CFS.

The Chronic Fatigue Syndrome (CFS) continues to be regarded as a controversial condition, particularly with regards to competing claims concerning aetiology and treatment. There is little disagreement about what constitutes the classic clinical presentation of this syndrome, and the usual demographic features of the sufferers. Many studies report that CFS sufferers are more likely to be women, to belong to higher social classes (with a particular over-representation of professionals), to be very impaired functionally, have high levels of psychological distress, hold characteristic illness beliefs, and have a poor prognosis (Wessely & Powell, 1989; Dowsett *et al*, 1990; Buchwald & Komaroff, 1991; Sharpe *et al*, 1992; Wilson *et al*, 1994). All these observations come from studies of specialist clinics, where patients frequently have already received a diagnosis of CFS prior to their referral. Although aetiological claims have been made on the basis of some of these observations, all could be the result of selection or referral bias. If so, the characteristics of the syndrome would differ between primary and tertiary care. We now report a comparison between a group of patients referred to a clinic specialising in CFS, and another group of subjects seen in primary care. Both groups fulfilled criteria for CFS (Sharp *et al*, 1991) ('Oxford criteria'), but were not necessarily seeking help under that label.

Method

Selection of cases

Primary care cases: Cases of CFS in primary care were identified at the final stage of a prospective cohort study of 1199 subjects presenting to GPs with clinically diagnosed viral infections, compared to 1177 attending for other reasons. The prevalence of chronic fatigue and CFS was determined six months later in the 1985 subjects in both cohorts who were successfully followed up (84%). The main finding of the study was that no differences emerged in the prevalence of chronic fatigue and CFS between those with, and without, initial viral infections (Wessely *et al*, 1995). In this paper we have thus joined the two groups.

Hospital cases: The hospital chronically fatigued cases were patients who had been referred to a CFS clinic at an inner London teaching hospital. This clinic receives referrals largely from local GPs and physicians, and specialises in research and management of CFS. The senior author (SW) carried out the majority of the assessments.

All those included in this study fulfilled the same criteria for CFS (Sharpe *et al*, 1991). There was no difference to the pattern of results if the same comparisons were repeated using the latest criteria proposed by the Centers for Disease Control (Fukada *et al*, 1994).

Measures

A variety of outcome measures were used during the cohort study. Those relevant to the current study were: the Fatigue Questionnaire (Chalder *et al*, 1993) – this also includes a question on self-attribution of fatigue; the 12-item General Health Questionnaire (GHQ–12; Goldberg, 1972). The conservative cut-off of 3/4 was used to determine psychiatric caseness; the Medical Outcomes Study Health Survey Questionnaire (20-item MOS Short Form; Ware *et al*, 1992) was used to assess functional impairment. Although functional impairment is a dimensional measure, it was necessary to choose a cut-off to fulfil operational criteria for CFS, the latest of which defines functional impairment as 'substantial' without further elaboration. We arbitrarily defined impairment as present when a subject answered positively to being limited for six months or more on any one of the following four questions asked in the MOS Short Form: being impaired on either moderate activities, walking uphill, walking 100 yards, or needing simple aids to daily living; and the Somatic Symptom Check List, which contains 32 somatic symptoms, modified from the Somatic Discomfort Questionnaire (Wittenborn & Buhler, 1979).

Most of these measures have been previously used in hospital based studies of CFS (Wessely & Powell, 1989; Butler *et al*, 1991). Information regarding past psychiatric history and past use of psychotropic drugs was obtained from the subjects themselves, as well as the GPs clinical notes. Social class was assessed using the Registrar General's classification (OPCS, 1970).

Statistics

The Student's *t*-test (2-tail probability) was used for parametric comparisons, and the Mann-Whitney U-test and χ^2 for non-parametric analyses. Odds ratios were calculated with 95% confidence intervals.

Results

We identified 214 subjects with chronic fatigue in the primary care cohort. Of these only 33 subjects fulfilled criteria for CFS (i.e. were known to have continuous fatigue at the start and finish of the six-month follow-up study, and to fulfil the appropriate criteria regarding severity, other symptoms and functional impairment). Full details of the epidemiology and nature of chronic fatigue and CFS in this primary care sample are reported elsewhere.

To recruit hospital cases of CFS, 142 patients were screened in the clinic. Sixty-three were excluded; 35 (25%) did not meet the positive criteria for CFS (usually failing to fulfil the functional impairment criteria, or not having fatigue as the principal complaint); 28 (20%) satisfied criteria for diagnoses incompatible with CFS, such as somatisation disorder (8 cases), asthenic personality disorder (2 cases excluded because of life-long fatigue), substance abuse (2 cases) or other primary physical and/or psychiatric diagnoses. Thus 79 (56%) cases fulfilled criteria for CFS. Most of the data used in this comparison includes all those fulfilling criteria for CFS seen in the clinic. However, 12 were too disabled for out-patient treatment (5). This group did not complete all the questionnaire measures, and are treated as missing for those comparisons. This applies to the GHQ (13%), MOS Short Form (13%), somatic symptom questionnaire (13%), and fatigue questionnaire (11%).

Demography

The proportion of women in the primary care sample exceeded that of the hospital group, but the difference was not statistically significant (Table 1). There was no difference in age between the groups. Primary cases were more likely to be married or co-habiting than hospital cases (Table 1) (odds ratio = 2.5, 95% CI: 1.0–6.2, χ^2 $P<0.05$). Hospital cases were substantially more likely to belong to social class 1 (Table 1) (odds ratio = 17.9, 95% CI: 2.3–138.2), or to social class 1 and 2 combined (odds ratio = 2.8, 95% CI: 1.2–6.7, χ^2 $P<0.05$).

Fatigue and myalgia

The total fatigue score was significantly higher for hospital than for primary care cases (Table 2) ($t=2.63$, d.f. = 92, $P<0.05$). Hospital cases scored higher on both the mental and the physical sections of the Fatigue Questionnaire.

Myalgia at rest and after exercise did not differ between the groups: 76.1% ($n=51$) of the hospital and 63.6% ($n=21$) of the primary care group complained of muscle pain at rest (odds ratio = 1.8, 959 CI: 0.7–4.5). Post-exertional muscle pain was reported in 85.1% ($n=57$) in the hospital and 81.8% ($n=27$) in the primary care group (odds ratio = 1.2, 95% CI: 0.4–3.8). Duration of fatigue did not differ between hospital and primary care cases (Table 2).

Table 1
Comparison of demographic data

Group *n*	Mean age (years)	% Female	% Married or co-habiting	% Social class 1
Community	36.4	81.8 (27)	71.9 (23)	3% (1)
33	(33.7–39.1)	(67–94)	(52–84)	(−2–8)
Hospital	35	68.4 (54)	50 (39)	35.9 (28)
79	(32.5–37.4)	(58–78)	(39–61)	(25–47)

95% CI shown in brackets

Table 2
Mean scores

Group *n*	Mean fatigue score (Likert)	Mean GHQ score (Likert)	Psychological attribution	Mean duration of fatigue (weeks)	Somatic symptoms mean score
Community 33	34 (32-35.9)	34.7 (31.9-37.5)	58.6% (17) (41-77%)	161 (81-241)	11.9 (9.9-13.8)
Hospital 79	36.9 (35.8-38)	30.6 (28.9-32.4)	6.5% (5) (0-11%)	224 (171-277)	14.7 (13.3-16.6)
Group *n*	**Previous psychiatric diagnosis**	**Work functioning mean score**	**Social functioning mean score**	**Physical functioning mean score**	**Do not drink or reduced alcohol**
Community 33	74.2% (23) (58-89%)	28.9 (14.2-43.5)	43 (30.9-55)	10.5 (9.5-11.5)	62.1% (18& (44-79%)
Hospital 79	21.1% (15) (12-30%)	9 (4.5-13.4)	31.9 (27.1-36.7)	9.5 (8.9-10.2)	90.9% (50) (83-99%)

95% confidence intervals in brackets.

Psychological morbidity

GHQ scores were significantly higher for the primary care than for hospital cases ($t=2.40$, d.f. $=91$, $P<0.05$), even adjusting for the differences in fatigue by using fatigue scores as a covariate. Primary care CFS cases had significantly worse mental health scores in the MOS Short Form questionnaire (mean = 16.0; 95% CI: 13.5–18.4) than hospital cases (mean = 20.8, 95% CI: 19.6–22.1) (Mann–Whitney $P<0.01$). The differences in individual GHQ are given in Table 3. The proportions scoring above the cut-off on the GHQ differed between the groups. Seventy-nine per cent (95% CI: 65–93) of the primary CFS cases were also cases rated by the GHQ, compared to 58.3% (95% CI: 47–69) of the hospital sample (odds ratio 2.6, 95% CI: 1.0–6.8. $P=0.05$). Primary care CFS cases were more likely than hospital cases to receive a comorbid psychiatric diagnosis on standardised interview, but these data are unreliable since different standardised interviews were used in the two samples. In this paper comparisons are restricted to the results of the questionnaires only.

Primary cases were more likely than hospital cases to have received a psychiatric diagnosis, as indicated by either their general practice records or self-report, before the onset of their fatigue (Table 2) (odds ratio = 10.7, 95% CI: 4.0–28.8; $P<0.001$).

There was little difference however between primary care and hospital cases regarding lifetime psychotropic drug use: 45.4% ($n=15$) of the primary care cases, and 43% ($n=30$) of hospital cases had been treated with a psychiatric drug at some point in the past (this included the period of fatigue).

Table 3
Comparison of GHQ results

General Health Questionnaire items	Community	Hospital	Odds ratio Community/ Hospital	χ^2 (Pearson)
Not being able to concentrate	78.8%	79.7%	NS	NS
Lost sleep over worry	37.5%	29%	NS	NS
Not playing a useful part	51.5%	59.4%	NS	NS
Not capable of making decisions	57.8%	53.8%	NS	NS
Felt constantly under strain	84.8%	55.1%	4.5 1.5–13.2	$P<0.01$
Couldn't overcome difficulties	80.8%	46.4%	NS	NS
Not able to enjoy daily activities	84.8%	79.7%	NS	NS
Not able to face up to problems	66.7%	37.7%	3.3 1.3–7.9	$P<0.01$
Feeling unhappy and depressed	75%	44.9%	3.6 1.4–9.3	$P<0.01$
Losing confidence in myself	69.7%	43.5%	2.9 1.2–7.2	$P<0.05$
Thinking of myself as a worthless person	42.4%	29%	NS	NS
Not feeling reasonably happy all things considered	66.7%	43.5%	2.8 1.0–8.1	$P<0.05$

Functional scores and somatic symptoms

Health perception, as measured by the MOS Short Form, was worse in the hospital than in the primary care cases (Mann–Whitney $P<0.0001$). Primary care cases were less likely to be impaired in terms of work ('Role functioning') than hospital cases (Mann–Whitney $P<0.05$) (Table 2). Primary care cases had better physical and social functioning scores than hospital cases (MOS), but these differences did not reach statistical significance. Bodily pain (MOS Short Form) was similar for both hospital and primary care groups.

Hospital cases had more somatic symptoms than primary cases (Table 2) (Mann–Whitney $P<0.05$). Individual symptom differences are shown in Table 4.

Fatigue attribution

Replies regarding perceived causes for the fatigue were classified as psychological, physical, mixed or unknown. Fifty-nine per cent of the primary care, but only 7% of the hospital thought their illness might be due to psychological or psychosocial causes. Alternatively 33% of the primary care cases thought it was physical, compared to 56% of the hospital cases. Contrasting psychological with the rest, primary care cases were substantially more likely to give a psychological or psychosocial attribution to their fatigue than hospital cases (odds ratio = 20.4; 95% CI: 6.3–65.7) (Table 2). 12% of the primary care, but 94% of the hospital cases used the terms Myalgia Encephalomyelitis (ME), Postviral Fatigue Syndrome (PVFS) or CFS to describe their illness (although this was not synonymous with a solely physical attribution of symptoms).

Table 4
Differences in somatic symptoms

Somatic symptoms	Hospital ($n=79$)	Community ($n=33$)	Odds ratio	χ^2 (Pearson)
Chest pain	32.9% (23)	6.1% (2)	7.5 (1.6–34.4)	<0.01
Stiffness	81.4% (57)	60.6% (20)	2.8 (1.1–7.1)	$P<0.05$
Tingling in fingers or arms	46.4% (32)	24.2% (8)	2.7 (1.1–6.8)	$P<0.05$
Light-headedness	71.4% (50)	45.5% (15)	3.0 (1.2–7.1)	$P<0.05$
Increased sensitivity to noise	66.7% (46)	42.4% (14)	2.7 (1.1–6.3)	$P<0.05$

Alcohol consumption

Hospital and primary care cases were equally likely to report that they drank alcohol, but a larger proportion of hospital cases either did not drink, or had reduced their alcohol intake, (Table 2) (odds ratio = 6.1, 95% CI: 1.8–20.0; $P<0.01$).

Self-help group

More hospital ($n=26$, 33%) than primary care cases ($n=3$, 10.3%) belonged to one or more ME self-help groups (odds ratio = 4.1, 95% CI: 1.1–15.0; $P<0.05$). Members and non-members of a self-help association did not differ in terms of fatigue scores, health perception, functional impairment, or number of somatic symptoms, but GHQ scores were significantly lower than those of the non-members (mean Likert score for members: 28.1, 95% CI; 24.7–31.5; non-members: 32.5, 95% CI: 30.8–34.1; $t=2.546$, d.f. = 87, $P<0.05$). Non-members were more likely to have received a previous psychiatric diagnosis (odds ratio 3.7, 95% CI: 1.4–9.7).

Discussion

The purpose of this study was to identify which of the many characteristics of CFS seen in specialist clinics were intrinsic to the condition, and which might be the result of selection/referral bias.

Gender

Women were over-represented in the hospital sample, but, contrary to our expectation, this did not represent an excess over primary care. Instead, there was a non-significant trend for females to be less likely to attend the specialist setting. This was unexpected, since we reported in the community study that preceded this cohort study a trend towards an increase in the proportion of females as more stringent categories of Chronic Fatigue and CFS are created (Pawlikowska *et al*, 1994). That women were over-represented at all stages of the study is largely accounted for by the fact that women overall present more frequently to their GP than men. Gender itself is only a weak risk factor for CFS.

There are several possible explanations for this result. First, doctors may be less willing to refer women with fatigue to the specialist clinic (or alternatively more willing to refer men). A recent study of fatigue in French general practice has shown that while women reported more fatigue than men, doctors were less likely to diagnose fatigue conditions and more likely to invoke the psychological construct of depression in fatigued women than men (Fuhrer & Wessely, 1995). It is also possible that gender itself directly influences the desire for referral – we found that although women with CFS had worse physical functioning than men, it was the men who had the worst perception of their health, a finding also noted in an American study (Buchwald *et al*, 1994).

Psychological morbidity

Hospital cases report less psychological distress than primary care cases, as judged by the scores on both the GHQ and the Mental Health section of the MOS Short Form, despite the fact that hospital cases had more severe levels of fatigue. Given that severity of fatigue is associated with increased psychological morbidity (Pawlikowska *et al*, 1994), this reversal of the expected pattern is surprising. Furthermore, since self-ratings of functional impairment, together with measures of fatigue and somatic distress, were all worse in the hospital cases (who had also been ill for slightly longer), one would again predict that psychological health would be worse.

There are a number of possible explanations. First, this may be partly artefactual related to the exclusion of categories such as somatisation disorder, which is common in specialist clinics but very rare in the community (no cases were found in the primary care sample). Second, prior psychiatric diagnosis, more common in the primary care cases, could deter a GP from referring the case to a CFS specialist clinic, choosing instead to identify the problem as a re-occurrence of the previous diagnosis. Given identical case vignettes, GPs were more likely to refer those with a self diagnosis of ME to hospital (Scott *et al*, 1995). Third, a reluctance to endorse psychiatric symptoms may be relevant. Primary care cases were most likely to make psychosocial attributions for their symptoms, as noted elsewhere (McDonald *et al*, 1993), whereas nearly all the hospital cases said their problem was ME or a related condition. This marked difference in self-diagnosis is one of the principal differences between the primary care and hospital samples. Looking at the individual GHQ items endorsed, it appears that the differences between primary care and hospital samples are more in the obviously psychological flavoured responses (feeling unhappy, loosing confidence, being under strain), and less in more neutral concepts such as inability to concentrate, unable to make decisions and not enjoying daily activities. However, these differences are not based on any *a priori* hypotheses, and would need independent replication.

Comparisons of primary care and hospital samples have been made in other conditions with possible relevance to CFS. In irritable bowel syndrome (IBS) studies have suggested that the excess of psychological morbidity in IBS subjects attending gastroenterology clinics is not found in the community, and may reflect the effect of psychological distress on illness behaviour, rather than an intrinsic feature of the condition (Whitehead *et al*, 1988). Our findings in CFS contradict this model. Although there is no doubt that CFS seen in a hospital setting is associated with rates of psychiatric disorder in excess of those associated with other chronic physical conditions (Wessely & Powell, 1989; Katon *et al*, 1991; Wood *et al*, 1991), these rates are comparable to those reported for chronic fatigue (McDonald *et al*, 1993) and CFS in primary care. Indeed, there is a suggestion in this study that the association may be stronger in primary than in specialist care. Thus the previously reported excess of psychiatric disorder in specialised settings cannot be attributed to illness behaviour or selection bias alone.

Social class

We confirmed the considerable excess of social class 1 among the hospital cases. This did represent a considerable difference from primary care. It has been postulated that the lifestyle of professionals renders this section of society more vulnerable to developing CFS (Dowsett *et al*, 1990). Our findings suggest that the social class bias found in specialist care is more likely to reflect alternative factors, such as the social meaning of physical and psychiatric illness, the relationship between this and social class, and access to specialist care.

Prognosis

Two recent studies have reported a poor outcome for CFS seen in specialist settings (Sharpe *et al*, 1992; Wilson *et al*, 1994). In both studies poor outcome was independently associated with the strength of physical attributions and current emotional disorder, while the latter also found that membership of a self-help organisation and avoiding alcohol also predicted poor outcome. We report that hospital cases are more likely to have physical beliefs about their illness, to be members of a self-help organisation and to avoid alcohol, but were no more likely to have current emotional disorder. It will therefore be instructive to compare the longer-term outcomes of the two groups in order to determine which of these factors is the most important association of poor prognosis.

Clinical implications

- CFS sufferers seen in primary care show no social class bias – the stereotype of "Yuppie flu" is an artefact of referral bias
- A firm belief in a physical attribution of symptoms that characterises CFS patients in specialist settings is not found in primary care
- There is an excess of psychological morbidity associated with CFS in either setting
- A substantial number of patients are being referred to specialist who do not fulfil criteria for CFS

Limitations

- Only 33 cases of CFS were identified in the primary care sample
- More complex measures of attributional style should be used in future studies

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