

A comparison of patients with chronic fatigue syndrome attending separate fatigue clinics based in immunology and psychiatry

P D White MD A J Pinching DPhil A Rakib MRCPsych M Castle MRCPsych B Hedge PhD S Priebe MD

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SUMMARY

Hospital clinics for patients with chronic unexplained fatigue are held in departments of various disciplines. This causes difficulties for referrers in choosing the appropriate clinic and for researchers in generalizing findings from one type of clinic to others. We randomly selected 37 outpatients attending an immunology fatigue clinic and 36 outpatients attending a psychiatry fatigue clinic, all of whom had chronic fatigue syndrome. We compared demographic factors, symptoms, disability, quality of life, psychological distress and illness attributions.

The patients from the two clinics were closely similar in their specific symptoms, disability, quality of life, psychological distress and previous attendance to mental health professionals. Psychological distress was high and equal in the two samples. The proportion of men was greater among patients attending the immunology clinic. In a *post-hoc* analysis, 64% of immunology attenders attributed their fatigue to physical factors, compared with 31% of psychiatry clinic attenders ($\chi^2=6.35$, 1 d.f., $P=0.01$).

These findings suggest that research data from one type of chronic fatigue clinic can be generalized to others. Clinically similar patients are referred to different clinics, and the choice of clinic may be influenced by the patients' illness beliefs. The high levels of emotional distress suggest that psychosocial management is as important as physical management in hospital outpatients with chronic fatigue syndrome, irrespective of its aetiology.

INTRODUCTION

Most research studies into the chronic fatigue syndrome (CFS) are conducted in outpatients attending hospital clinics (secondary or tertiary care)^{1–3}. Criticisms of such studies include selection bias by referrers, subgroup differences³, and uncertainty over generalizability between clinics. The findings in such patients may be as much determined by the clinic they attend as by their condition. For instance, a general practitioner whose differential diagnosis includes a psychiatric disorder may decide to send the patient to a clinic run by a psychiatrist. Similarly, a prominent history of recurrent infections might determine referral to a clinic run by an immunologist or an infectious disease physician. Alternatively, it may be the patient's beliefs about the illness that determine where he or she is referred. One international study indicated few demographic or clinical differences between patients attending fatigue clinics in departments of immunology, infectious diseases, neurology, psychiatry and rheumatology³; but this study did not

control for geography, examine illness beliefs or directly compare psychiatric and medical clinic attenders.

We hypothesized that patients attending a psychiatry clinic would be more psychologically distressed, and thus more fatigued, with a longer duration of illness. We thought they would have a higher prevalence of previous contact with mental health services. In contrast we hypothesized that patients attending the immunology clinic would have more physical symptoms, particularly those symptoms suggesting infections, and greater health anxieties. We thought that quality of life and functioning would be similar across clinic attenders.

METHODS

We approached patients attending an immunology-based clinic and a psychiatry-based clinic with a diagnosis of CFS. They were chosen by means of random number tables so that between 2 and 4 were approached every week—a manageable number for study. We studied 37 of 146 approached patients from the immunology clinic and 36 of 50 approached patients from the psychiatry clinic. This gave a power of 80% to detect a significant difference at the 5% level, on the assumption that 65% of the psychiatry clinic attenders would have significant psychological distress

Departments of Psychological Medicine and Immunology, Barts and the London, Queen Mary's School of Medicine and Dentistry, University of London, London EC1A 7BE, UK

Correspondence to: Dr P D White

E-mail: p.d.white@qmul.ac.uk

compared with 30% of the immunology attenders⁴. There was a non-significant trend for more non-participants to be female (84%) than participants (75%) (difference=9% [95% confidence interval -21, 2]). The mean age (SD) of the non-participants was 40 (9) years compared with 43 (10) (95% CI for difference 0, 5).

AR and MC interviewed patients to obtain consent and to ensure that they met Oxford criteria for CFS⁵. For convenience, immunology patients were interviewed on the same day as a clinic attendance, whereas psychiatry attenders were interviewed on a separate day. All 73 patients had CFS as defined by the Oxford criteria⁵. Excluded patients were those unable to complete the questionnaires for reasons of either language or severe disability. The study had been approved by the research ethics committee of the East London and the City Health Authority.

Indices used included the Chalder fatigue scale⁶ and a visual analogue scale measuring different aspects of fatigue⁷. Other symptoms were measured by the somatic discomfort questionnaire (SDQ)⁸. Quality of life was measured by the Manchester short assessment of quality of life (MANSA)⁹. Self-reported disability was measured by the SF 36 medical outcome survey¹⁰. Psychological distress was measured with the Spielberger anxiety trait scale¹¹, the symptom checklist (90-item revised version) (SCL-90R) which has been validated in patients with a chronic medical condition¹², and a single-item depression scale designed to assess 'how much you are troubled by feeling miserable or depressed', originally validated with anxious patients¹³. We also used the health anxiety questionnaire (HAQ)¹⁴ and the Beck hopelessness scale¹⁵. Illness attribution was indicated by an open question as part of the Chalder fatigue questionnaire⁶, asking patients why they thought they were fatigued. When more than one explanation was offered, we chose either the first one given or the main one, when this was apparent.

We compared categorical variables, such as gender, between groups by the χ^2 test. We recoded individual symptoms of the SCL-90R, SDQ, and HAQ so that we could compare the categorical reporting of 161 separate symptoms between clinics. We categorized symptoms of the SCL: 0, 1 versus 2 to 4 ('moderately' present) and in a separate higher threshold analysis 0 to 2 versus 3 and 4 ('quite a bit' present). Similarly we categorized the SDQ and HAQ in two ways: 1 versus 2 to 4 ('sometimes or somewhat' present), and with a higher threshold, 1,2 versus 3,4 ('often' or 'moderately' present). The large majority of interval variables were not normally distributed. Therefore, we reported medians (interquartile range) (IQR) and compared groups using the Mann-Whitney test. As a *post-hoc* analysis of illness beliefs, conducted blinded to clinic attendance, we classified the following as consistent

with a cognitive-behavioural model: stress, sleep disturbance, chronic anxiety, and deconditioning¹. We classified the rest as consistent with a biomedical or physical explanation², and compared groups by the χ^2 test.

RESULTS

Immunology patients were more likely to be male (35% versus 14%, $P=0.03$) and living with someone (81% versus 54%, $P=0.01$). Importantly, there were no significant differences in age (mean [SD]=43 [10] years versus 44 [9]), ethnicity, sexuality, marital status, previous education, employment (60% versus 73%), number of children, having a close friend, or receipt of benefits.

Table 1 shows the data related to CFS and fatigue. There were no statistically significant differences in either the median duration of illness or the median period of attendance at the clinics. There were no significant differences in the fatigue scores, apart from an 8% trend of more post-exertional physical fatigue in the immunology attenders. There was no significant difference in the number of other symptoms, as shown by the somatic discomfort questionnaire total score.

When individual symptoms were categorized with a high threshold, we found no statistically significant differences, between the two clinics, in the prevalence of any symptoms that were taken from the SCL, the SDQ or the HAQ. When symptoms were categorized by a lower threshold, psychiatry attenders were more likely to report worrying about an unpleasant feeling in their body (HAQ; $P=0.01$), breathing faster than normal (SDQ; $P=0.03$), and 'feeling everything is an effort' (SCL; $P=0.04$). Immunology patients were more likely to report 'nausea or upset stomach' and 'feeling afraid you will faint in public' (SCL; $P=0.04$ for both comparisons), with no significant

Table 1 Chronic fatigue syndrome and fatigue measures

| Variable | Immunology | Psychiatry | P |
|-------------------------------|---------------|---------------|------|
| Time attending clinic (years) | 2 (1-3) | 2 (1-5) | 0.10 |
| Duration of illness (years) | 6 (3-9) | 7 (4-11) | 0.21 |
| Chalder fatigue | 10 (6.5-11) | 11 (9-11) | 0.21 |
| Persistent physical fatigue | 86 (77-95) | 88 (69-95) | 0.98 |
| Persistent mental fatigue | 85 (77-98) | 88 (71-96) | 0.76 |
| Exertional physical fatigue | 97 (83-100) | 88 (74-99) | 0.08 |
| Exertional mental fatigue | 88 (83-99) | 87 (71-96) | 0.32 |
| Total VAS fatigue | 350 (329-380) | 347 (298-379) | 0.26 |
| Somatic distress | 102 (21) | 97 (23) | 0.38 |

VAS=visual analogue scale. Medians (interquartile range) or mean (standard deviation). Mann-Whitney test used to compare medians and independent t test used to compare means. Maximum scores are: 11 on the Chalder scale, 100 on the other individual fatigue scales apart from the total, which has a maximum of 400

Table 2 Psychological measures

| Variable | Immunology | Psychiatry | P |
|-----------------------------------|-------------|-------------|------|
| Single-item depression score | 2 (1-4) | 3.5 (2-5) | 0.03 |
| Beck hopelessness scale | 5 (2-8) | 7 (2-13) | 0.25 |
| Spielberger trait anxiety | 46 (4.9) | 46 (5.1) | 0.96 |
| Health anxiety | 37 (10) | 38 (9) | 0.68 |
| Symptom checklist (SCL) 90R total | 98 (52-135) | 93 (58-129) | 0.81 |
| SCL Somatization | 22 (17-29) | 18 (11-25) | 0.07 |
| SCL Obsessive compulsion | 22 (14-27) | 21 (13-25) | 0.52 |
| SCL Depression | 20 (7-28) | 18 (15-28) | 0.99 |
| SCL Interpersonal sensitivity | 7 (4-11) | 8 (5-13) | 0.37 |
| SCL Anxiety | 10 (4-18) | 9 (5-14) | 0.97 |
| SCL Hostility | 4 (1-7) | 4 (2-9) | 0.51 |
| SCL Phobia | 2 (0-9) | 3 (0-8) | 0.76 |
| SCL Paranoia | 2 (1-5) | 2 (0-7) | 0.83 |
| SCL Psychoticism | 4 (0-9) | 4 (1-7) | 0.60 |

Medians (interquartile range) or mean (standard deviation). Mann-Whitney test used to compare medians and independent t test used to compare means

differences in individual symptoms from the SDQ or HAQ. These few differences were no longer significant after application of Bonferroni's correction for multiple comparisons.

Table 2 shows the psychological questionnaire data. The only significant difference between the clinics was in the single-item depressed mood scale, with patients attending the psychiatric clinic having a higher depressed mood score. However, when we examined categorical symptoms on individual questionnaires, there were no significant differences in reporting 'feeling depressed' (SDQ), feeling 'blue', 'no interest in things', or 'crying easily' (SCL-90R). Similarly, when we measured the more comprehensive depression subscale of the SCL-90R, the scores were very similar. There was no significant difference in the Beck hopelessness scale score.

Regarding other psychological symptoms and syndromes, there were no significant differences in the Spielberger anxiety trait scores, the health anxiety questionnaire scores, or any of the symptom checklist 90-R subscale scores (apart from a trend towards more somatization in the immunology attenders) (see Table 2). The high levels of psychological distress (shown by the scores on SCL-90R subscales for depression, obsessive-compulsion and somatization) were reflected in the large proportions of patients being prescribed antidepressants or minor tranquillizers with 22/37 (60%) of immunology patients taking such medicines compared with 29/36 (81%) of psychiatry patients ($\chi^2=2.92, P=0.09$). At the same time, psychoactive medication was sometimes prescribed for non-

mental health indications, such as muscle relaxation, pain and insomnia.

11 of 37 (30%) immunology patients had consulted a psychiatrist (before clinic attendance) compared with 8/36 (22%) psychiatry clinic patients ($\chi^2=0.21, P=0.64$). 12 out of 37 (32%) immunology patients had previously consulted a psychologist compared with 10/36 (28%) psychiatry clinic patients ($\chi^2=0.03, P=0.86$). 8 out of 37 (22%) immunology patients had previously seen a counsellor compared with 6/36 (17%) psychiatry clinic patients ($\chi^2=0.06, P=0.81$).

Table 3 gives the data on quality of life and disability. There was no significant difference in the MANSA quality of life score; nor were there differences in the SF 36 disability subscores, apart from an 8% trend for more bodily pain in the immunology attenders.

Table 4 gives the illness attributions of all patients. Of those who gave attributions, 25 out of 33 (76%) immunology attenders gave a physical illness attribution compared with 17/35 (49%) psychiatry attenders ($\chi^2=5.31, 1 \text{ d.f.}, P=0.02$). When we excluded CFS/ME (myalgic encephalomyelitis) as a physical explanation (since some regard this as consistent with both models of understanding), 21/29 (72%, or 64% of all 33 respondents) of immunology attenders reported physical explanations compared with 11/28 (39%, or 31% of all 35 respondents) of psychiatry clinic attenders ($\chi^2=6.35, 1 \text{ d.f.}, P=0.01$). There were no significant differences in illness attributions by gender (data not shown).

DISCUSSION

Contrary to our expectations, we found no significant differences between the two clinics in any health measures apart from the single-item depressed mood scale; a finding not supported by other measures of depression, including those with greater variance. Equally, we found no

Table 3 Disability scores

| Variable | Immunology | Psychiatry | P |
|------------------------|-------------|-------------|------|
| SF36 physical function | 35 (20-55) | 45 (31-60) | 0.11 |
| SF36 physical role | 0 (0-0) | 0 (0-19) | 0.26 |
| SF36 bodily pain | 31 (22-41) | 41 (24-62) | 0.08 |
| SF36 general health | 30 (18-45) | 25 (15-35) | 0.29 |
| SF36 vitality | 20 (10-35) | 20 (5-39) | 0.94 |
| SF36 social | 38 (25-63) | 38 (16-63) | 0.69 |
| SF36 emotional role | 100 (0-100) | 50 (0-100) | 0.36 |
| SF36 mental health | 64 (52-78) | 60 (40-72) | 0.13 |
| MANSA quality of life | 4.24 (0.61) | 4.08 (0.91) | 0.37 |

Medians (interquartile range) or mean (standard deviation). Mann-Whitney test used to compare medians and independent t test used to compare means

Table 4 Illness attributions [number (%)]

| Belief | Immunology | Psychiatry |
|--------------------------------|------------|------------|
| Insufficient rest/overexertion | 10 (27) | 8 (22) |
| Sleep disturbance | 5 (14) | 8 (22) |
| CFS/ME | 4 (11) | 6 (17) |
| Stress | 3 (8) | 7 (19) |
| Virus | 3 (8) | 1 (3) |
| Physical disease | 4 (11) | 0 |
| Pain | 2 (5) | 1 (3) |
| Side-effect of medication | 1 (3) | 1 (3) |
| Immune problem | 1 (3) | 0 |
| Car accident | 0 | 1 (3) |
| Chronic anxiety | 0 | 1 (3) |
| Deconditioning | 0 | 1 (3) |
| No attribution given | 4 (11) | 1 (3) |
| Total 'physical' attributions | 25/33 (76) | 17/35 (49) |
| Total 'physical' attributions* | 21/33 (64) | 11/35 (31) |

*'Physical' attributions excluding CFS/ME (chronic fatigue syndrome/myalgic encephalomyelitis); 'total' attribution denominator excludes missing data

differences in the prevalence of specific symptoms between the two clinics, particularly when we allowed for multiple comparisons. Both groups of clinic attenders had high and similar levels of trait anxiety, health anxiety, somatization, and depression.

Could this lack of difference between clinics be due to methodological weaknesses? Although we did our best to draw representative and random samples from the clinics, any case-control design is prone to selection bias, such as might follow from interviewing the samples on different days. The higher proportion of men in the immunology clinic would tend to reduce the prevalence of psychological distress in this sample, because women are more prone to psychological symptoms¹⁶. Any resultant bias would have gone against our hypothesis, in that equivalent sex prevalence between clinics would have tended to increase the psychological distress in the immunology clinic. None of the other minor demographic differences is likely to have influenced our findings. The lack of interviewer masking was overcome by use of self-ratings. The small number of patients studied makes a type 2 error possible, so we may have missed significant differences that were truly there. However, in view of multiple comparisons, the few significant differences found are more likely to be chance findings.

Were these clinics representative of both our chronic fatigue clinic attenders and those in other centres? There were no important differences in age or gender between participants and non-participants. In the international study of 744 patients attending secondary and tertiary care chronic fatigue clinics in several different disciplines

(including immunology and psychiatry) the patients had very similar demographic and clinical characteristics to the patients we have described³. The mean duration of illness was 7.9 years, with 26% males and mean age 41 years³. In another large study, of 565 patients attending an infectious disease and immunology service, the mean duration of illness was between 6 and 8 years, 29% were male, and the mean age was around 38 years¹⁷. We conclude that our findings are probably generalizable to other secondary care clinics.

Patients had been ill for a median of 6 to 7 years, and had been attending our clinics for a median of 2 years. Therefore, one explanation for the similarity between clinics might be that we studied more chronic and homogeneous samples, with a consequently high prevalence of psychological distress¹⁸, who had not yet recovered from their illness, and were thus still attending clinics. We suspect this would be true of most studies in secondary care. The alternative interpretation is that the two clinics were seeing patients with similar clinical characteristics.

The only other clinical difference we did find was in illness attributions, with the immunology clinic attenders attributing their illness more to physical factors. This was particularly the case when CFS (or ME) was excluded as a physical explanation^{1,2}. This difference in attributions might explain why the psychiatry attenders were more willing to label their mood 'miserable or depressed' even though more subtle measures of mood indicated similarity between the clinics. Patients' illness beliefs may have influenced clinic referral, since the two clinics were held in the same hospital. An alternative explanation is that the illness beliefs were influenced by patient education while they attended the clinics. We would need to measure illness beliefs on first attendance to be sure, but a qualitative study of patients with CFS suggested that health professionals' views had little effect on patients' beliefs¹⁹. The weakness of these data is that we did not measure illness beliefs in a standardized way. Categorization into 'physical' and cognitive-behavioural beliefs was arguably arbitrary and *post hoc*, although the categorization of beliefs was done without knowledge of the clinic attended. The analysis was made *post hoc*, so this finding should be treated cautiously; but further study is warranted because physical illness beliefs seem to be associated with a poor outcome in CFS^{1,20} (although not necessarily following treatment²¹).

This study strengthens the evidence that, whatever kind of secondary care clinic they attend, patients with chronic fatigue syndrome have similar features. Both groups of clinic attenders had high levels of psychological distress, greater than those found in patients with other chronic disabling conditions of similar duration^{1,22}. The relationship between distress and illness beliefs warrants further investigation. Assessment and management of psychological

distress should be routine in patients with CFS, whatever its aetiology.

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