Fatigue is a ubiquitous symptom in every country so far studied, as shown by high prevalences of fatigue in community and primary care. 1–6 Studies have also reported fatigue to be one of the most frequent presenting complaints to doctors in primary care. 7,8 However, clinical descriptions of chronic fatigue syndrome, also known in some countries as myalgic encephalomyelitis, have arisen from a limited number of high-income countries in Northern Europe, North America and Oceania, which might indicate sociocultural influences on the expression of the disorder. 9,10 Alternatively, it has been suggested that the recognition of the disorder rather than the disorder itself is culturally influenced. 11 However, to date, no direct comparison of the prevalence and/or recognition of chronic fatigue syndrome across culturally and economically distinct countries has been conducted. There are very few epidemiological studies of chronic fatigue syndrome in low- and middle-income countries, 9 where both the population and healthcare professionals seem unfamiliar with the construct of the syndrome. 12 Furthermore, the prevalence of the syndrome varies widely according to the case definition, method and setting adopted in each study, making comparisons of existing studies unreliable. Indeed, the reported prevalence of chronic fatigue syndrome ranges from 0.004% to 2.54% in the community, 13–20 and from 0.11% to 2.6% in primary care. 21–24 Our study is a direct comparison of the prevalence and the physician recognition of chronic fatigue syndrome in Brazilian and British primary care using the same method. The prevalence of unexplained chronic fatigue, a less severe ‘sub-syndromal’ counterpart of chronic fatigue syndrome, was also compared. We hypothesised that the prevalence of unexplained chronic fatigue and chronic fatigue syndrome measured using standardised assessments would be similar in the two primary care settings, but Brazilian general practitioners (GPs) would be less likely to recognise and diagnose chronic fatigue syndrome than their British colleagues.

Method

Primary care patients in London (n=2459) and São Paulo (n=3914) were surveyed for the prevalence of chronic fatigue syndrome. Medical records were reviewed for the physician recognition and diagnosis.

Results

The prevalence of chronic fatigue syndrome according to Centers for Disease Control 1994 criteria was comparable in Britain and Brazil: 2.1% v. 1.6% (P=0.20). Medical records review identified 11 diagnosed cases of chronic fatigue syndrome in Britain, but none in Brazil (P<0.001).

Conclusions

The primary care prevalence of chronic fatigue syndrome was similar in two culturally and economically distinct nations. However, doctors are unlikely to recognise and label chronic fatigue syndrome as a discrete disorder in Brazil. The recognition of this illness rather than the illness itself may be culturally induced.

Declaration of interest

None. Funding detailed in Acknowledgements.
inner-city areas and one from a suburban area. Additionally, to maximise the comparability between the two countries, only the public clinics with the Family Health Program, an official programme which resembles the UK system, were recruited in Brazil.

**Assessments and procedures**

Fatigue status including severity and duration was assessed with the Chalder Fatigue Questionnaire (CFQ), an 11-item questionnaire widely used to measure physical and mental fatigue. Prior to this study, we had conducted a rigorous process of translation, back-translation, cross-cultural adaptation and validation of the CFQ in Brazil, the details of which are provided elsewhere. Based on the validation studies, we used a cut-off of 3/4 by bimodal scoring for substantial fatigue in both countries. Chronic fatigue was defined as a score of four or more on the CFQ with a reported duration of 6 months or greater. Unexplained chronic fatigue was defined as medically unexplained substantial fatigue lasting 6 months or more according to the CFQ and the medical examination. Chronic fatigue syndrome, characterised by severe physical and mental fatigue and other accompanying symptoms which cannot be explained by any other medical condition and which cannot persist for at least 6 months, was assessed using the Centers for Disease Control (CDC) 1994 case definition. We also determined whether those participants who fulfilled criteria for chronic fatigue had been diagnosed as a case of chronic fatigue syndrome by their GPs. For this purpose, we reviewed their medical records in search for the following diagnostic labels: ‘chronic fatigue’, ‘chronic fatigue syndrome’, ‘myalgic encephalomyelitis’ and ‘post-viral fatigue syndrome’. The 12-item General Health Questionnaire (GHQ–12) was used with the conventional cut-off of 3/4 by bimodal scoring for substantial fatigue in both countries. Chronic fatigue was defined as medically unexplained substantial fatigue lasting 6 months or more according to the CFQ and the medical examination. Chronic fatigue syndrome, characterised by severe physical and mental fatigue and other accompanying symptoms which cannot be explained by any other medical condition and which cannot persist for at least 6 months, was assessed using the Centers for Disease Control (CDC) 1994 case definition. We also determined whether those participants who fulfilled criteria for chronic fatigue had been diagnosed as a case of chronic fatigue syndrome by their GPs. For this purpose, we reviewed their medical records in search for the following diagnostic labels: ‘chronic fatigue’, ‘chronic fatigue syndrome’, ‘myalgic encephalomyelitis’ and ‘post-viral fatigue syndrome’. Finally, the 12-item General Health Questionnaire (GHQ–12) was used with the conventional cut-off of 3/4 by bimodal scoring to determine probable common mental disorder, as validated in both British and Brazilian primary care. Ethical approval was obtained from the research ethics committees of King’s College Hospital, Institute of Psychiatry, London, UK, and the Municipal Department of Health of São Paulo and University of São Paulo Medical School, Brazil.

Phase 1 (screening)

Consecutive attenders at the general practices were invited to participate in the study while they were waiting for their appointment. After reading an information leaflet and signing a consent form, individuals completed the CFQ and the GHQ–12. The questionnaires were read out to illiterate and functionally illiterate participants.

Phase 2

Those who fulfilled criteria for chronic fatigue were then asked to complete a questionnaire on the CDC–1994 case definition of chronic fatigue syndrome. Their medical records were reviewed to determine whether they had medical and/or psychiatric exclusionary conditions for the syndrome according to the CDC–1994 case definition, and whether their GPs had diagnosed them as chronic fatigue syndrome cases. The medical records review took place approximately 4 months after the completion of the questionnaire to enable the necessary investigations to be processed. In addition to those investigations requested by the treating doctor, we performed some routine laboratory investigations (liver and thyroid function, full blood count, creatinine and glycosylated haemoglobin) in all Brazilian participants with chronic fatigue because, in Brazil, we expected medical exclusion diagnoses to be more frequent and these investigations were less likely to be requested by the examining doctor. Those individuals with chronic fatigue with neither medical nor psychiatric exclusionary diagnoses for chronic fatigue syndrome were classified as having unexplained chronic fatigue, which therefore corresponds closely to the general concept of medically unexplained symptoms.

**Analysis**

Stata Version 10 for Windows was employed for all statistical analyses and the significance level was set at \( P = 0.05 \). Participant characteristics were compared between the two countries by two-tailed chi-squared or t-tests. The prevalence of unexplained chronic fatigue and chronic fatigue syndrome in each country was estimated with the appropriate 95% confidence interval (CI). The aforementioned diagnostic labels were counted during the medical records review, and the percentage frequency in each country with 95% CI was calculated as a proxy for the physician recognition rate of the syndrome. The prevalence of each fatigue category – unexplained chronic fatigue, chronic fatigue syndrome and diagnostic labels – was compared between Brazil and the UK using a chi-squared test. Furthermore, in order to take into account the confounding effect of socio-demographic characteristics and common mental disorder, multivariable logistic regression was conducted with country membership (Brazil vs. UK) as the exposure variable and each fatigue category as the outcome variable.

**Results**

Valid screening questionnaires were obtained from 3921 participants in São Paulo and 2530 in London (Fig. 1). Seven questionnaires had missing data in Brazil and 71 in the UK. Therefore, 3914 participants were considered for data analysis in Brazil and 2459 in the UK. In Brazil, 1542 (39.4%) had a score above the cut-off of the CFQ, which corresponds to substantial fatigue, and 609 (15.6%) were individuals with chronic fatigue. In the UK, 1046 (42.5%) had a score above the cut-off and 305 (12.4%) were individuals with chronic fatigue. All socio-demographic characteristics except age were significantly different between the two samples (Table 1). Brazilian participants had a lower education level, and were more likely to be female, to have a stable partner (i.e. married or cohabiting), to have a manual occupation and to be unemployed. Although Brazilian and British participants reported similar fatigue levels, the former group appeared more psychologically distressed as shown by a higher prevalence of common mental disorder (Table 1).

Of the 609 Brazilian and 305 British participants with chronic fatigue, 133 (21.8%) and 52 (17.1%) respectively had a medical or psychiatric exclusionary condition and were classified as individuals with explained chronic fatigue. Consequently, the prevalence of unexplained chronic fatigue was 12.2% (95% CI 11.2–13.2) in Brazil and 10.3% (95% CI 9.1–11.6) in the UK (Table 2). Thirty-six of 609 Brazilian participants with chronic fatigue (5.9%) and 99 of 305 British ones (32.5%) did not supply adequate information for the diagnosis of chronic fatigue syndrome, and they scored slightly lower on the CFQ compared with those who supplied adequate information \( (P = 0.05 \) in both countries). The prevalence of chronic fatigue syndrome was therefore adjusted for non-response, using non-responders’ CFQ score as the predictor of their chronic fatigue syndrome caseness in logistic regression. The estimated prevalence of the syndrome according to the CDC–1994 criteria was 1.6% (95% CI 1.3–2.1) in Brazil and 2.1% (95% CI 1.5–2.7) in the UK. When controlled for socio-demographic characteristics (age, gender, education, marital

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**References**

Table 1  Participant characteristics compared between Brazil (n=3914) and the UK (n=2459) by chi-squared or t-tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Brazil</th>
<th>UK</th>
<th>( \chi^2 ) or ( t )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years: mean (s.d.)</td>
<td>31.7 (7.9)</td>
<td>31.6 (7.2)</td>
<td>0.56</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>3120 (79.7)</td>
<td>1759 (71.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Education, years: mean (s.d.)</td>
<td>8.7 (4.4)</td>
<td>15.3 (4.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Marital status, n (%)</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Married or cohabiting</td>
<td>2188 (55.9)</td>
<td>1304 (53.0)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>1366 (34.9)</td>
<td>986 (40.1)</td>
<td></td>
</tr>
<tr>
<td>Separated, divorced or widowed</td>
<td>360 (9.2)</td>
<td>169 (6.9)</td>
<td></td>
</tr>
<tr>
<td>Employment status, n (%)</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Employed</td>
<td>2645 (67.6)</td>
<td>1683 (68.4)</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>206 (5.3)</td>
<td>200 (8.1)</td>
<td></td>
</tr>
<tr>
<td>Homemaker</td>
<td>535 (13.7)</td>
<td>316 (12.9)</td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>444 (11.3)</td>
<td>159 (6.5)</td>
<td></td>
</tr>
<tr>
<td>On sick leave</td>
<td>84 (2.1)</td>
<td>101 (4.1)</td>
<td></td>
</tr>
<tr>
<td>Occupation, n (%)</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Non-manual</td>
<td>1519 (38.8)</td>
<td>1495 (62.1)</td>
<td></td>
</tr>
<tr>
<td>Manual</td>
<td>2092 (53.4)</td>
<td>585 (24.3)</td>
<td></td>
</tr>
<tr>
<td>Student or never worked</td>
<td>105 (2.7)</td>
<td>185 (7.7)</td>
<td></td>
</tr>
<tr>
<td>Homemaker</td>
<td>198 (5.1)</td>
<td>143 (5.9)</td>
<td></td>
</tr>
<tr>
<td>Common mental disorder, n (%)</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Unexplained chronic fatigue</td>
<td>1703 (43.5)</td>
<td>913 (37.1)</td>
<td></td>
</tr>
<tr>
<td>Fatigue,( a ) mean (s.d.)</td>
<td>3.3 (3.2)</td>
<td>3.4 (3.4)</td>
<td>0.20</td>
</tr>
</tbody>
</table>

a. Total score of the Chalder Fatigue Questionnaire using bimodal scoring system.

Table 2  Prevalence of unexplained chronic fatigue, chronic fatigue syndrome and diagnostic labels related to chronic fatigue syndrome\(^a\) compared between Brazil and the UK by logistic regression

<table>
<thead>
<tr>
<th>Fatigue category</th>
<th>Brazil</th>
<th>UK</th>
<th>( \text{OR}^d ) (95% CI)</th>
<th>( \text{OR}^d ) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unexplained chronic fatigue</td>
<td>3914 476 (12.2)</td>
<td>2459 253 (10.3)</td>
<td>0.83 (0.70–0.97)</td>
<td>0.92 (0.74–1.13)</td>
</tr>
<tr>
<td>Chronic fatigue syndrome</td>
<td>3914 64 (1.6)</td>
<td>2459 51 (2.1)</td>
<td>1.27 (0.88–1.85)</td>
<td>1.52 (0.94–2.44)</td>
</tr>
<tr>
<td>Diagnostic labels</td>
<td>391 0</td>
<td>269 11 (4.1)</td>
<td>Not applicable</td>
<td>&lt;0.001e</td>
</tr>
</tbody>
</table>

\( a \). Diagnostic labels related to chronic fatigue syndrome included 'chronic fatigue', 'chronic fatigue syndrome', 'myalgic encephalomyelitis' and 'post-viral fatigue syndrome'.

\( b \). For diagnostic labels, total is the number of medical notes reviewed.

\( c \). Odds ratio calculated with Brazil as the reference category.

\( d \). Adjusted for age, gender, education, marital status, employment status, occupation and common mental disorder.

\( e \). \( \chi^2 \) for chi-squared test.
Fatigue as a symptom elicited by a questionnaire or recorded by an interviewer should mostly reflect the presence or absence of the symptom in an individual. However, fatigue as a diagnosis made by the physician depends upon factors other than the simple presence or absence of the symptom. Much needs to happen for GPs to recognise fatigue cases and label them with such diagnoses as chronic fatigue syndrome, myalgic encephalomyelitis and post-viral fatigue syndrome. First of all, the doctor needs to attribute some importance to the symptom of fatigue. It has been shown that doctors accord fatigue only a minor importance in comparison with patients – doctors rate it as far less important than patients, probably because of its ubiquity and lack of diagnostic specificity. Furthermore, the practitioner needs to be aware of these labels and to have at least some knowledge of the diagnostic concept. Even then, a practitioner may be well aware of the concepts and/or labels, but feel that these are not valid or useful, and hence not use them. Studies of doctors’ knowledge and attitudes towards chronic fatigue syndrome/myalgic encephalomyelitis have indicated that opinions vary widely about the existence and utility of these labels. There are also changes in physicians’ diagnostic patterns for fatigue over time.

These factors, upon which the recognition and labelling of fatigue depend, may have an important link with the sociocultural setting. The degree of medicalisation of the population and awareness of chronic fatigue syndrome among the population and the medical professionals may be important. The explanatory models held by individuals with chronic fatigue seem to be more medically oriented in Western affluent societies compared with non-Western societies. Further data from the current study, reported elsewhere, demonstrated that British people with unexplained chronic fatigue were more likely to attribute their fatigue to physical causes than their Brazilian counterparts in line with this proposition. Moreover, while chronic fatigue syndrome is well known and officially endorsed as a medical condition in the UK, it is little known in Brazil by either patients or doctors. We believe that these differences in sociocultural context between Brazil and the UK have contributed to the current findings. Conversely, these findings indicate the importance of sociocultural factors not so much in the occurrence and distribution of fatigue but more in the recognition and labelling of fatigue. In Brazil, where unexplained fatigue is not sanctioned as a medical condition worthy of medical treatment, sick leave or sickness benefit, it may be more likely to be considered as part of everyday adversity and less likely to be recognised as a medical disorder. Likewise, individuals with a similar range of symptoms are considerably less likely to receive a label of chronic fatigue syndrome/myalgic encephalomyelitis in Brazil than in the UK.

Limitations and strengths

The study has some limitations. First, the medical records review for the assessment of fatigue diagnosis was incomplete in Brazil – medical records could not be traced for almost 30% of Brazilian participants with chronic fatigue. In addition, although the UK medical records were all electronic and mostly complete, the available Brazilian medical records were all on paper and frequently lacking information on examination results. None the less, the absence of any fatigue diagnosis in a far larger pool of medical records in Brazil is unlikely to be explained by this limitation. In addition, the type of quality problem observed in the Brazilian medical records was not directly related to diagnostic labels and we conducted laboratory tests in Brazil to compensate for this particular deficiency. Furthermore, as mentioned above, there is also evidence that Brazilian doctors are unfamiliar with the construct of chronic fatigue syndrome and rarely use this
diagnosis in their practice.12,34 Second, general practices were not randomly selected and consequently selection bias was possible. In order to minimise this problem, we employed the sampling strategy of including different social classes in proportion to the national data and selecting general practices with similar characteristics in the two countries.

Despite these limitations, this study also had some strengths as it included large samples with a reasonable number of clinics; made a direct comparison of a poorly explored topic in two culturally and distinctly different settings using the same method; employed cross-culturally validated measures of fatigue and psychological distress; and conducted multivariable analyses.

This is the first study to specifically estimate the prevalence of unexplained chronic fatigue/chronic fatigue syndrome in Brazil. If taken at face value, it raises the question of unexplained chronic fatigue/chronic fatigue syndrome as a hidden public health issue in Brazil given the prevalence of and the disability caused by the conditions. More importantly, this is the first study to examine the epidemiology of chronic fatigue syndrome using the same standardised methodology across two culturally and economically distinct countries, an Anglophone affluent country and a Latin American middle-income country. Despite its limitations, this study provides some evidence about the role of socio-cultural factors in the recognition of fatigue and the use of labels such as chronic fatigue syndrome/myalgic encephalomyelitis. In other words, the recognition of this illness rather than the illness itself seems to be culturally induced. The overall conclusion is that unexplained chronic fatigue/chronic fatigue syndrome can be found in Brazil in similar proportions as the UK, if one cares to look. At the moment, it seems that Brazilian society, or more specifically its healthcare system, does not care to look. How appropriate this is, and what the impact is, will remain a matter of speculation. Further research on the pragmatic implications of the current findings may shed more light on the understanding of this controversial, continuing but real health problem.

**Acknowledgements**

This study was supported by grants from the Fundação Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), the Fundação de Apoio à Pesquisa no Estado de São Paulo (FAPESP proc. No. 04/02771-5), and the Institute of Social Psychiatry. F.R.M. was partly funded by the CNPq-Brazil. The University Hospital from the University of São Paulo allowed the infrastructure for the field work in Brazil. Professors Lawrence Kirmayer, Iair de Jesus Mar, Cecília Maria Sivilli Campos, and Ms. Maria Oshiro are gratefully acknowledged for their valuable contribution to the study. The authors are also grateful to the doctors, staff and patients of the following general practices in São Paulo and London: UBS-Cambuci (Dr Susana Gualda de Freitas Rodrigues), UBS Saão Jorge (Dr Mia Umeda), Selsdon for their valuable contribution to the study. The authors are also grateful to the doctors, staff and patients of the following general practices in São Paulo and London: UBS-Cambuci (Dr Susana Gualda de Freitas Rodrigues), UBS Saão Jorge (Dr Mia Umeda), Selsdon (Dr Arnaud Jean, Dr Maria da Consuela de Freitas Rodrigues), UBS São Jorge (Dr Maria dos Remeneses), Setebon Park Medical Practice (Dr Henri Parmentier and Ms Pat Davey), Surrey Docks Health Centre (Dr Noel Baxter), Parkside Medical Practice (Dr George Varughese) and Hambleden Clinic (Dr Patricia Christle).

**References**

Literature and psychiatry

Femi Oyebode

Reading works of fiction and attending to the language, the dialogue, the mood is like listening to patients. In both activities, we enter into other worlds, grasp something about the inner life of characters whose motivations may be unlike our own. D. H. Lawrence referring to this aspect of the novel wrote: ‘It can inform and lead into new places the flow of our sympathetic consciousness, and it can lead our sympathy away in recoil from things gone dead. Therefore the novel, properly handled, can reveal the most secret places of life’. Is this not also, partly, the task of psychiatry?

Mindreadings: Literature and Psychiatry (ed. Femi Oyebode) has recently been published by RCPsych Publications.