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The Association or Otherwise of the Functional Somatic Syndromes

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Abstract

Objective—the Functional Somatic Syndromes (FSS) show considerable co-morbidity, leading some to suggest they may be aspects of the same disorder. This study aims to review the evidence for overlap in the phenomenology of the FSS.

Methods—a selective review of peer-reviewed articles on the co-occurrence of FSS symptoms and diagnoses.

Results—considerable evidence of overlap was found at the level of symptoms, of diagnostic criteria, and of clinical diagnoses made.

Conclusions—phenomenological commonalities support a close relationship between the FSS, though differences remain in other domains. Whether the FSS may best be considered the same or different will depend on the pragmatics of diagnosis.

Keywords

diagnosis; Chronic Fatigue Syndrome; Irritable Bowel Syndrome; Fibromyalgia; phenomenology; co-morbidity

Introduction

Somatic symptoms without a clear medical explanation are common in the community and in medical settings(1-4). Many people report more than one such symptom(3,5), and these multiple symptoms are sometimes grouped together as the various "Functional Somatic Syndromes" (FSS). Of itself, this term tells us nothing about aetiology - in particular there is no implication that these symptoms arise through the hypothetical process of somatisation. Simply put, these are clusters of physical symptoms occurring together for which no adequate medical explanation has been found, and which doctors have grouped into syndromes. There is a long and changing list of these FSS, which currently includes chronic fatigue syndrome, irritable bowel syndrome, and multiple chemical sensitivity - every medical specialty has at

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least one (see table 1). There is much in common between these syndromes, epidemiologically, phenomenologically, and clinically, in terms of history, treatment and doctor-patient relationships(6). Though the division of syndromes into the medically-explained and unexplained is too simplistic for the complex aetiology of modern medicine, it remains the case that no confirmed organic aetiological markers have been found to distinguish the FSS. The lack of distinguishing pathophysiology, combined with the evidence of commonality, have led some to propose that these syndromes may be manifestations of the same illness(6,7). In this article we will selectively review the evidence for and against that proposal.

Are there more similarities than differences in the phenomenology of the Functional Somatic Syndromes?

A glance at table 1 reveals a group of syndromes that would appear to have little in common, other than the absence of an accepted, clear-cut aetiology. In particular, the symptoms after which most are named suggest little overlap, being segregated by physiological system. So it is perhaps surprising that anyone would think ‘irritable bowel syndrome’ (IBS) an associate of ‘tension headache’. But the neat taxonomy suggested by table 1 belies the diversity of symptoms involved in the presentation of these syndromes: it is extremely common for those with irritable bowel symptoms to also report headache(8), and vice-versa(9). The lists of symptoms reported by patients with these conditions are long, and overlap considerably. Furthermore, the aetiological relationships suggested by such names as ‘tension headache’ or ‘multiple chemical sensitivity’ are either speculative, or, as in ‘premenstrual syndrome’, descriptive. This is clearly seen when the names of these syndromes are compared across languages or cultures. The term for Irritable Bowel Syndrome is ‘Spasmodic Colitis’ in French, for example, while Hyperventilation Syndrome is known as ‘Spasmophilia’. The French terms suggest quite different pathophysiologies from their English counterparts. The names of our FSS may be suggestive, in short, but at present, none are aetiological.

Without the organising principles afforded by determinate aetiology or pathophysiology, the functional somatic syndromes (FSS) are characterised by their symptoms. And in the spirit popularised by DSM-III(10), their diagnostic criteria tend to be given by ‘checklists’ of these symptoms. One can therefore compare the phenomenology of the FSS by comparing their symptom checklists.

Do the criteria overlap?

Wessely et al(6) considered this question in regard to 12 FSS for which criteria were available. They found considerable overlap in symptoms - bloating or abdominal distension in 8, headache in 6, abdominal pain in 6, fatigue in 6, and so on. So it is unsurprising that an examination of symptom prevalence by syndrome reveals considerable overlap. While all patients with chronic fatigue syndrome (CFS) report fatigue, for example, 86% of patients with fibromyalgia (FM) do too; conversely, while all FM patients report arthralgia, so do 88% of CFS patients(11).

But what does this simple overlap tell us? Fatigue and pain are such ubiquitous features of illness that their involvement gives us few clues about disease processes: most diseases will have one or both as a symptom. Sub-arachnoid haemorrhage and meningitis may have almost 100% overlap in headaches without any suggestion that the boundary between them is blurred in any other important sense. Just sharing a symptom does not tell us much.

A more useful way of looking at the overlap may come from dividing the criteria into essential features and supporting (or ‘accidental’) features. The essential features of sub-arachnoid haemorrhage and meningitis are blood in the cerebro-spinal fluid and meningeal inflammation,

respectively. A headache certainly supports either diagnosis, and may be a fundamental part of the patient experience, but is not part of the diagnostic criteria: asymptomatic meningitis, for example, would be meningitis nonetheless. The situation for the FSS is different, since the lack of a discrete pathology means both essential and supporting features will be symptoms. Still, it makes sense that fatigue should be the essential symptom of CFS, for example, and arthralgia a symptom that supports the diagnosis, but is not required. And sure enough, the criteria for most FSS do not adopt *simple* checklists, but rather 'Chinese Menu'-style criteria, where some symptoms are essential, and others merely supportive. The 1994 CDC criteria for CFS(12), for example, require at least six months of persistent fatigue (essential feature) plus four or more (supporting) features from a list including sore throat, tender glands, headaches, and so on. FM, by contrast, is diagnosed solely by two essential features - musculoskeletal pain and the presence of tender points(13) - and all other reported symptoms, such as fatigue, may support the diagnosis, but are not required..

This is an attractive approach to classification, but it conceals a problem. The division into essential and accidental features comes originally from Aristotle(14), who argued that man, for example, was essentially rational, but only accidentally bipedal. While this makes good sense for 'man', it makes much less sense for any particular man, who is both bipedal and rational, to ask which is essential to him - his being bipedal is essential to him being 'ambulatory', for example(15). Similarly, for any patient, or group of patients, it is not clear why any symptom should be considered essential, unless it is to some prior conception, or some purpose. The meningeal inflammation is essential to meningitis because it provides an explanatory basis for the whole clinical picture of symptoms and therapeutics. But why should a patient's fatigue be essential, and not his pain? It might seem obvious that fatigue should be essential to chronic fatigue syndrome, but we must remember that 'chronic fatigue syndrome' was *constructed* on the basis of symptom profiles: and for every symptom considered essential to that construct, there were equally many symptoms rejected(16). Why should we not consider this construct to be arbitrary?

Several reasons suggest themselves. Firstly, the construct might reliably identify a separate group of patients from the symptom combinations of other FSS. Secondly, the group identified might differ from other FSS groups in other ways - epidemiologically, physiologically, or therapeutically. Thirdly, the groups might differ in some important psychological respects. We shall consider each of these in turn.

If you fulfil criteria for one syndrome, do you for others?

If FM and CFS were really (aspects of) the same underlying condition, then a high degree of comorbidity would be expected, but could not be explained by simple overlap of the diagnostic criteria. For meningitis and sub-arachnoid haemorrhage, focussing on the essential features of the disease rather than the headache identifies separate groups of patients, with almost no diagnostic overlap - no co-morbidity of haemorrhage and meningitis: does the same hold for FSS?

Patients with one FSS almost universally report symptoms of others(11). Wessely et al(6) draw attention to the literature reporting the symptomatic overlaps between on the one hand chronic fatigue syndrome and on the other fibromyalgia, tension headache, multiple chemical sensitivity, food allergy, premenstrual syndrome, and irritable bowel syndrome. Irritable bowel syndrome was likewise associated with symptoms of hyperventilation syndrome, fibromyalgia, chronic fatigue syndrome, tension headache, atypical facial pain, non-cardiac chest pain, chronic pelvic pain, non-ulcer dyspepsia, and premenstrual syndrome.

Of course these are just symptoms, not diagnostic criteria, which are more complex for a variety of reasons - the structuring of symptoms into essential and supporting, the time course

requirements, the requirement for severity or functional impairment. Fortunately many other studies have used diagnostic criteria, rather than symptoms. Aaron & Buchwald reviewed 53 studies where patients with one FSS were assessed by the formal diagnostic criteria for another (17). They found that between 35 and 70% of patients with CFS met criteria for FM, 58-92% met criteria for IBS, and 53-67% showed multiple chemical sensitivity. Similarly, 75% of patients with FM met criteria for temporomandibular disorder, 32-80% met criteria for IBS, and 55% described multiple chemical sensitivity. Equally high rates were found for IBS, but for other, less studied disorders, such as temporomandibular disease and interstitial cystitis, the rates of concordance appeared to be lower. In a more recent large Swedish Twin study, Kato et al(18) looked at the co-morbidities of chronic widespread pain, as the cardinal symptom of fibromyalgia. They reported considerable co-occurrences with CFS (OR= 23.2), depressive symptoms (OR= 7.4) and IBS (OR=5.3). The authors used co-twin analysis to demonstrate that these associations were extensively mediated by unmeasured genetic and family environment factors. But while these fully explained the psychiatric co-morbidity, odds-ratios remained above 3 for CFS and IBS. There is still something about (meeting criteria for) one FSS that makes another co-morbid FSS more likely.

So it appears that not only do the criteria for FSS often overlap, but so do the patients identified by those diagnoses. And even in cases where the diagnostic criteria do not refer to the essential features of another disorder, the criteria continue to identify the same patients: 70% of patients with FM meet criteria for CFS(19), even though pain and tenderness do not appear in the essential criteria for CFS. As long as these syndromes are defined solely on the basis of symptom profiles, it can seem that the same patients, with the same symptoms, are being diagnosed on way or another on the basis of some arbitrary selection of these symptoms.

But even diagnostic criteria do not fully exhaust the factors that enter into making a diagnosis: the judgement of doctors and the presentation of patients will both have an impact. So it is possible that when it comes to making an actual diagnosis that some factor in the clinic room determines that a patient has CFS, or IBS. Yet even where recent, large-scale studies have looked at the rates of co-morbid diagnoses actually made, they still find elevated rates of, for example, FM in IBS (OR of 1.8)(20), and vice-versa (risk ratio of 4.4 in women, 3.9 in men) (21). These results are striking, since one would expect physicians to avoid making multiple diagnoses where possible. However, cohort studies of this kind are less good at detecting true co-morbidity since they do not rely on primary clinical data. The increased rates may therefore represent a degree of pathoplasticity, or changes in diagnosis, rather than true co-morbidity. But, though there is some evidence of pathoplasticity(22), population-based studies(16, 23, 24) find that the fatigue syndrome, for example, is relatively stable.

We should acknowledge the interest of the specialist physician here. The same patient could be diagnosed with temporomandibular disorder by the oral surgeon and then with fibromyalgia by the rheumatologist; and thus the apparent diversity of syndromes may be no more than an artefact of medical specialisation(6,19).

In summary, at every level of clinical-phenomenological assessment - symptoms, criteria, and actual diagnoses - there are greatly increased rates of co-morbidity, of overlap. This lends support, as far as it goes, for those who would argue that the FSS are all one, or at least closely related. But the phenomenological is only one consideration - the FSS may differ in many other respects.

Do the syndromes differ in other ways?

The perceived commonalities of epidemiology, psychosocial risks, management and outcome, when combined with the absence of pathognomonic tests and overlapping symptoms have

historically led some to suggest that the similarities outweigh the differences between these syndromes. Freud's is perhaps the most famous, but certainly not the first, and far from the only attempt to group medically unexplained symptoms under a single model(25). More recently it has been argued that the FSS are still substantially similar in these respects(6); although not everyone is persuaded(26). These other aspects are explored in detail in the other presentations in this issue, and we shall not recapitulate them here. Suffice it to say that the commonalities remain impressive, and the increasing number of differences is intriguing. The interpretation of these, however, is more complex still.

Let us consider one illustrative recent finding, that different infective organisms differentially precipitate CFS and IBS(27). This is clear evidence that CFS and IBS are different. But different in what way? In the way that a staphylococcal dermatitis differs from a streptococcal dermatitis? Or in the way that a streptococcal dermatitis differs from a streptococcal meningitis? Clearly, in both of these senses there are important differences *and* important commonalities; whether we want to consider a streptococcal dermatitis different from a meningitis depends on our purpose: the way we classify is ultimately instrumental. Classifying by infective organism is no more 'real' than classifying by organ system - they each have their utility. What purpose, then, could it serve to consider CFS and IBS the same, if their aetiological risks are essentially different and their symptoms perhaps only accidentally similar? One answer could be that it may serve to describe a commonality of disease process, of the psychosocial role in the generation, maintenance, and treatment of symptoms.

Does this mean they are all psychosomatic?

No. Though a psychosomatic view of FSS has been popular in the past, it is by no means implied by the 'one syndrome' hypothesis(26) - even if, as seems probable, the psychosocial is *relevant* to the aetiology, pathophysiology and management of FSS. The relationship of the psychosocial and psychiatric with FSS is explored elsewhere in this issue. But the same sorts of questions of overlap that we have discussed here have been discussed with respect to the FSS, anxiety and depression. There is no doubting that there is a relationship between them, though it is complex(28). For CFS, there is a linear relationship between the number of CDC symptoms and psychiatric morbidity(16), and this cannot be explained simply as a psychological reaction to physical illness and/or disability(28). But the high rates of psychiatric morbidity are far from sufficient to explain the prevalence of FSS.

Another clear relevance of the psychosocial is in treatment, where cognitive behavioural therapies have shown success in a number of FSS(29). These therapies offer cognitive-behavioural models for symptom persistence and, in some cases, symptom generation. More generally, it is a platitude that all symptoms are cognitively mediated. But this is not the same as a 'psychosomatic' or 'imaginary' model: sleep in CFS really is disturbed, and may have been provoked by any number of organic illnesses, for all that a cognitive-behavioural cycle can be argued to sustain it. The patient's beliefs about their illness play a key role in the cognitive model, and in the presentation of that illness(30). This idea, of the centrality of the psychosocial role, may serve as a kind of grouping principle, as an important way in which the FSS are importantly thought to be the same; but equally, the specific psychosocial roles in each FSS reveal a further way in which they differ.

The patient's perspective

In this discussion of the different perspectives from which the FSS may be considered, we finally come round to the patient's. Giving a diagnostic label has potentially huge significance for the patient(31). And which particular diagnostic label may make a considerable difference (32). This is not to reanimate the moribund anti-psychiatry view that the label is all. Disposing

of the schizophrenia label does not abolish psychosis, or the problems of patients with psychotic symptoms. But we do accept that labels shape and reflect how patients respond to illness. CFS & FM, for example, are the syndromes where there is arguably the greatest overlap, including in their response to graded exercise(33,34); yet a glance at online discussion groups reveals dramatically different views on its application between the two disorders.

If a diagnostic system divided along the lines of medical specialties seems arbitrary, one that accords with patients' views is the height of pragmatism(35). Where diagnoses are contentious, and the evidence base for one system or another limited, a classification that minimises conflict may serve far more effectively as a platform for recovery(31).

The same but different

For all the commonality, the differences between the FSS cannot be simply ignored. Though there are substantial overlaps in symptoms and patients, these are far from universal. A latent variable analysis of patients with somatic symptoms (36), suggested a best fit of a five-factor model - CFS-like, IBS-like, FM-like, depression and anxiety - but also a large common factor: yes, they had much in common, and no, they are not the same. For some classificatory purposes it may be best to consider the FSS as the same, and for other purposes as different. Though this may seem pusillanimous, we should remember that all our scientific classifications are instrumental: light is both a wave, and in other contexts a particle, and, with our current understanding, there is simply no better, no more truthful way to describe it(37). And in the FSS, a diagnosis that respects the patient's view of their illness stands to be both instrumentally and pragmatically apt.

Abbreviations

IBS, Irritable Bowel Syndrome; FSS, Functional Somatic Syndrome; DSM, Diagnostic & Statistical Manual; CFS, Chronic Fatigue Syndrome; FM, Fibromyalgia; OR, Odds Ratio.

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Table 1

Some Unexplained Somatic Syndromes by Specialty

Specialty	Syndrome
Gastroenterology	Irritable bowel syndrome
Gynaecology	Chronic pelvic pain
Rheumatology	Fibromyalgia
Cardiology	Atypical chest pain
Infectious diseases	(Post-viral) fatigue syndrome
Respiratory medicine	Hyperventilation syndrome
Orthopaedics	Chronic lower back pain
Neurology	Tension headache
Immunology	Idiopathic environmental intolerance