

Medically Unexplained Physical Symptoms in Medical Practice: A Psychiatric Perspective

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Clusters of medically unexplained physical symptoms have been referred to in the literature by many different labels, including somatization, symptom-based conditions, and functional somatic syndromes, among many others. The traditional medical perspective has been to classify and study these symptoms and functional syndromes separately. In psychiatry, current taxonomies (*Diagnostic and Statistical Manual of Mental Disorder, 4th edition*, and *The International Statistical Classification of Diseases and Related Health Problems, 10th revision*) classify these syndromes together under the rubric of somatoform disorders. In this article we approach medically unexplained physical symptoms from a psychiatric perspective and discuss the common features that unite multiple unexplained symptoms or functional somatic syndromes as a class. Included in this article is a discussion of nosological issues, clinical assessment, how these syndromes are viewed within the various medical specialties, and clinical management and treatment. **Key words:** functional somatic syndromes, primary care, somatization, somatoform disorders. *Environ Health Perspect* 110(suppl 4):631–636 (2002). <http://ehpnet1.niehs.nih.gov/docs/2002/suppl-4/631-636escobar/abstract.html>

Introduction

Syndromes characterized by clusters of somatic symptoms that remain medically unexplained are common in all areas of medicine. Many of these—such as irritable bowel syndrome, dyspnea, sick building syndrome, and mitral valve prolapse—are frequently seen in both primary and specialty care settings. Regardless of the label used to describe any of these syndromes, taken as a whole they represent one of the most frustrating and intractable puzzles in primary and specialty care. In fact, research in primary care settings throughout the world has shown that in about one-third of primary care patients, no organic (i.e., nonfunctional) diagnosis can be offered as a reasonably firm medical explanation for the physical complaints. Put another way, in the majority of cases (or about two-thirds of patients) no allopathic disease entity can be differentially diagnosed and unequivocally established as the principal determinant of a given patient's presenting somatic complaints (Ustun and Sartorius 1995). The situation is similar in specialty care. In fact, a study of the most frequent visitors to specialty clinics shows that no firm diagnosis can be proffered for over 20% of the patient care episodes generated by the most frequent visitors to specialty care clinics (Reid et al. 2001). Finally, research has shown that a full or subthreshold mental disorder can be reliably diagnosed and alternatively account for the presenting physical complaints of at least one-third of primary care patients who present with physical symptoms (Ustun and Sartorius 1995).

In this article we will discuss the common features uniting the functional somatic syndromes as a class. By emphasizing the common characteristics or overarching elements

of these disorders, we do not mean to imply that specific disorders (e.g., fibromyalgia) within this somatic syndromes classification do not have distinctive features that are important for research and clinical management, or does this discussion of functional somatic syndromes as a class imply that this class should be construed as a sturdy disease entity akin to diabetes in internal medicine or Alzheimer's disease in psychiatry. In considering functional syndromes qua class, we briefly discuss nosological issues, clinical assessment of unexplained symptoms, notions about these syndromes that are adumbrated within the various specialties, clinical management, and treatment. A conceptual framework steeped in both psychiatry and psychology will frame the discussion throughout. This approach is taken despite the fact that affected patients and advocates of the specific functional somatic syndromes tend to be wary of, if not hostile to, the psychiatric perspective as applied to these conditions. In the interest of full disclosure, note that the first author is a practicing and teaching research psychiatrist, and the co-authors are clinical and research psychologists.

Nosological Issues

Numerous descriptive labels have been applied to cases of multiple unexplained physical symptoms. These labels range from often-pejorative colloquial and pseudotechnical terms to the sometimes trendier specialty-specific syndrome labels. A number of terms that describe a majority of these clusters of medically unexplained symptoms have been accumulating in the literature for several decades. These terms include somatization, somatization symptoms, medically unexplained physical symptoms,

multiple medically unexplained symptoms, persistent symptom syndromes, symptom-based conditions (Hyams 1998), functional somatic symptoms, and functional somatic syndromes, among others.

Several of the medical specialties have proposed a number of specialty-specific labels to designate these rather vague, nonspecific syndromes. Although incorporating remarkably similar clinical features, these specialty-specific labels inevitably assume a parochial paradigm, implying that the syndrome under scrutiny may be unique to that given specialty, thus selectively emphasizing certain body organs or symptom clusters instead of others. In doing this, the specialties assimilate the phenomena into preconceived nomenclatures, modeling them after currently favored theories of etiology, course, and treatment. Often, the fit of phenomena to specialty models is somewhat forced and lacks scientific rigor. For this reason, and because there is no "gold standard" against which these syndromes can be evaluated, the use of more generic descriptors rather than diagnostic labels should be the preferred strategy for the systematic investigation of these entities. Some of the specific labels coined by specialists have been endorsed, incorporated, vigorously elaborated, and made popular by afflicted patients, the media, and advocacy groups, even though these labels do not refer to well-established, bona fide medical disorders. Inevitably, certain labels used for these syndromes "stick" more and attain a more "glamorous" or less-stigmatizing status than others. In the end, the social desirability of the labels influences their clinical use by physicians, acceptance by patients, and degree of mass consumption by news media and advocacy groups.

Functional Somatic Syndromes

In the past few years, medical journals such as *The Lancet*, *British Medical Journal*, *New England Journal of Medicine*, *JAMA*, *Annals of*

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Internal Medicine, and others published research articles and reviews on the topic of functional somatic syndromes. Although the term functional may not be entirely accurate in this instance, it has served as practical umbrella to a large number of disorders across various medical specialties characterized by a high level of medically unexplained physical symptoms. The latter term would serve as the “monetary unit” of the system. Both terms seem relatively neutral, properly descriptive, and nonpejorative, and may be generally acceptable to the various specialties, hence their use throughout the article.

Excellent reviews of these syndromes appeared almost simultaneously on both sides of the Atlantic (Barsky and Borus 1999; Wessely et al. 1999), highlighting their common epidemiologic, clinical, and psychopathological aspects. In our opinion, these reviews have set the stage for the much-needed collaborative research in this area. Entities lumped under this “functional” category include a long list of somatic symptom complexes, many of which wear rather unique “specialty outfits.”

Despite the multiplicity of labels included in Table 1, a detailed inspection of them brings to mind the “old wine in new bottles” adage. That is, despite their many similar attributes, there has been a tendency over the years to split what we view as a traditional category within psychiatry (somatization) into many different specialty-specific syndromes. Yet we would emphasize that despite a smattering of distinctive features, each of these syndromes shares common elements such as

- The absence of a gold standard against which a specific diagnosis can be confirmed or ruled out.
- The presence of multiple unexplained physical symptoms originating from several different organ systems.
- Psychiatric comorbidity, often in the form of several coexisting diagnoses from the *Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV)* (American Psychiatric

Association 1994) (e.g., depression plus panic disorder), including personality disorders.

- No clearly articulated pathophysiology. Despite a number of potential pathophysiological mechanisms (symptom amplification, muscle contraction, catecholamine release, persistent neurobiologic dysfunction, neurologic hyperreactivity, elevated cortisol) (Rief et al. 1998) enumerated as relevant to the origin of many of these syndromes, no clear pathophysiological explanation has emerged for any of them.
- No consistent explanation emanating from physical and laboratory assessments.
- No good fit with rules of allopathic medicine.
- Comparable responses to certain psychological (e.g., cognitive behavior therapy [CBT]) and pharmacologic (e.g., antidepressants) interventions.
- The emergence of emotionally charged, highly politicized patient advocacy groups.

The last point mentioned merits elaboration. That is, the review articles mentioned above stimulated an unusually large number of responses in the form of letters to the editor to *Annals of Internal Medicine* and *The Lancet* (Barsky and Borus 1999; Wessely et al. 1999). This barrage of letters consisted mainly of hostile replies that appeared to be related primarily to the inclusion of chronic fatigue among these functional syndromes (Clemenger 2000; Colby 1999; English 2000; Goudsmit 2000; Hedrick 2000; Kurt 2000; Leonard et al. 1999; Madill 1999). It thus appears that advocates of patients suffering from chronic fatigue as well as those who identify with other “medicalized” labels (e.g., Lyme disease, environmental disorders) form highly passionate and vocal groups whose virulence often makes the headlines (Anonymous 1998).

The Psychiatric Perspective: Somatoform Disorders

In psychiatry these syndromes are being classified as somatoform disorders in current taxonomies [*DSM-IV* (American Psychiatric Association 1994); *International Statistical*

Classification of Diseases and Related Health Problems, 10th revision (ICD-10) (WHO 1992)] simply on the basis that the defining symptoms remain essentially unexplained from a conventional medical perspective. The term somatoform is a rather odd word that borrows both a Greek (“soma”) and Latin (“form”) root. The derived term somatization, which refers to the manifestation of psychological distress as unexplained physical symptoms, is often vehemently rejected by patients who adhere to more medicalized labels (e.g., chronic fatigue) to identify and substantiate their ailments. To many of these patients and advocates, the application of a psychiatric label such as somatization—or even a more common label such as major depression—implies a lack of legitimacy or character foible. Even in the era of modern medicine, the psychiatric label continues to be stigmatized, whereas the bona fide medical diagnosis seems to be a more convenient, fashionable, and acceptable label for both patients and physicians. Even pharmaceutical companies seem to be aware of this phenomenon and have responded by relabeling medications predominantly used in psychiatry, such as Wellbutrin (Glaxo Smith Kline, Research Triangle Park, NC) and Prozac (Eli Lilly and Co., Indianapolis, IN), to market them for the treatment of other nonpsychiatric conditions such as nicotine addiction (Wellbutrin changed to Zyban) and premenstrual syndromes (Prozac changed to Serafem).

Although the European criteria for somatization (Goldberg and Bridges 1988) requires patients with unexplained symptoms also to meet criteria for a psychiatric disorder, the North American criteria do not clearly indicate this requirement. In our opinion, the lack of a medical explanation by itself does not necessarily qualify a symptom as psychiatric. Elsewhere, Escobar (Escobar 1995) has provided guidelines for probes and algorithms to determine whether the assessment and treatment of an unexplained physical symptom is likely to benefit from a psychiatric point of view. These guidelines suggest that a medically unexplained physical symptom is likely to fit within a psychiatric framework if that symptom meets one or more of the following criteria (the more criteria present, the more likely it is that a psychiatric consult would be beneficial):

- Symptoms are numerous and represent several different organ systems.
- Symptoms coexist with symptoms of a major psychiatric disorder such as major depression or panic disorder.
- Symptoms closely follow traumatic events.
- Symptoms lead to psychological gratification (secondary gain).
- Symptoms represent a predictable personality trait for the subject.

Table 1. Functional somatic syndromes in various medical specialties.

Specialty area	Functional syndromes
Allergy	Food allergies
Cardiology	Atypical chest pain, noncardiac pain, mitral valve prolapse
Dentistry	Temporomandibular joint syndrome, atypical facial pain
Ear, nose, and throat	Tinnitus, dizziness, globus syndrome
Gastroenterology	Irritable bowel, nonulcer dyspepsia
Internal medicine	CFS, chronic Lyme disease, hypoglycemia, chronic candidiasis
Military medicine	Gulf (Persian) War syndrome
Neurology	Tension headache, pseudoseizures
Obstetrics and gynecology	Premenstrual syndrome, chronic pelvic pain
Occupational medicine	Multiple chemical sensitivity, sick building syndrome
Orthopedics	Carpal tunnel syndrome, low back pain, herniated disc
Plastic surgery	Silicone-associated connective tissue disease
Pulmonary medicine	Dyspnea, habit cough, laryngeal dysfunction, hyperventilation
Rehabilitation medicine	Repetitious stress injury, chronic whiplash
Rheumatology	Fibrositis, fibromyalgia

- Symptoms become persistent, join a conglomerate of other symptoms, and convey such attitudes as overuse of medical services and dissatisfaction with medical care.

Alternatively, a medical etiology should be vigorously pursued in the case of single symptoms that appear *de novo*, point to one to two organ systems, and are not accompanied by significant symptoms of depression or anxiety.

Somatization Disorder

Naturalistic studies in North America validated an extreme form of the syndrome originally designated as hysteria, then renamed Briquet syndrome, and finally, somatization disorder (SD), the term used in current nomenclatures (Feighner et al. 1972; Goodwin and Guze 1996; Purtell et al. 1951). SD is a chronic, disabling syndrome presenting a facade of physical symptoms associated with significant psychopathology and functional disability. Individuals with SD tend to seek care in general medicine or specialty medical settings in lieu of seeking mental health services (Escobar et al. 1987; Swartz et al. 1991). According to several studies, SD is a rare diagnosis in the general population (Swartz et al. 1991) but seems to be relatively more frequent in primary care settings (Escobar et al. 1989; Gureje et al. 1997; Katon et al. 1991). The evolution of the SD diagnosis in North America shows that the somatic symptom thresholds required for making the diagnosis were arbitrarily set in succeeding nomenclatures by either inflating or deflating the criteria as per committee deliberations rarely based on research data. For example, the original criteria set forth by the Washington University group (Feighner et al. 1972) required the presence of 25 symptoms from a list of 59 possible symptoms (including depressive and psychotic items) in addition to certain attitudinal features (dramatic, vague, or complicated medical history). *DSM-III* (American Psychiatric Association 1980) transformed the SD diagnosis into what it is today, a simple count of somatic symptoms, setting the threshold at 14 symptoms out of 37 possible symptoms for males and 16 of 37 possible symptoms for females. *DSM-III-R* (American Psychiatric Association 1987) further decreased the symptom count to 13, but the same threshold was set for both sexes. In *DSM-IV* (American Psychiatric Association 1994) the downward trend continued, decreasing the overall number of symptoms to eight. However, the *DSM-IV* criteria now required that symptoms come from four designated organ systems. Given what seem superficially to be slight changes in criteria, there have been profound effects on the kind of patient that is designated as a case (Escobar et al. 1998a).

Validating Somatization as Categorical Diagnosis

Several decades ago, psychiatrists at Washington University in St. Louis, Missouri, proposed a five-step procedure for validating psychiatric diagnoses, following a medical model approach. These steps included clinical description, laboratory studies, delimitation from other disorders, and follow-up and family studies (Feighner et al. 1972). Unfortunately, one of those critical steps, the objective laboratory finding (the gold standard for many medical diagnoses) was not applicable then and still remains elusive for the majority of mental disorders. Therefore, most mental disorders continue to be designated with the word functional, in efforts to distinguish them from the truly organic or biological disorders. Unfortunately, to further complicate matters, changes in the nosologies continue to be rather arbitrary and do not adhere to the tradition outlined above. For example, the *DSM-IV* criteria for SD originated from secondary analyses with multivariate methods of an old data set from Scandinavia (Cloninger 2001).

Given these issues and the confusing state of affairs across specialties for classifying these syndromes, we believe that the use of dimensional constructs such as abridged somatization, when used as screen or point of entry, may facilitate the collaborative study of these phenomena across medical specialties. With increased levels of cross-specialty research, refinements of these indices are sure to follow apace.

From the Categorical to the Dimensional: Abridged Somatization

Our clinical and research observations (Escobar et al. 1987) led us to view the functional somatic syndromes as existing on a continuum ranging from few medically unexplained symptoms to many, with SD itself placed at the extreme of this frequency/severity spectrum. In our current thinking, any given cluster of medically unexplained physical symptoms may have distinctive qualitative elements; hence the underlying taxonomic model may very well be a hybrid model, including dimensional features as well as discontinuities.

In the late 1980s we proposed an abridged construct of somatization for identifying cases, by demonstrating that lowering the threshold for somatization to four and six symptoms for males and females, respectively, increased the prevalence rate of somatization cases 100-fold relative to the full diagnosis of SD, while still predicting all relevant outcomes (use of services, disability, psychopathology) (Escobar et al. 1987). Originally, the abridged somatization construct was operationalized in terms of the 37 somatic symptoms included in the

Diagnostic Interview Schedule (DIS) (Robins et al. 1981). Since its inception, this abridged construct of somatization, also known as Somatic Symptom Index and Somatization Syndrome, has been a convenient tool for doing systematic research on somatization in clinical and community populations. The abridged measure has good properties, including test-retest reliability and construct validity. For example, the test-retest is about 0.55, whereas the test-retest of the SD itself is negligible. (Brody et al. 1998). Some of the evidence on validity is cited below. There are, in fact, more than 10 published peer-reviewed articles relating to the external validity of the abridged somatization construct (Andreski et al. 1998; Canino et al. 1987; Escobar et al. 1992, 1998b; Garcia-Campayo et al. 1998; Golding 1994; Gureje et al. 1997; Hiller et al. 1995; Johnson et al. 1996; Kapoor et al. 1995; Katon et al. 1991; Kroenke et al. 1998; Labott et al. 1996; Smith et al. 1995; Sullivan et al. 1993; Walker et al. 1995). The prevalence of high levels of unexplained physical symptoms measured by the abridged construct is in the range of 20% in primary clinics worldwide, and it is persistent in about 50% of those subjects (Gureje and Simon 1999).

Instruments to Study Somatization across Specialties

The somatic symptoms that need to be elicited to assess somatization as defined in the DSM criteria include neurological, gastrointestinal, cardiopulmonary, musculoskeletal, female reproductive, and genitourinary symptoms. All of these symptoms are included in several well-known current epidemiologic and clinical instruments such as the DIS (Robins et al. 1981), the Composite International Diagnostic Interview (CIDI) (Wittchen et al. 1991), and the Primary Care Evaluation of Mental Disorders (PRIME-MD) (Spitzer et al. 1994). The systematic use of these instruments should facilitate collaborative research between mental health, primary care and specialty services.

Composite International Diagnostic Interview Somatization Schedule

The CIDI (Wittchen et al. 1991) includes over 40 individual items that elicit and probe symptoms and diagnoses of SD and hypochondriasis and also allows for the use of other symptom thresholds such as abridged somatization. Despite its relative length and probing requirements, this somatic inventory can be effectively administered to patients by trained lay interviewers, and yields reliable symptom counts and diagnoses. The CIDI has been translated into many different languages, and has been used in 17 countries successfully (Rubio-Stipec et al. 1993).

A second instrument, the PRIME-MD (Spitzer et al. 1994), is a simple, practical, and unobtrusive questionnaire that can be self-administered. It has been widely used in primary care settings, where it is considered a reliable tool in screening for mental health problems. The PRIME-MD includes 15 key somatic items, as well as items to assess the presence of other mental disorders such as major depression, panic, generalized anxiety, and alcohol disorders. In our experience, this instrument has been very useful for identifying clusters of unexplained physical symptoms while also allowing the busy primary care physician to concurrently screen for the other psychiatric disorders. A threshold of three unexplained symptoms (as assessed by the physician) has been associated with somatization (Kroenke et al. 1997). In the case of depression, the PRIME-MD contains two key questions, that are highly sensitive when endorsed, identifying virtually all patients with major depression (96%) (Brody et al. 1998). In addition, the one-page screener includes a useful question to obtain the patient's self-assessment of his or her general health status. When this self-assessment of physical health differs substantially from the physician's objective assessment (such as the patient who describes his or her health as poor when the physician assesses his or her health as very good), it can be taken as a clue that somatization may be involved in the case. Identifying these clues can serve as a practical point of entry for an open discussion of the patient's health status.

Medically Unexplained Physical Symptoms and Psychological Distress

In most cultures, unexplained physical symptoms are viewed as nonspecific idioms of distress (Escobar 1995). For example, high levels of medically unexplained symptoms are often observed after exposure to a variety of traumatic events. In a community sample, Golding (1994) demonstrated that individuals at or above the abridged somatization threshold were much more likely than those below the threshold to report having experienced sexual/physical attacks during their lifetime. In the only prospective study to date, a study of individuals exposed to severe flash floods in Puerto Rico, the senior author observed that a higher number of neurological and gastrointestinal symptoms were reported by individuals directly affected by the event compared with those in other regions of the island (Escobar et al. 1992). Other authors have also made similar observations of an increase in reporting physical symptoms in front of major disasters. In the case of children exposed to the Chernobyl disaster, Bromet et al. (2000)

observed that high levels of somatic symptoms continued to be reported more than a decade after the disaster. In a prospective study of 1,200 individuals with various degrees of traumatic exposure, those meeting criteria for posttraumatic stress disorder had a 3-fold increase in levels of abridged somatization compared with those without the disorder (Andreski et al. 1998). Obviously, no cause-effect relationship can be unambiguously ascribed in these instances, as it is also likely that individuals with high levels of somatic symptoms may be also more likely to report negative life events. There is usually no corroborating evidence in this kind of research that verifies the reports of individual respondents about life stress.

Medically Unexplained Symptoms in Primary Care

A number of studies in primary care have used the abridged somatization construct as the basis for designating a case of somatization (Escobar et al. 1998b; Gureje et al. 1997; Katon et al. 1991; Smith et al. 1995; Sullivan et al. 1993). This strategy has been recommended as a way to promote collaborations, refine definitions, and enhance generalization of research findings in primary care settings (Katon et al. 1991). In primary care patients, Kirmayer and Robbins (1991) described three rather distinct syndromes, including symptom amplification (hypochondriasis), somatic equivalents of anxiety and depression, and high levels of unexplained physical symptoms defined according to the abridged somatization threshold. Similarly, Katon and Walker (1998) studied a sample of primary care users at a health maintenance organization in Seattle, Washington, who had been classified as distressed high users of primary care services. A large proportion of these patients met the criteria for abridged somatization. Smith et al. (1995) assessed the effects of a brief intervention on relevant health outcomes in somatizing patients from various primary care practices in Arkansas using the abridged somatization construct as the criterion to define a case.

Medically Unexplained Symptoms in Specialty Clinics

Chronic Fatigue Syndrome

In the case of chronic fatigue syndrome (CFS), Johnson et al. (1996) used the abridged construct on a sample of primary care patients with CFS. The designation of a case on the basis of these criteria effectively separated CFS patients from healthy controls and also from patients with depression.

Ear, Nose, and Throat Clinics

Sullivan et al. (1993) studied patients referred to a private otolaryngology practice

for evaluation of a persistent complaint of dizziness. In this patient population, meeting criteria for abridged somatization predicted psychiatric rather than medical co-morbidity.

Pulmonary Clinics

Labott et al. (1996) examined a small sample of patients presenting at a specialty pulmonary clinic with unexplained respiratory symptoms and compared them with a group of controls. They found that two of three patients with unexplained symptoms, but only one of five controls, met the abridged somatization criteria.

Obstetrics and Gynecology

In patients with chronic, unexplained pelvic pain, Walker et al. (1995) found a prevalence of abridged somatization more than 5 times higher than that of a control group.

Psychosomatic Clinics

Hiller et al. (1995), in Germany, used the abridged somatization construct to study a sample of 100 patients with psychosomatic disorders. The construct showed good discriminating power in separating mild and severe forms of somatization.

Although these reports suggest that the use of a somatic symptom threshold has practical value for research studies, it must be emphasized that the abridged construct has not been validated as a diagnosis, and that we do not propose it as a replacement for clinical diagnoses. It is simply a dimensional construct with demonstrated usefulness for defining cases that can be used for further epidemiologic and clinical inquiry.

Psychiatric Interventions and Medically Unexplained Physical Symptoms

Two large reviews recently examined the response of patients with several functional somatic syndromes to antidepressant medications and CBT. In the case of antidepressants, O'Malley et al. (1999) found an excellent effect of these drugs on fibromyalgia, headache, functional gastrointestinal disorders, and idiopathic pain syndromes (odds ratios ranging from 2.0 to 5.1).

A recent review of 31 controlled psychotherapy trials for the treatment of somatizing syndromes (Kroenke and Swindle 2000) indicates that CBT looks very promising as a treatment for many of these syndromes. The majority of the trials reviewed (25 studies) focused on the treatment of chronic fatigue, irritable bowel, and pain. Results of the studies show that although psychological distress improved somewhat (in 38% of the studies), physical symptoms proved to be the most responsive to treatment (in 71% of the studies). This review demonstrates that CBT can

be effective in reducing physical symptoms, independent of reducing psychological distress.

Research Support for the Study of Medically Unexplained Physical Symptoms

Unfortunately, little systematic research is currently taking place on the broad notion of functional somatic syndromes. The situation is even worse on the psychiatry side, as evidenced by ongoing federally funded research on somatoform disorders. For example, an inspection of the 2001 research portfolio of the large National Institute of Mental Health (NIMH) Division of Services and Interventions Research, shows that only 1% (7 of 601) funded grants are in the general area of somatoform disorders. Moreover, of these seven grants, almost one-half (3 of 7) are on body dysmorphic disorder, an intriguing but rare clinical entity. Even the bipolar disorder portfolio, which has been a source of concern for NIMH because it is considered to be quite depleted, includes at least 3 times as many funded grants as the area of somatoform disorders. Obviously, this lack of funding may be related to a lack of lobbying for the mental health façade of functional syndromes on the part of patients and their advocates. Because the research investment in this area is so small, it is not surprising to see that the number of scientific publications on these broad phenomena remains very low despite the high prevalence, morbidity, and cost of the problem. For example, a review of publications included in MEDLINE (2001) from 1996 to 2001 under the topics of somatization, somatoform disorders, psychophysiological disorders, and hypochondriasis shows that instead of increasing, publications in this area have decreased in the last few years.

Discussion

This review has outlined common features for the functional somatic syndromes seen in various specialty areas. Although we have presented the perspective of psychiatry and psychology, we have tried to articulate the need for systematic research and the potential for successful collaboration across specialties. Our review of the literature has convinced us that notwithstanding the diversity of labels, the many common elements shared by these functional syndromes suggest that we may be dealing with closely related phenomena. Unfortunately, although the problem of somatization seems to be quite prevalent and costly in primary and specialty care, it has been significantly understudied relative to other areas of medicine and psychiatry. In our view, the continuous specialization of medicine, current paradigms including biological

reductionism, and stigmatization of mental disorder are all factors that contribute to this state of affairs. All these biases tend to be reflected in popular as well as scientific discourse, hence the prevailing stigma and meager societal investment in this area. Moreover, the continuous operation of these factors may have contributed to the unfortunate persistence of the mind–body dichotomy beyond the 20th century. Our review, however, also outlines some promising developments. For example, in the last few years, general medicine journals have been printing leading articles on the subject, and collaborations between specialties have begun to sprout in both sides of the Atlantic.

Questions for Future Research

Clearly, there is a need for collaborative research that leads to a more rational classification of these syndromes. Moreover, once the syndromes are better classified, the intended therapies (CBT, pharmacotherapy) should be adjusted to the type of presenting symptoms or syndromes and evaluated using common, verifiable methodologies.

Our specific recommendations for further collaboration and study are as follows:

- Creation of multispecialty think tanks to study these complex syndromes. This should include the formation of collaborative research centers. For example, at our university, we are developing an Institute for Study of Unexplained Symptoms that includes basic scientists as well as representatives from psychiatry, family medicine, general internal medicine, rheumatology, infectious disease, and neurology.
- We advocate the use of common definitions, common descriptors, and the incorporation of common, well-established instruments (e.g., PRIME-MD, CIDI).
- A useful strategy to accomplish a practical goal would be to assess promising therapeutic interventions such as CBT for these syndromes across specialties.
- Lobbying efforts will be needed to increase research allocations by government, industry, and foundations for studying these syndromes.
- Finally, effective interventions should be properly marketed. This is particularly crucial in the case of psychosocial therapies.

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