A substantial number of patients encountered in different medical settings complain of physical symptoms not attributable to any known conventionally defined disease, that is, “medically unexplained” or functional somatic symptoms. In this paper, we name this phenomenon “bodily distress.” In most cases, such symptoms are mild and self-limiting; however, some patients are severely disabled. These patients are frequently given functional somatic syndrome diagnoses such as fibromyalgia, chronic fatigue syndrome, or irritable bowel syndrome; others may receive a somatoform disorder diagnosis. Research into the pathophysiology of these syndromes has suggested some unifying mechanisms, including aberrant functions of efferent neural pathways, such as the autonomic nervous system and the hypothalamic–pituitary axis, and alterations in central processing of sensory input. The syndromes may thus be viewed as different expressions of bodily distress, namely, (patho)physiologic responses to prolonged or severe mental or physical stress in genetically susceptible individuals. Bodily distress is hence not conceptualized as a maladaptive psychological response to somatic sensations, symptoms, or diseases. Nevertheless, psychological and behavioral factors may be involved in the initiation and perpetuation of bodily distress.

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doi:10.1016/j.psc.2011.05.008
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Beside causing a substantial decrease in quality of life, such illnesses are costly for society because of high health care use and missed working years. The prevalence of somatoform disorders in the general population is about 6%, the same as for depressive disorders. Despite a high need for care, however, bodily distress constitutes a low-priority area in most health care systems across the world and is grossly ignored in general psychiatry, even by many psychosomatic services. Most countries offer no or very limited specialized care for these patients, because most treatment options are reserved for patients with a particular symptom profile, namely, patients with specialty-specific functional somatic syndrome diagnoses. Consequently, the majority of patients with bodily distress are not offered evidence-based treatment.

In this paper, we examine the status of treatment and organizational models for specialized care for these patients.

CLASSIFICATION

A major obstacle in the organization of treatment of bodily distress is the inconsistent use of terminology for classification. Although psychiatrists may use somatoform disorder diagnoses according to the DSM-IV classifications, most patients are seen by general practitioners and specialists and receive specialty-specific syndrome diagnoses such as fibromyalgia, irritable bowel syndrome, chronic fatigue syndrome, or non-cardiac chest pain. There is disagreement as to whether these diagnoses and syndromes that include patients presenting with functional somatic symptoms represent a single disorder or multiple disorders. From the “lumping” point of view, functional somatic syndrome diagnoses are believed to be an artifact of medical specialization—caused by the diagnostic heterogeneity that exists across the different medical specialties. Increasingly, scientific evidence suggests that these conditions belong to the same family of disorders. Studies have indicated a huge overlap in symptoms and illness pictures between patients who have received different diagnostic labels. Moreover, functional somatic syndromes share similarities in etiology, pathophysiology, neurobiology, psychological mechanisms, patient characteristics, and treatment response, which speaks in favor of a common family of disorders. Some studies, however, support the “splitting” point of view, especially with regard to triggering factors and risk profiles for specific syndromes. Moreover, some studies indicate that symptoms of bodily distress cluster in groups of gastrointestinal, cardiopulmonary, and musculoskeletal symptoms, supporting the existence of different subtypes of bodily distress. Nevertheless, because there seem to be more similarities than differences between the functional somatic syndromes, it seems rational to treat them within the same service. To do this, a common language and a theoretical framework for understanding of bodily distress across medical specialties are highly needed. Although the new suggested somatic symptom disorder category of the DSM-V lumps most of the current subcategories of the DSM-IV somatoform diagnoses, it only captures patients with evident psychological or behavioral disturbances, thereby splitting patients with bodily distress into a group whose conditions are regarded as medical and a group whose conditions are conceptualized as psychiatric.

A new, empirically established approach is based on the identification of bodily distress syndrome (BDS) as a diagnosis in its own right that encompasses both the “non-psychiatric” functional somatic syndromes and “psychiatric” somatoform disorders. The diagnosis includes a multiorgan subtype and 4 single-organ subtypes (Fig. 1), and is hence not a pure lumping or splitting approach, but both a lumping...
and a splitting concept. In contrast with the DSM-V’s somatic symptom disorder category, the BDS diagnosis does not require specific psychopathology or behavioral features. Nevertheless, first evidence suggests that the BDS diagnosis captures patients with somatoform disorders according to DSM-IV as well as the functional somatic syndromes.24 In this paper, we focus on the diagnoses covered by the BDS concept, that is, the most important functional somatic syndromes and the somatoform disorders that are primarily characterized by physical symptoms. We do not discuss hypochondriasis/health anxiety or body dysmorphic disorder, which are primarily characterized by anxiety and cognitive symptoms rather than bodily distress.38

**TREATMENT**

Most systematic reviews and meta-analyses in the field of bodily distress are focused on single-syndrome diagnoses. Only few studies have reviewed the whole area systematically.29,39,40 Both these comprehensive reviews and reviews focused on specific syndromes41–43 conclude that pharmacologic agents working on the central nervous system are preferable to organ-oriented treatments and that interventions based on active patient involvement such as exercise and cognitive–behavioral therapy are currently the most promising treatments. There seems to be no clear differences between various functional somatic syndromes in terms of which treatment type works, namely, the specific symptom profiles seem to be nonessential for the choice of treatment strategy (Table 1).

Some evidence suggests that a combination of pharmacotherapy, exercise, and psychological interventions in multicomponent management programs is effective.29,62 These programs may also further include some types of organ-oriented treatments. For instance, various organ-oriented and symptomatic treatments have shown effect in the management of irritable bowel syndrome (eg, probiotics).63 The same is true for other functional somatic syndromes.29 Organ-oriented treatment...
### Table 1
Evidence for antidepressants, aerobic exercise and psychological interventions in different subtypes of bodily distress

<table>
<thead>
<tr>
<th>Symptom Profile (BDS subtype) and Corresponding Functional Somatic Syndrome or Diagnostic Label</th>
<th>GS-Type/Chronic Fatigue Syndrome</th>
<th>MS-Type/Fibromyalgia</th>
<th>GI-Type/Irritable Bowel Syndrome</th>
<th>CP-Type/Non-Cardiac Chest Pain</th>
<th>Multiorgan Type/Multiple Medically Unexplained Symptoms and Somatization Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of treatment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antidepressants</td>
<td>+29,41</td>
<td>+++44</td>
<td>+++45,46</td>
<td>?</td>
<td>+ +39,40,47</td>
</tr>
<tr>
<td>Exercise</td>
<td>+ ++31,41,48,49</td>
<td>+++50,51</td>
<td>?</td>
<td>?</td>
<td>+52</td>
</tr>
<tr>
<td>Psychological treatment (mainly CBT)</td>
<td>++ 41,49,53</td>
<td>+++54,55</td>
<td>+45,56,57</td>
<td>+58</td>
<td>+ ++39,40,47,52,59–61</td>
</tr>
</tbody>
</table>

Symptom profiles are ordered according to the BDS concept (see Fig. 1), whereas references refer to the corresponding diagnostic categories. Evidence ratings are based on Henningsen and colleagues\(^2\) and recent meta-analyses or high-quality, randomized, controlled trials. Only the most important references are listed.

*Symbols:*** +++, strong evidence; ++, moderate evidence; +, weak evidence; ?, no evidence, or lack of studies.*
may therefore play an additional role in the management of different subtypes of bodily distress. However, we do not know whether multicomponent treatment is more effective than single treatment elements, nor can we currently estimate the relative effects of the interventions that form part of multicomponent treatment approaches.

Despite a clear body of evidence for the efficacy of behavioral and cognitive treatments (Table 1), there seems to be some reluctance to recommend such treatments in non-psychiatric specialties. Thus, in the European rheumatologists’ guidelines for treatment of fibromyalgia, cognitive–behavioral therapy is only recommended as an optional treatment element for a limited number of patients, whereas such treatment according to the American Pain Society and meta-analyses plays an essential part in the management.\textsuperscript{62,64} Cognitive-behavioral interventions may even be the treatment of choice,\textsuperscript{54} since they are effective also in the absence of evident psychopathology.\textsuperscript{65} The mechanisms how these interventions reduce bodily distress are not fully understood, but evidence suggests that they have the potential to modify symptom experience and pain perception\textsuperscript{65,66} and to restore central nervous system abnormalities that are linked with functional impairment.\textsuperscript{67}
Although no studies on the topic exist, there seems to be a general agreement among experts that management of patients with bodily distress should be organized according to a stepped care model (Fig. 2) in which milder distress is treated in primary care and the more severe or complex cases are treated in secondary care. Specialist care for severe bodily distress (steps 4 and 5) can be organized in 2 ways (Fig. 3): Specialist...
services for single syndromes and diagnoses (eg, chronic fatigue syndrome, fibromyalgia, somatization disorder), and specialist services for all types combined, that is, BDS including both functional somatic syndromes and somatoform disorders.

**Syndrome-Specific Specialized Clinics**

Medical specialists have developed facilities for treating “their own” functional somatic syndrome within their own service such as rheumatologists treating fibromyalgia or infectious medicine treating chronic fatigue syndrome. This is a natural consequence of the large number of patients with these disorders they receive at their services (see Fig. 3A). Health care in these clinics is often mono-disciplinary, and dominated by pharmacologic treatment methods.64

The mainly mono-disciplinary nature of such fractionated specialized clinics is a drawback. The multidisciplinary model seems the most suitable for patients with severe and complicated BDS,29 but even if various specialty-specific clinics for single functional somatic syndromes were organized according to a multidisciplinary model, this may not be a rational strategy. First, establishing multiple different clinics, one for each functional somatic syndrome, is costly and inappropriate given that these clinics deliver very similar treatments. Second, the existence of various syndrome-specific clinics confirms the separate, specialty-dominated view on bodily distress and hence perpetuates fragmented care instead of moving toward a more generic model. Finally, and most important, fractionated specialized clinics may not be prepared to deal with patients who have symptoms from multiple organ systems. These patients often fulfill the diagnostic criteria for multiorgan BDS, and it may therefore be random which type of clinic they attend, or even worse, they may attend several clinics simultaneously and receive several, parallel, uncoordinated treatments.

**Specialized Integrated Clinics for Bodily Distress**

Integrated specialized clinics for bodily distress treat patients with different diagnostic labels under one hat (see Fig. 3B). The integrated approach has some clear advantages. First, it is obvious that patients with multiorgan BDS belong in such a clinic to prevent simultaneous treatment by different services or sequential treatment in different clinics. Second, it would make referrals much easier for family physicians and other doctors as they do not need to decide which service is the best for the patients—there is only one entrance to care. This also provides better possibilities for shared care models as the family physicians only need to relate to one multidisciplinary service rather than several, which is the case in the fractionated model. Presumably, most patients are happy to be treated for their multiple symptoms at a single clinic instead of several clinics, but this requires that specialists and primary care physicians are able to explain to the patients that their symptoms are expressions of bodily distress not caused by a medical disease and thus not requiring medical specialist treatment.

A third advantage of the integrated model is that it is cost-effective and ensures synergy between therapists and different medical specialists. A drawback, however, may be that it is difficult to warrant the presence of the necessary medical expertise in an integrated model because it involves nearly all medical specialties. Moreover, it can be necessary to tailor subtypes of treatment programs to special types of problems or to patients with single-organ BDS, which requires several similar treatment programs at the same clinic.

In conclusion, although there are arguments to support both integrated and fractionated approaches (Box 1), the integrated approach seems to provide more advantages, and it has achieved broad international support.10,29
Box 1

### Integrated versus fractionated treatment

<table>
<thead>
<tr>
<th><strong>Arguments supporting integrated treatment</strong></th>
</tr>
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<tbody>
<tr>
<td>Increasing evidence suggests that fibromyalgia, irritable bowel syndrome and other functional somatic syndromes belong to the same family of disorders.</td>
</tr>
<tr>
<td>The same treatment strategies have proven effective for these disorders (see Table 1).</td>
</tr>
<tr>
<td>Close cooperation including several medical specialties facilitates effective assessment of patients with multiple symptoms or substantial comorbidity.</td>
</tr>
<tr>
<td>It seems unrealistic and inefficient to establish specific treatment offers for every individual functional somatic syndrome.</td>
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<tr>
<th><strong>Arguments supporting fractionated treatment:</strong></th>
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<tr>
<td>It may be beneficial to target treatments according to subtypes of bodily distress, for example, patients who suffer primarily from muscle pain, fatigue or abdominal discomfort.</td>
</tr>
<tr>
<td>Patients with bodily distress are encountered in all medical specialties and it may be advantageous not to refer them to another department.</td>
</tr>
<tr>
<td>Organ-focused symptomatic treatment may be needed and require the expertise of a specific medical specialty.</td>
</tr>
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**RECOMMENDATIONS FOR A SPECIALIZED SERVICE**

The basic structure of services for BDS should be the same as that for other disorders or diseases in the health care system, that is, that appropriate treatment is provided in primary care with referral of more severely affected patients to specialized services for BDS at general hospitals or specialist clinics. There should be highly specialized services at university hospitals, which should also carry responsibility for training and research. The specialized service for BDS could also be part of a comprehensive psychosomatic or consultation–liaison (C-L) psychiatry service outside of university hospitals, but the necessary specific assessment and treatment skills should be available to those patients who require them.

The recommended form of service for BDS requires a multidisciplinary team, which includes both psychological/psychiatric and medical–surgical expertise. Because patients with severe BDS may be chronically ill with a high risk of being excluded from the labor market, occupational medicine and rehabilitation expertise are also needed, together with expertise in physical training. The number of experts needed from various specialties could be quite large, so a realistic way of organizing this would be that the specialists/counselors have a partial attachment to a clinic, but are employed elsewhere.

Each discipline relies on input from other specialists. For instance, a psychologist seeing a patient with bodily distress should collaborate with an general physician because medical knowledge is often required. However, psychologists are important when it comes to psychological treatment provided they have the backup from psychiatrists and physicians.

Because of the multidisciplinary approach, specialist clinics for BDS are best located at general hospitals to promote collaboration with other medical specialties and promote patient acceptance, although it is unclear whether such clinics should be organized under psychiatry or general medicine. However, most patients with bodily distress find it odd to attend a psychiatric hospital or clinic for their mainly physical
ailment. Consequently, patients with BDS are rarely seen in general psychiatric services, and only patients displaying prominent emotional symptoms or who have a concurrent mental disorder are referred to psychiatric services.

Psychosomatic medicine is the only medical or psychiatric subspecialty having BDS as one of their target groups, and patients with BDS are frequently referred to such services. An early survey of a C-L psychiatry service in the United States found that 38% of referrals were for somatization.\textsuperscript{72} A more recent, large survey of patients referred to an American C-L psychiatry service found that approximately 10% of referrals from the medical inpatient units had a somatoform disorder,\textsuperscript{73} and studies from the UK reported that medically unexplained symptoms or somatoform disorders accounted for up to 30% of referrals to C-L psychiatry services.\textsuperscript{74,75} In a large European study of general hospital patients referred to 56 C-L psychiatry services in 11 countries, 19% of the patients were referred because of “medically unexplained symptoms,” but only 8 of these 56 C-L psychiatry services had a marked preponderance of such patients; these were mainly psychosomatic services in Germany.\textsuperscript{76} In the United States, a well-organized subspecialty of psychosomatic medicine has been established, but there are no clinics in the United States that specifically treat patients with bodily distress.\textsuperscript{77} This means that although patients with bodily distress are frequently referred to C-L psychiatry and psychosomatic services, they are mostly not the services’ main target group and may therefore not receive appropriate assessment and treatment even in those services.\textsuperscript{15,16}

The best way of developing a good clinical service for patients with BDS may, therefore, be to establish the area as a specialty of its own as is the case for psychosomatic medicine in Germany. In most parts of the world, however, this may not be a realistic first goal. A certain amount of pragmatism is necessary for local adaptations. For instance, in countries with specialized clinics for chronic fatigue syndrome, a strategy could also be to establish programs for a broader range of BDS.\textsuperscript{10}

One may wonder why such specialized clinics are not implemented more widely; this seems to be an evident way of obviating many of the drawbacks of the current, unsuitable, fractionated treatment of bodily distress. We speculate that a range of strong academic, political, economic, and social interests may be invested in the status quo concerning some of the functional somatic syndrome diagnoses.\textsuperscript{78} Pharmaceutical companies, lawyers, clinics, insurance companies, patient organizations, and research milieus may have economic or interests in presenting certain functional somatic syndromes as valid and generally accepted diagnoses, even if their validity may be dubious. Less speculative is our assumption that the status quo is maintained by the increasing subspecialization of health care and by the fact that psychiatric and non-psychiatric services are often organized in separate organizations which makes it difficult to get funding for services for disorders in the “no-man’s land” between psychiatry and general medicine.

One of the very few university hospital departments specialized in patients with BDS is located in Denmark. Herein, the treatment for BDS is described.

**SPECIALIZED TREATMENT FOR SEVERE BODILY DISTRESS: A PRACTICAL EXAMPLE**

The Specialized Treatment for Severe Bodily Distress Syndromes (STreSS) program was developed to treat patients with persistent multiorgan BDS.\textsuperscript{70} STreSS was based on a cognitive–behavioral approach and, to maximize its potential cost effectiveness, designed to be delivered as group treatment. The department that offers the STreSS program is not part of the mental health service, but is located at a university general hospital as part of the Neurocenter, which enhances acceptability for both patients
and doctors. The treatment program is open to patients referred by physicians, and the department receives patients from all over Denmark. The Danish national health insurance covers the expenses for the treatment amounting to US$6500 for the STreSS program and US$2200 for the preceding clinical assessment.

Before patients are offered the STreSS program, they undergo a thorough clinical assessment at the department, which includes a review of clinical records, a semistructured psychiatric interview, physical and neurologic examinations, and a laboratory screening battery. This assessment not only aims to ensure that a patient’s symptoms are not due to an undiagnosed medical or psychiatric condition, but also to provide the patient with a positive and evidence-based understanding of his or her illness and to enhance the patient’s motivation to engage in a cognitive–behavioral group treatment. If an undiagnosed medical condition is suspected, the patient is referred to the relevant department. If comorbid anxiety and depression are present, written individualized advice on treatment is given to the patient’s family physician in the expectation that he or she will treat this psychiatric disorder.

The STreSS program consists of several elements (Table 2), some of which (elements 1 and 3) do not aim to influence the patients directly, but to change the “usual care” they receive from their family physicians, both during and after treatment at the department. Furthermore, the STreSS program includes close cooperation with social authorities and the patients’ employers, when needed (element 5). The core of the treatment is 9 modules of manualized psychotherapy (element 4) based on a cognitive–behavioral approach, each of 3.5 hours duration and delivered to groups of 9 patients by 2 psychiatrists (consultants or senior residents in psychiatry with at least 2 years of training in cognitive–behavioral therapy and expertise in the field of bodily distress). Table 3 gives a brief overview of the 9 modules. The patients are given the relevant chapter of the treatment manual (element 2) at the beginning of each module, including educational material, a symptom diary, worksheets, and homework assignments.

Recently, the department has treated patients with multiorgan BDS of at least 2 years’ duration. This threshold has been used to ensure that the department is concerned primarily with patients with severe and disabling bodily distress. The efficacy of STreSS has been tested in a randomized, controlled trial, and the results showed an immediate, clinically relevant effect on the patients’ self-reported physical health and their perceived bodily distress. This effect was sustained at the 1-year follow-up. These results suggest that it is feasible to treat patients diagnosed with the

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unifying BDS diagnosis together, regardless of the diagnostic label they may have received previously. Therefore, we regard the STreSS program as a promising example of a unified treatment approach that overcomes current shortcomings in the organization of care for patients with severe bodily distress.

SUMMARY

Based on our current knowledge and clinical experience, this article outlines evidence for the implementation of unified treatment programs for functional somatic syndromes and somatoform disorders at specialized multidisciplinary psychosomatic services. An essential rationale is our knowledge that both psychological–behavioral and psychopharmacologic interventions are effective, regardless of the diagnostic label and the patient’s symptom profile, although organ-specific treatments may play an additional role in the management of bodily distress. Different organizational models are evaluated asking the question whether they have the potential to improve the quality of care for patients with bodily distress. An integrated approach seems to be preferable compared with fractionated specialized clinics for various functional somatic syndromes. Specific recommendations for the implementation of such integrated services for bodily distress are given. Finally, the authors have provided an example of a unified treatment approach for patients with severe bodily distress from their own clinic, the STreSS intervention.

REFERENCES


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<tbody>
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<td>1</td>
<td>1</td>
<td>Introduction to STreSS</td>
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<tr>
<td>2</td>
<td>2</td>
<td>Bodily symptoms and their interpretation</td>
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<td>3</td>
<td>3</td>
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<td>From illness behavior to health behavior II</td>
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<td>8</td>
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</tr>
<tr>
<td>9</td>
<td>16</td>
<td>How to maintain learned skills and coping strategies</td>
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