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A new questionnaire to identify bodily distress in primary care: The 'BDS checklist'

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ABSTRACT

Background: Functional symptoms and disorders are common in primary care. Bodily distress syndrome (BDS) is a newly proposed clinical diagnosis for functional disorders. The BDS diagnosis is based on empirical research, and the symptoms stated in the BDS criteria have been translated into a self-report questionnaire called the BDS checklist. The aim of the present study was to investigate the psychometric properties of the checklist and to test the construct of BDS.
Method: The 30-item BDS checklist was completed by 2480 adult primary care patients in a cross-sectional study on contact and disease patterns in Danish general practice. We performed (internal) validation analyses of the collected checklist data. We also performed factor and latent class analyses to identify both BDS symptom groups and BDS patient groups.
Results: Internal validation analyses revealed acceptable and usable psychometric properties of the BDS checklist. The factor analyses identified the four distinct determining factors for BDS: cardiopulmonary, gastrointestinal, musculoskeletal and general symptoms. Results from factor and multi-trait analyses suggested a shortening of the BDS checklist (from 30 to 25 items). The latent class analyses resulted in three severity levels (no, moderate and severe BDS); the best fit index was found for a threshold of ≥4 symptoms in a symptom group.
Conclusion: The results provide empirical support for the previously described construct of BDS with four symptom groups and three patient groups. The BDS checklist is a self-report instrument that may be used for case finding in both clinical practice and in research.

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Introduction

Many primary care patients complain of physical symptoms that cannot be attributed to any conventionally defined disease. These symptoms are often referred to as medically unexplained, or functional, symptoms. Most symptoms are mild and self-limiting, but some are severely disabling for the patient. Various medical specialties have introduced their own diagnoses for this group of patients, e.g. functional syndromes such as fibromyalgia in rheumatology, chronic fatigue syndrome in infectious diseases, and irritable bowel syndrome in gastroenterology [1–3]. In the psychiatric classification system, these symptoms are diagnosed as somatoform disorders. Research has suggested that these different terms cover the same phenomenon of illness, but with various subtypes [4–8]. The different diagnostic labels may thus represent different diagnostic practices in different medical specialties rather than genuine differences between patient groups. The classification according to the International Classification of Diseases (ICD-10) [9], may thus be questionable. Two issues pose major problems: these syndrome diagnoses are not empirically founded, and most of them are based on the exclusion of organic diseases. The newly introduced DSM-5 diagnosis, somatic symptom disorder (SSD), has replaced most of the DSM-IV somatoform disorder subcategories [10]. The diagnosis requires the presence of one or more bothering somatic symptoms of any aetiology and is not based on exclusion of any medical condition. This may imply that a patient with pain due to cancer, for example, would fulfil this criterion. Emotional or behavioural distress in relation to the symptom(s) is, therefore, essential for appropriate application of the diagnosis. New criteria for a unifying diagnostic category that could encompass the majority of functional disorders and

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syndromes have recently been established on the basis of empirical research [11]. This diagnostic category is defined by specific symptom patterns and not simply by a number of symptoms. An international group of experts has agreed on using a neutral and non-stigmatizing term for this diagnosis, and bodily distress syndrome (BDS) has been considered a possible suggestion [12].

BDS was developed on the basis of a large sample of patients from primary care and from neurological and internal medicine departments. Three symptom groups, a cardiopulmonary (CP) group, a gastrointestinal (GI) group and a musculoskeletal (MS) group, were identified from standard diagnostic Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interviews [13] performed by trained psychiatric physicians and evaluated by principal component factor analysis. A fourth group embracing general symptoms (GS) was added to improve the sensitivity of the diagnosis and its ability to discriminate between moderate (oligo-symptomatic) and severe (multi-symptomatic) conditions. Latent class analyses (LCA) revealed three patient groups that were characterized by symptom profiles with a severity continuum spanning from no BDS over moderate to severe BDS [5]. In the current draft, the ICD-11 primary care work group has included these criteria in their suggestion for a definition of bodily (di)stress syndrome with minor adaptations [14]. Furthermore the ICD-11 somatoform disorder psychiatry work group has announced that the term 'bodily distress disorder' will be used for the diagnosis.

However, there is still a need for diagnostic aid for functional disorders. Checklists applied in most former studies, e.g. the Patient Health Questionnaire (PHQ) [15] and the Symptom Checklist (SCL) [16], obtained a symptom count, but these have not proven useful in primary care for diagnostic purposes [14,17].

Main objectives

The overall objective of this study was to develop a diagnostic aid to identify individuals with probable BDS and to investigate if the construct of BDS could be confirmed in a different population.

We applied the BDS checklist (see Appendix A), which is a new case-finding instrument that captures the same symptoms as the ones listed in the criteria for the BDS diagnosis.

The objective of the present study was twofold. First, we wanted to test the basic psychometric properties of the BDS checklist (objective one). We tested the data quality, floor and ceiling effects, and the internal consistency. In addition, we tested the construct validity by multitrait scaling and exploratory factor analysis (EFA). By applying EFA, we also wanted to identify problematic items that could possibly be left out from the BDS checklist.

Second, we wanted to test the suitability of the BDS checklist for case-finding compared to the time-consuming diagnostic SCAN interviews (objective two). This was done by investigating if symptom groups and patient groups would emerge in patterns similar to the original study when case identification was based on the self-report BDS checklist. We performed confirmatory factor analysis (CFA) to

test the four-factor model of BDS. This involved establishing a rational and clinically relevant cut-off on the response scale and broadening the expected factor model from the three factors in the original study to four factors in the present study. CFA was repeated to test the checklist factors when problematic items were left out. In addition, we applied latent class analyses (LCA) to test the distinct patient severity groups presented in the original work (no BDS, moderate BDS and severe BDS). This also involved evaluating the diagnostic criteria presented in the original study (Table 1, first column). If these criteria could not be confirmed, we investigated if slightly different criteria would establish a model expressing similar patient severity groups. Adjustments were restricted to include number of positive symptoms in a symptom group.

Methods

The study was based on data from a large cross-sectional study of the contact and disease patterns in Danish general practice [18].

Population

A study population of primary care patients from the Central Denmark Region (covering approximately 20% of the entire Danish population) was established from December 2008 until December 2009. All 871 GPs in the Central Denmark Region were invited to participate. Participating GPs registered all patient contacts during one randomly assigned day. The GPs received remuneration for their participation [19]. Information about the GPs and their listed patients was obtained from the Danish National Health Service Register [20].

In the present study, we included all identifiable patients aged 18 + years who had visited their GP because of a health problem, and we sent a questionnaire to the patients approximately one week after their consultation. Patients who had visited their GP because of health status attestation or preventive health services and patients who had a home visit, an e-mail consultation or a telephone consultation were excluded (Fig. 1).

Measures

Development and selection of items substantiating the BDS diagnosis have been described in detail elsewhere [5]. In short, out of the 76 symptoms that emerged in the SCAN interviews, symptoms loading 0.45 or higher in the factor analyses were selected. The BDS checklist consisted of an adaptation of these selected SCAN items and included the four symptom groups of BDS. The checklist opened with the question: 'Have you been bothered by' followed by a list of symptoms. In the present study, the BDS checklist had a five-point response scale for each listed item. The scale ranged from 0 ('not at all') to 4 ('a lot'), and the time frame was the last four weeks (Appendix A).

Table 1
Suggested criteria for bodily distress syndrome according to data collection.

	Suggested criteria based on clinical interview	Suggested criteria based on patient questionnaire	
Yes		At cut off 1/2[a]	
	≥3	≥4	Gastrointestinal (GI) symptoms[b]
	≥3	≥4	Cardiopulmonary (CP) symptoms[b]
	≥3	≥4	Musculoskeletal (MS) symptoms[b]
	≥3	≥4	General symptoms (GS)[b]
	≥4	≥4	Symptoms from any of above symptom groups

Severe = 4 to 5 'Yes'; Moderate = 1 to 3 'Yes'.
[a] Between "a bit" and "somewhat" on the response scale.
[b] See Appendix A.