

Review Article

Expert multidisciplinary consensus on the recognition and management of somatic symptom disorder in China

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Received March 13, 2026; Accepted August 26, 2026; Epub September 15, 2026; Published September 30, 2026

Abstract: Objectives: To develop a multidisciplinary expert consensus on the recognition and management of somatic symptom disorder (SSD) in Chinese general hospitals, based on a synthesis of available evidence and clinical expertise. Methods: A multidisciplinary expert panel conducted a systematic literature search and evidence synthesis, followed by structured discussions and Delphi-based anonymous voting to formulate consensus recommendations. Recommendations were adopted when at least 70% of panel members rated them as "Agree" or "Strongly Agree". Items that did not reach the predefined threshold were revised and reconsidered in subsequent rounds. Results: The consensus emphasized a biopsychosocial and psychosomatic-integrative approach to SSD, including early recognition of psychological and behavioral characteristics, comprehensive assessment of biopsychosocial factors, attention to psychiatric and medical comorbidities, therapeutic alliance, multidisciplinary collaboration, and stepped management according to clinical severity and risk. Psychological and pharmacologic interventions are recommended according to symptom profiles, comorbidities, and individual clinical characteristics. Conclusion: This multidisciplinary expert consensus provides an evidence-based guide for the recognition and management of SSD across clinical settings. The recommendations are intended to support individualized and multidisciplinary clinical decision-making. Prospective and multicenter studies are needed to evaluate their feasibility, implementation, and clinical effectiveness.

Keywords: Recognition, management, somatic symptom disorder, multidisciplinary, expert consensus

Introduction

Somatic symptom disorder (SSD) is characterized by the presence of one or more somatic symptoms that cause distress or result in significant impairment in daily functioning, accompanied by excessive or disproportionate

feelings, cognitions, or behaviors related to the somatic symptoms, or excessive emotional experiences related to health. Although SSD is classified as a mental disorder, patients often initially present to various clinical departments with multiple non-specific somatic symptoms and are diagnosed with functional somatic syn-

dromes. The detection rate of SSD in general hospital outpatient clinics has been reported to be as high as 33.8% [1]. Patients with SSD are excessively preoccupied with their physical health and often find it difficult to accept that their symptoms may have psychological underpinnings. They seek medical care repeatedly and undergo unnecessary examinations but fail to achieve satisfactory therapeutic outcomes. This not only impairs the daily lives of individuals and their families but also triggers negative experiences for physicians, exacerbates doctor-patient conflicts, and leads to a waste of healthcare resources [2]. To improve health care professionals' understanding of SSD and to elucidate the psychosocial factors underlying the somatic symptoms from the psychosomatic-integrative perspective, the Psychosomatic Medicine Branch of the Chinese Medical Association (CMA) established the Somatic Symptom and Related Disorders Group, in collaboration with the Psychosomatic Medicine Branch of the Shanghai Medical Association. Experts were invited from fields such as psychiatry/psychosomatic medicine, gastroenterology, cardiology, respiratory medicine, pediatrics, and oncology. This clinical consensus was developed based on a systematic literature search, evidence synthesis, and panel discussions, with a focus on the diagnostic features, clinical characteristics, and a multidisciplinary graded recognition and management model for SSD.

Materials and methods

We systematically searched domestic and international clinical studies, guidelines, and consensus related to SSD. The databases searched included PubMed, Web of Science, China National Knowledge Infrastructure (CNKI), Wanfang Data, and China Science and Technology Journal Database (VIP Database). Search terms included SSD, somatoform disorder, functional somatic syndromes (e.g., irritable bowel syndrome), and medically unexplained somatic symptoms. The search period covered January 1, 2013, to January 14, 2026. After duplicate removal and initial screening, 112 articles were included in the final analysis. The literature search process is shown in **Figure 1**. The first draft was developed based on literature analysis and combined with multidisciplinary clinical experiences; items were

formulated on key issues related to SSD. The Delphi method was used to reach a consensus, and all members of the expert group voted anonymously on the drafted clinical practice guidelines. Items with 70% or more of the votes rating as 'Agree' or 'Strongly Agree' were included in the clinical guideline. Items failing to reach this 70% agreement threshold were modified and re-submitted for the next round of voting. This process was conducted for a maximum of three rounds to finalize the clinical guideline.

Diagnostic features

Changes in diagnostic philosophy

The understanding of non-organic somatic symptoms has long been shaped by dichotomies such as 'organic vs. functional' and 'somatic vs. psychological'. Whether categorized as functional somatic syndromes (e.g., irritable bowel syndrome, fibromyalgia) or as somatoform disorders, these conditions necessitate ruling out somatic disease to demonstrate that bodily complaints are medically unexplained [3]. In clinical practice, this criterion is not only difficult to operationalize but also shows poor inter-rater reliability. In 2013, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) adopted new diagnostic criteria for Somatic Symptom Disorder (SSD). This marked a departure from the traditional organic/functional dichotomy by no longer requiring the exclusion of general medical conditions. Instead, diagnosis is based on positive psychological and behavioral features - specifically, the abnormal thoughts, feelings, and behaviors in response to somatic symptoms (SSD Criterion B). Similarly, the diagnosis of Body Distress Disorder (BDD) in the International Statistical Classification of Diseases, 11th Revision (ICD-11), published in 2018, also embodies the concept of psychosomatic integration, focusing on distressing symptoms and their associated psychological and behavioral characteristics (**Table 1**).

The introduction of Criterion B clarifies that mental disorders are defined based on psychological and behavioral dimensions, rather than merely by the exclusion of biologically defined diseases. The inclusion of psychological and behavioral characteristics improves diagnostic validity, enhances predictive validity and clini-

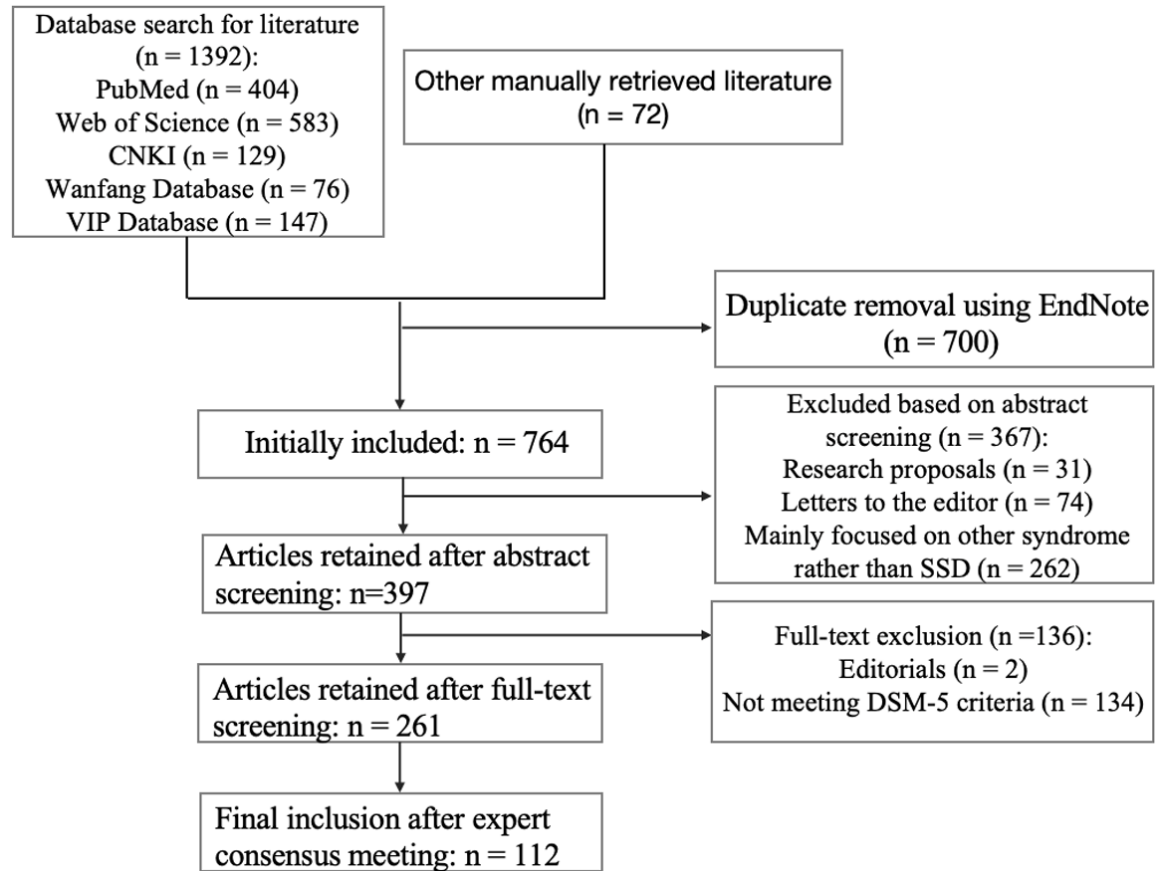


Figure 1. Flow chart of literature search for the clinical practice guidelines for multidisciplinary diagnosis and treatment of somatic symptom disorder. Note: CNKI: China National Knowledge Infrastructure; VIP database: China Science and Technology Journal Database; SSD: somatic symptom disorder.

Table 1. Comparison of diagnostic classification and subtypes of somatic symptom disorder-related diagnoses across different diagnostic systems

Diagnostic	DSM-4 TR	DSM-5	ICD-10	ICD-11
Classification	Somatoform disorder	Somatic symptom and related disorder	Somatoform disorder	Bodily distress or body experience disorder
Diagnostic subtypes	Somatization disorder	Somatic symptom disorder	Somatization disorder	Bodily distress disorder
	Undifferentiated somatoform disorder	Illness anxiety disorder	Undifferentiated somatoform disorder	Body integrity dysphoria
	Conversion disorder	Conversion disorder	Hypochondriacal disorder	Other specified bodily distress or body experience disorder
	Pain disorder	Factitious disorder	Somatoform autonomic dysfunction	Unspecified bodily distress or body experience disorder
	Hypochondriasis	Psychological Factors Affecting Other Medical Conditions	Persistent Somatoform Pain Disorder	
	Body Dysmorphic Disorder	Other Specified Somatic Symptom and Related Disorder	Other somatoform disorders	
	Unspecified somatoform disorder	Unspecified Somatic Symptom and Related Disorder		

Note: DSM-4 TR: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition; DSM-5: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; ICD-10: International Statistical Classification of Diseases, 10th revision; ICD-11: International Statistical Classification of Diseases, 11th revision.

cal utility, and can better identify patients with psychological disorders, severe disabilities, and those requiring psychosomatic intervention [4]. However, the diagnostic criteria for SSD are non-specific, relying heavily on subjective and difficult-to-measure cognitions. Moreover, since they do not rule out other medical or psychiatric conditions, there is a risk of over-diagnosis. This should be carefully avoided in clinical practice [5].

Reliability and validity of SSD diagnosis

In the DSM-5 field trials, the diagnosis of SSD demonstrated good reliability, validity, and clinical utility [3, 6-8]. The diagnostic consistency of SSD ranked third among adult patient populations ($Kappa = 0.61$), second only to neuro-cognitive disorders and post-traumatic stress disorder [6]. Studies have shown that after including psychological symptom assessment, the diagnosis of SSD has good structural validity and predictive validity, playing an important role in clinical diagnosis, treatment, and research.

Relationship between SSD and functional syndromes

There is growing recognition of the concept of psychosomatic integration across diverse disciplines. The American College of Chest Physicians guidelines directly introduced SSD diagnostic criteria and proposed “somatic cough disorder” to replace the diagnosis of “psychogenic cough”. The German guidelines for irritable bowel syndrome added psychological, behavioral, and social functioning criteria, such as medical seeking behavior/anxiety and impaired quality of life [9]. The concept of functional syndromes is similar to SSD, and Tavel believes that various types of functional somatic syndromes share some overlapping features and are best grouped into one diagnostic category, such as SSD [10]. Henningsen proposed that the diagnosis of functional somatic syndromes is specific and symptom-based, whereas the diagnosis of SSD is non-specific and syndrome-based, with substantial overlap between the two [11]. However, other studies show that SSD is not sufficient to replace functional somatic syndromes; among patients with fibromyalgia, only 25.6% met the diagnostic criteria for SSD, and among patients with irritable bowel syndrome, it was only 27.1%. Fur-

thermore, clinicians lack experience in applying SSD diagnostic criteria, and the application of SSD diagnosis is limited [12-14].

Clinical guideline 1: SSD addresses, to some extent, the limitations of previous diagnostic approaches that overemphasized the mind-body dichotomy. By incorporating positive psychological and behavioral features as criteria, it enhances the reliability, validity, and clinical utility of the diagnosis. The concept of psychosomatic integration and its corresponding medical model are gradually gaining prominence. Clinicians should consciously assess psychosocial factors while examining physical conditions, integrating this holistic approach throughout the entire process of consultation and treatment. This is particularly important for psychiatrists, who need to stay abreast of the latest developments in different diagnostic systems to ensure timely and accurate diagnosis and treatment of their patients.

Clinical characteristics

Clinical symptoms

Somatic symptoms among patients with SSD are heterogeneous and lack specificity, ranging from mild functional impairment to severe incapacitation. These symptoms are closely associated with emotional conflicts or recent psychosocial stressors, whereas they show weak correlations with physical exertion or dietary triggers [15]. It is usually difficult to detect pathologic changes related to somatic symptoms. In some instances, the pathologic changes cannot explain the severity of the somatic symptoms, and even treatment for the pathologic changes cannot alleviate the symptoms.

Patients with SSD often present with emotional problems, particularly catastrophic thoughts and thinking that are disproportionate to the severity of their physical disease/symptoms, along with persistently high levels of anxiety [16]. As a result, clinically significant symptoms of depression and anxiety are common. Studies have shown 23.9% patients experience suicidal ideation, and 17.6% patients have attempted suicide [17]. It is important to differentiate these dimensional emotional symptoms from a categorical comorbid diagnosis of a depressive or anxiety disorder, which should be carefully assessed using appropriate diagnostic cri-

teria. Despite significant psychological distress and behavioral abnormalities, most patients still tend to decline to see a mental health specialist in department of psychiatry/psychological medicine [18]. Moreover, patients with SSD who present to other clinical disciplines exhibit greater severity in terms of somatic sensation amplification, hypochondriasis, alexithymia, stigma, and disability, and have a lower quality of life. Consequently, specialists in these disciplines face even more formidable challenges [19].

Patients with SSD exhibit abnormal behavior, often repeatedly demanding medical examinations. Their repeated healthcare-seeking and prolonged sick leave lead to occupational dysfunction and work disability, as well as impaired interpersonal and social functioning [20]. Non-specific somatic symptoms are also a significant cause of school refusal among children and adolescents, with the incidence of somatic symptoms among those refusing school ranging from 26.5% to 79.4% [21, 22]. The number of days absent from work or school is positively correlated with symptom severity. Furthermore, the excessive focus of SSD patients on their physical condition, coupled with repeated healthcare-seeking and unnecessary tests, can easily trigger negative experiences in physicians. This not only exacerbates doctor-patient conflict but also results in a substantial waste of medical resources. Surveys indicate that annual healthcare expenditures attributable to 'somatization' in the United States account for 16% of all healthcare costs - more than twice that of other mental disorders [23, 24]. A meta-analysis covering 23 high-global burden of diseases (GBD) countries showed that the years lived with disability (YLDs) for SSD are approximately 662.4 (350.2-974.6) per 100,000 person-years, suggesting that SSD may become the second most burdensome mental disorder globally [24]. In surgical populations, chronic postsurgical pain represents a significant clinical challenge with substantial functional and economic burden; a recent systematic review and meta-analysis of 22 prognostic prediction models demonstrated that while these models show promising discriminative performance (pooled C-index of 0.79) for identifying patients at risk of chronic postsurgical pain, high overall risk of bias raises concerns about their generalizability, under-

scoring the need for rigorously validated tools to improve risk prediction in clinical practice [25].

Therefore, early identification and screening of SSD across clinical disciplines, along with consultation, liaison with, and referral to a psychiatry or psychological medicine department, are of great significance in terms of resolving medical seeking difficulties, reducing doctor-patient conflicts, and saving medical resources.

Prevalence

Research on the prevalence of SSD shows significant heterogeneity due to variations in study settings, assessment methods, and diagnostic criteria. Some researchers have used semi-structured clinical interviews based on DSM-5 criteria for SSD diagnosis, while others reported detection rates based on results from self-rated symptom scales or clinical assessment. A multi-center cross-sectional study in China, employing clinical interviews and DSM-5 criteria, showed that the prevalence of SSD in general hospital outpatient departments is 33.8%, with prevalence rates in department of somatic specialties, psychiatry/psychological medicine, and traditional Chinese medicine being 40.2%, 42.1%, and 19.0%, respectively [1]. A German study indicated that the prevalence of SSD in psychiatric/psychological medicine outpatient clinics is 54.6% based on DSM-5 criteria for SSD diagnosis using semi-structured telephone interviews [26]. A Japanese study reported that 77.7% of patients in the department of psychiatry/psychological medicine meet the DSM-5 diagnosis for somatic symptoms and related disorders [27]. The detection rate of SSD in the German general population is 4.5% using the SSS-8 and Whiteley Index-7 [28]. Another cross-sectional study conducted in Shanghai showed the prevalence of SSD was 63.2% in the elderly population (>60 years) using the Somatic Symptom Scale-China questionnaire [29]. The prevalence of SSD at the primary care level in Muscat, Oman was 17.8 based on the SSS-8 scores [30]. In general hospital in North Palestine, the detection rate of SSD was 32.5% using the 16-point Somatization Scale of the four-Dimensional Symptom Questionnaire (4DSQ) [31], and 20.6%-21.9% SSD inpatients were detected using SSS-8 in the general hos-

pital in Basel [32]. In other clinical specialties such as respiratory, neurology, cardiology, gastroenterology, oncology, and rheumatology, the detection rates of SSD range from 5.8%-52.9% [33-38]. A recent meta-analysis of 41 studies adhering to definitions from DSM or ICD between Jan 1, 1980, and Feb 19, 2024, showed that the prevalence of SSD globally is 4.6%, and the prevalence in women (7.7%) is significantly higher than that in men (2.8%) [24]. The latest World Mental Health (WMH) survey conducted large-scale population surveys in Hong Kong, the Philippines, and Qatar (total sample size 18,105), and based on standardized diagnostic assessment interviews, found the point prevalence of BDD (ICD-11) to be 2.0% and SSD (DSM-5) to be 3.5% (2.4% in the Philippines, 7.2% in Hong Kong). Women had twice the risk of developing the disease compared to men, and the prevalence increased with age [39].

Clinical guideline 2: Clinicians should pay attention to the symptom characteristics of SSD, including non-specific, non-organic persistent somatic symptoms, thoughts disproportionate to symptom severity, excessive health anxiety, and abnormal medical-seeking behaviors such as repeated visits and requests for duplicate examinations. The screening, assessment, and diagnosis of SSD should be performed as early as possible.

Clinical guideline 3: Currently, there is no consistent conclusion on the prevalence of SSD, but existing literature indicates that SSD is common across all levels of medical institutions and clinical departments. The prevalence of SSD in general hospital outpatient departments in China is 33.8%. SSD not only affects the quality of life of individuals and families and causes tension in doctor-patient relationships but also leads to a massive waste of medical resources. Clinicians need to have a preliminary understanding and judgment of SSD, conduct early screening. Also, they need to fully consider the impact of SSD in the process of developing the diagnosis and treatment plans.

Etiology

Current research shows that the onset of SSD is influenced by multiple factors, including biological, psychological, and social factors. Multiple studies show that changes in brain

structures and brain functions in patients with SSD (such as frontal cortex-striatal circuit dysfunction, abnormal white matter network topology), which may be related to their catastrophic ideas, emotion regulation, self-perception, and abnormalities in body perception [40-46]. In addition, reduced heart rate variability may be related to SSD as well [47]. Negative experiences in childhood and personality characteristics (unhealthy personality traits, avoidant or anxious attachment styles, etc.) are also important factors influencing the onset of SSD; somatic symptoms may be used as psychological defense mechanisms or means of obtaining benefits unconsciously [48, 49]. Influenced by traditional culture, patients have difficulty confronting emotional problems and tend to express them through somatization. Psychosocial stress, such as acute physical illness, stressful work environments, and negative life events, are important factors that trigger physical discomfort [15]. Furthermore, clinicians' "over-interpretation of adverse consequences" of examination results (such as interpreting superficial gastritis as an early lesion of gastric cancer) or insistence on biological factors may induce or exacerbate the patient's painful experience and worry regarding their symptoms. Under the influence of various factors, patients' perceptions tend to become a model consisting of "insufficiently precise sensory input" and "overly precise expectations", inducing painful perception of the body and further leading to the manifestation and perpetuation of somatic symptoms, having a serious negative impact on mental and physical health [50, 51]. A recent bidirectional Mendelian randomization study further provided causal evidence for the relationship between somatic symptoms and psychiatric comorbidity, demonstrating positive causal associations between multisite chronic pain and seven psychiatric disorder subtypes, including depression, anxiety disorders, and insomnia, with bidirectional causal associations identified between depression and chronic pain as well as anxiety disorders and chronic pain [52]; (see **Figure 2**).

Clinical guideline 4: Currently, the etiology of SSD is not very clear and is influenced by the patients' own cognitions and adverse environmental factors. The biological mechanisms mainly involve structural and functional changes in brain regions such as the frontal cortex. It

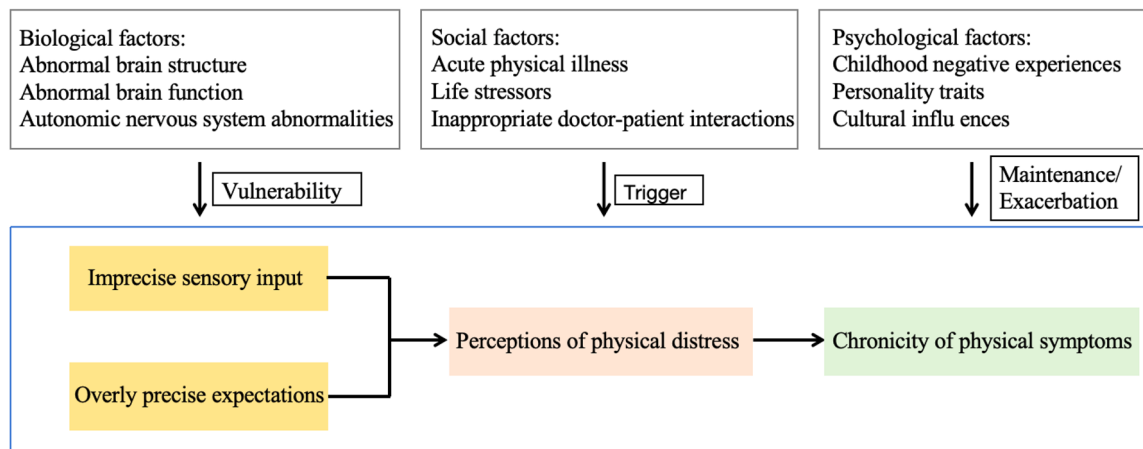


Figure 2. Multifactor disease model of somatic symptom disorder.

is recommended to understand the psychological meaning underlying patients' somatic symptoms from a wholistic perspective of psychosomatic integration and focus on the influence of biopsychosocial factors on the emergence and development of the disease.

Hierarchical multidisciplinary collaborative diagnosis and treatment

Multidisciplinary collaborative model

The management of SSD requires close collaboration among various clinical departments, forming a stepped, multidisciplinary collaborative model based on risk assessment. The first-contact physician needs to be alert to the clinical clues of SSD, understand the diagnostic criteria and common comorbidities of SSD, use assessment tools skillfully, master good communication skills, handle physical discomfort timely, and refer or request consultation when necessary. Psychiatrists have professional advantages in the management of SSD, including guidance on disease identification, doctor-patient relationships, psychological interventions, and medication. After conducting a risk assessment based on the consumption of medical resources, the degree of functional impairment, and the doctor-patient relationship, appropriate stepped diagnosis and treatment is implemented: patients with mild SSD are regularly followed up by the first-contact physician in their respective departments to avoid excessive physical examinations and referrals, and gradually reduce unnecessary medication. Patients with moderate SSD are man-

aged by the first-contact physician in their respective departments in a standardized manner, along with consultation with a psychiatrist to provide psychotherapy and/or pharmacotherapy accordingly. During the treatment process, the symptoms, diagnosis, severity, and treatment effect are reassessed at least once every three months; patients with severe SSD are referred to the department of psychiatry/psychological medicine for further treatment, while the relevant clinical specialty departments conduct regular follow-up [53]; see **Figure 3**.

Currently, the specific implementation of the multidisciplinary collaborative model still needs exploration; the establishment of community medical alliances and the development of multidisciplinary consultations may play an important role. Community medical alliances can effectively link tertiary hospitals with secondary hospitals and community hospitals to promote hierarchical diagnosis and treatment. Multidisciplinary consultations involve experts from multiple clinical specialties having discussions together, which helps in comprehensive assessment to minimize misdiagnosis, omission and formulate the best treatment plan.

Clinical guideline 5: The treatment of SSD should adhere to the principles of multidisciplinary collaboration and stepped care, delivering tailored stepped interventions based on risk assessment and grading of symptom severity. By leveraging the respective expertise of multidisciplinary teams, clinicians should

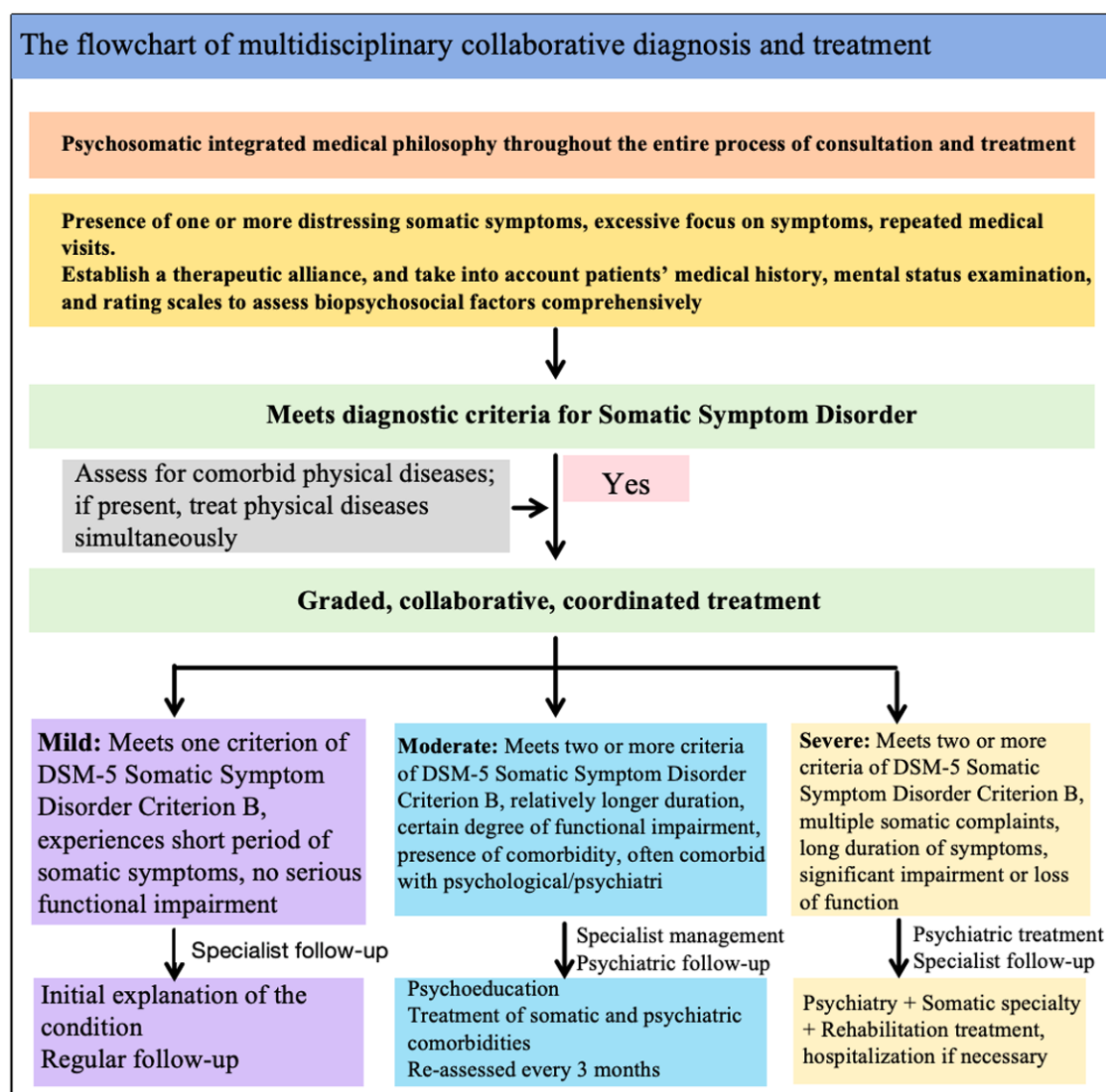


Figure 3. Multidisciplinary collaborative model for somatic symptom disorder. Note: DSM-5: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

provide patients with integrated psychosomatic medical care to maximize functional improvement and enhance quality of life.

Diagnostic process

The diagnosis of SSD first requires comprehensive history taking (including pattern of symptom evolution, course of disease, previous medical records, etc.) and systematic assessment of somatic symptoms and psychological behavioral characteristics (illness perceptions, symptoms attributions, health anxiety, abnormal behaviors, etc.). Core symptoms are sum-

marized into syndromes, from which various possible hypothetical diagnoses are derived and a final diagnosis is made after differential diagnosis; see **Figure 4**.

Assessment

In various clinical departments, the question "How many hours do you spend every day dealing with your physical problems?" can be used to quickly assess whether the thoughts, feelings, and behaviors related to the symptoms are excessive; if a patient reports spending 3-4 hours a day dealing with physical discom-

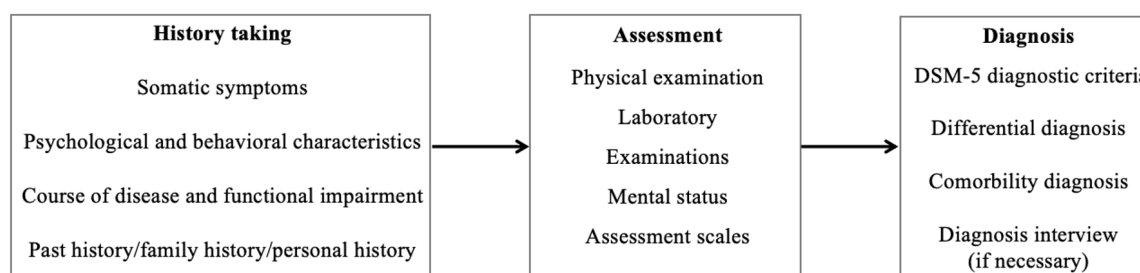


Figure 4. Diagnostic flow chart for somatic symptom disorder. Note: DSM-5: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

Table 2. Assessment scales and screening tools for somatic symptom disorder (SSD)

Instrument	Contents of Assessment	Scoring Method	Scoring Criteria
Patient Health Questionnaire (PHQ-15)	Severity of somatic symptoms	Contains 15 items, each scored 0-2 points	Minimal: a total score <4; Mild: 5-9; Moderate: 10-14; Severe: 15-30
Somatic Symptom Scale (SSS-8)	Severity of somatic symptoms	Contains 8 items, each scored 0-4 points	Minimal: a total score 0-3; Mild: 4-7; Moderate: 8-11; Severe: 12-15; Extremely severe: 16-32
Whiteley Index (WI-8)	Health anxiety	Contains 8 items, each scored 1-5 points	A total score ≥19 indicates significant health anxiety
Somatic Symptom Disorder Criterion B Scale (SSD-12)	Cognitions, feelings and behaviors regarding somatic symptoms	Contains 12 items, each scored 0-4 points	A total score ≥16 indicates abnormal cognition, feelings and behaviors regarding somatic symptoms

Note: SSD: somatic symptom disorder.

fort, a more comprehensive SSD screening should be conducted [54]. Multiple standardized and validated self-rating scales are available to assist in the assessment and screening of SSD (**Table 2**). The Patient Health Questionnaire-15 (PHQ-15) and Somatic Symptom Scale-8 (SSS-8) are commonly used to assess burden of somatic symptoms, but neither is suitable for assessing SSD alone [55]. The Whiteley Index-8 (WI-8) and Somatic Symptom Disorder-B Criteria Scale (SSD-12) are used to assess burden of psychological symptoms, with SSD-12 having higher screening consistency in different clinical settings [56, 57]. Research indicates that PHQ-15 or SSS-8 combined with SSD-12 can screen high-risk SSD populations [58]. Furthermore, the SSD diagnostic module in the Structured Clinical Interview for DSM-5 Research Version (SCID-5-RV) is an effective diagnostic interview tool, but its clinical application is limited as it requires psychiatric specialty training and

is time-consuming. As a result, it is currently used mainly for research purposes.

Clinical guideline 6: “Daily time spent dealing with physical discomfort” can serve as a quick assessment index;. If the time is 3 hours or more, it is recommended to use self-rated scales further for comprehensive assessment. PHQ-15 and/or SSS-8 can assess the burden of somatic symptoms, while WI-8 and/or SSD-12 can assess the burden of psychological symptoms. PHQ-15 or SSS-8, combined with SSD-12 can screen high-risk SSD populations, and diagnostic interviews can be conducted when necessary. Furthermore, artificial intelligence-assisted integration of multimodal data may enhance pain assessment and risk stratification, with potential value for early recognition and individualized management of SSD [59]. Methodologic frameworks leveraging multidimensional feature fusion and interpretable machine-learning models have demonstrated feasibility for automated disease grading and

Table 3. Comorbidity rates of somatic symptom disorder (SSD) with other diseases

	Disease/Disorder	Comorbidity rate (%)
Mental disorders comorbid with SSD	Depressive disorder [67]	11.8-48.1
	Anxiety disorder [65]	1.5-51.2
	Sleep disorder [94]	20.4-48.0
Physical illness comorbid with SSD	Semantic dementia [35]	41.5
	Alzheimer's disease [35]	11.2
	Lipodystrophy in females [37]	25.0
	Congestive heart failure [87]	18.5
	Breast cancer [1]	21.6

Note: SSD: somatic symptom disorder.

risk-stratified evaluation in medical scenarios [60].

Comorbidity and differential diagnosis

SSD is often comorbid with other mental disorders, such as depression, anxiety, and sleep disorders (**Table 3**). Studies show that compared to patients without SSD or healthy controls, SSD patients have higher levels of depression and anxiety, and the degree of severity of the mental disorder is related to the severity of the physical illness [61-65]. Sleep disorders, with comorbidity rates ranging from 20.4% to 48.0% (**Table 3**), represent one of the most prevalent comorbidities in SSD. Notably, emerging evidence suggests that the relationship between pain, sleep, and pharmacological interventions may involve complex interactions; a recent review highlighted that opioids, while conventionally believed to promote sleep through their analgesic and sedative effects, can actually disrupt sleep architecture by reducing slow-wave and REM sleep, leading to sleep deprivation and fragmentation [66]. This finding has important clinical implications for SSD patients with comorbid chronic pain who may be prescribed opioid analgesics, as opioid-induced sleep disruption could potentially exacerbate both somatic symptoms and psychiatric comorbidities. Factors influencing SSD clinician should carefully differentiate and diagnose accordingly (**Table 4**). For example, if the patient's symptoms occur only during a depressive episode, a diagnosis of depression should be made rather than SSD; however, if both SSD and depressive disorder diagnostic criteria are met, comorbidity should be considered.

SSD is also comorbid with various organic diseases, such as dementia and hypertension

(**Table 3**) [35]. In a study evaluating the physical conditions of SSD patients, 28.8% had asthma, 23.1% had circulatory diseases, and 13.5% had gout, rheumatism, or arthritis [67]. Patients comorbid with physical diseases had higher SSD-12 scores and higher disease severity [68, 69]. Therefore, psychiatrists need to pay attention to the physical conditions of patients with SSD. When necessary, consultation with the corresponding clinical specialist should be arranged for comorbid diagnosis and treatment. Clinical specialists should also remain vigilant about the possibility of SSD when treating patients' physical illnesses and, when necessary, request a psychiatric consultation or refer patients to the department of psychiatry/psychological medicine.

Clinical guideline 7: Given that comorbidity in SSD is relatively common and that patients with SSD and comorbid psychiatric or physical disorders tend to have greater illness severity, it is recommended to consider the presence of common comorbidities when making a diagnosis of SSD. These include depressive disorders, anxiety disorders, sleep disorders, dementia, hypertension, and diabetes, among others.

General treatment

An empathetic and mutually trusting doctor-patient relationship is the foundation for maintaining the therapeutic relationship and ensuring treatment efficacy. The following psychosomatic integrated consultation techniques should be applied throughout the entire process of consultation and treatment, helping clinicians across all departments communicate more effectively with patients with SSD.

Table 4. Differential diagnosis between somatic symptom disorder (SSD) and common mental disorders

Common Mental Disorders	Similar Symptoms	Differential Key Points
Illness Anxiety Disorder	Both have persistent health anxiety and frequent medical visits	Illness Anxiety Disorder emphasizes preoccupation with “having an illness” more prominently, with less prominent somatic symptoms
Generalized Anxiety Disorder	Both have persistent worry or anxiety and nonspecific somatic manifestations such as sweating, dizziness, nausea, diarrhea, muscle soreness, etc.	The core of generalized anxiety disorder is anxiety about anticipated events, without specific focus; often worry about multiple events, situations, or activities - broader scope of worry
Panic Disorder	Patients with panic attacks may also seek medical care for prominent somatic symptoms such as dizziness, palpitations, chest tightness, dyspnea, limb numbness, etc.	Panic disorder tends to have acute episodes, with 1-2 days of weakness period post-episode; no continuous feeling of illness
Depressive Disorder	Depressive episodes may have various somatic complaints such as fatigue, poor appetite, pain, etc.; may worry about somatic symptoms	Somatic symptoms in depression usually only appear during depressive episodes; need to assess for core depressive symptoms such as depressed mood, lack of interest, anhedonia, etc.
Bipolar Disorder	Depressive phase may have somatic complaints such as fatigue, poor appetite, pain; manic phase may have decreased sleep, weight changes, increased eating due to elevated mood; increased goal-directed activity may lead to frequent medical visits	Core symptoms of bipolar disorder is mood instability, alternating between elevated and depressed mood; may be normal between episodes

Note: SSD: somatic symptom disorder.

Establishing an alliance: Based on previous doctor-patient relationships, patients with SSD may have mixtures of unrealistic expectations, pessimism, and distrust of the profession when seeking treatment. In this case, establishing a trusting therapeutic alliance must start with respecting the patients’ symptoms, acknowledging the reality of the symptoms, empathizing with the patients’ feelings about the symptoms, and understanding the patients’ illness perceptions. In this way, they feel that the doctor is indeed taking their physical complaints seriously.

Comprehensive assessment: When consulting with SSD patients, avoid denying physical illnesses too early. Clinicians should select appropriate diagnostic examinations based on patients’ history and physical examination, targeting their physical complaints and excluding serious physical diseases. Patients’ inappropriate requests for further examinations should be refused. At the same time, clinicians need to explore relevant psychosocial stressors, identify factors leading to the occurrence, maintenance, or worsening of symptoms, and help the patients understand the link between physiological and psychological symptoms. For example, having a headache under stressful situations or having a stomachache when anxious.

In this way, they are able to understand interactions between mind and body, and coping mechanisms for symptoms.

Regular follow-up: It is recommended that clinicians offer feedback about examination results to the patient and explain that serious diseases are unlikely. Most patients with unknown causes can accept follow-up observation. During follow-up process, arrange regular short-interval visits and emphasize that symptoms are not life-threatening to reduce excessive healthcare-seeking behaviors. If the patient’s physical symptoms are obvious, medications can be used targeting their symptoms. However, the patient should be guided to set treatment goals as “improvement in functioning” rather than “complete symptom relief” [70].

Clinical guideline 8: It is recommended that all doctors master psychosomatic integrated consultation techniques and implement the philosophy of psychosomatic integration throughout the entire diagnostic and treatment process. Establishing an empathetic and mutually trusting doctor-patient relationship is the core of disease treatment and management. To translate these consultation techniques into routine clinical practice, systematic training in doctor-patient communication is essential. Recent medical education research has demon-

Table 5. Definition of evidence level and recommendation level

Class	Definition
Level of evidence	
I	At least two double-blind randomized controlled trials with sufficient sample sizes, preferably placebo-controlled trials, and/or high-quality meta-analyses
II	At least one randomized controlled trial with a sufficient sample size, and/or a meta-analysis with a wide confidence interval
III	Prospective non-randomized controlled trials, case reports, or high-quality retrospective studies
IV	Expert recommendation or consensus
Level of recommendation	
A	It has been confirmed or unanimously agreed that the expert group has a unified understanding
B	The relevant evidence/arguments tend to be useful or effective, reasonable, and there is some disagreement among the expert panel.
C	It has been confirmed and/or recognized as useless or ineffective, and is not recommended for use

strated that case-based teaching using medical dispute analysis can effectively enhance medical students' and residents' empathy, trust-building skills, and coping strategies for difficult clinical interactions-competencies that are particularly valuable for managing SSD, a condition that heavily relies on a strong therapeutic alliance [71].

Specialized treatment (Table 5)

Psychological treatment is an important part of SSD treatment, mainly used to solve underlying psychological problems, aiming to change the way patients perceive symptoms and help them understand the meaning of symptoms. Psychological treatments include cognitive behavioral therapy (CBT), mindfulness-based therapy (MBT), short-term psychodynamic psychotherapy (STPP), and systemic psychotherapy, etc. In clinical practice, appropriate psychotherapeutic approaches can be selected based on the patient's personality traits and other relevant factors. (1) CBT is the most empirically supported psychotherapeutic approach, and it is the first choice for patients with SSD [13]. CBT focuses on changing patients' cognitions and behaviors regarding somatic symptoms, offering positive coping strategies while dealing with thoughts and feelings directly related to the illness experience. Group format CBT can effectively alleviate somatic symptoms, and individual CBT can alleviate depression and anxiety symptoms [72]. Studies show significant intervention effects of CBT on first-epi-

sode SSD patients [73]. (2) MBT encourages patients to focus attention on the present moment, developing new attitudes towards symptoms, promoting non-judgmental acceptance of physiological or psychological pain, and reducing rumination and catastrophic thoughts regarding these experiences. It has a significant and sustained moderating effect on patients' overall symptom severity, as well as on depressive and anxiety symptoms, within a certain range [70]. (3) Psychodynamic therapy focuses on revealing an individual's unconscious thoughts and feelings, actively searching for the causes and perpetuating factors of symptoms. STPP can significantly alleviate patients' somatic symptoms and improve depression, anxiety, general mental symptoms, disability, and physical functioning, with efficacy lasting over 6 months [74]. (4) Interpersonal psychotherapy is based on the belief that "symptoms of mental illness are often manifested in social and interpersonal contexts", helping patients understand the relationship between the progress of illness and life events and learn ways to handle interpersonal problems, which can significantly improve patients' somatization symptoms [75, 76]. (5) MBT refers to an individual's focus on their own and others' thoughts and feelings, which can be applied to different theoretical frameworks and treatment approaches to optimize patients' social learning ability, thereby promoting social adaptation [77]. (6) Family therapy is an intervention approach based on systemic thinking

and the family as a unit. This theory posits that an individual's abnormal psychological behaviors and physiological functioning occur not only within the individual but also have interactions with the interpersonal system in which they reside. Family therapy aims to eliminate or alleviate the individual's psychological problems in the family by having meetings with the entire family, assigning behavioral homework, and other non-verbal techniques. Family therapy is particularly suitable for children and adolescent patients with SSD, effectively improving somatization, alleviating symptoms, and reducing recurrence [70, 78]. (7) Other psychotherapeutic approaches, such as hypnotherapy, behavioral therapy, humanistic therapy, and integrative therapy, have not yet been sufficiently studied. The recently proposed well-being therapy, which emphasizes positive perception, warrants clinical exploration. (8) In clinical practice, a considerable number of patients are reluctant to undergo psychotherapy. In such cases, enhanced care based on routine treatment can be offered, utilizing psychoeducation, structured counseling, psychiatric interviews, or reattribution training to support patients' recovery and self-management. The overall quality of research on psychotherapy is low to moderate. Due to the nature of the interventions, the lack of blinding among participants, therapists, and people who evaluate the outcomes, there may exist a high risk of bias [79]. Additionally, emerging digital therapeutics (e.g., app-based CBT and virtual reality) have shown potential for pain management, offering accessible and individualized adjunctive options that align with the stepped-care model for SSD [80]. Physiological-signal-driven robotic rehabilitation systems also provide technical references for implementing graded-activity-oriented functional rehabilitation interventions targeting patients with physical dysfunction [81].

Pharmacotherapy for SSD should be initiated only after careful risk-benefit assessment. Currently, no medications specifically target SSD; treatment is typically individualized based on the predominant somatic and psychiatric symptoms [82]. For prominent somatic complaints, treatment targeting symptoms may be employed. When significant anxiety or depression comorbid, anxiolytics (e.g., buspirone and Tandoipirone), antidepressants, or

antipsychotics may be used [83]. Based on research findings in functional somatic syndromes, antidepressants are commonly used to treat somatization symptoms, particularly newer-generation agents including SSRIs (e.g., fluoxetine), SNRIs (e.g., venlafaxine), norepinephrine reuptake inhibitors (e.g., reboxetine), tetracyclic antidepressants (e.g., maprotiline), noradrenergic and specific serotonergic antidepressants (e.g., mirtazapine), serotonin antagonist and reuptake inhibitors (e.g., trazodone), and reversible monoamine oxidase inhibitors (e.g., moclobemide). Other options include agomelatine and vortioxetine. The efficacy of antipsychotics (e.g., olanzapine) for pain-predominant somatization has also been demonstrated. Furthermore, second-generation antipsychotics effectively improve delirium, nausea, vomiting, pain, and cachexia in patients with comorbid malignancies. Antiepileptic drugs (e.g., pregabalin, gabapentin) are also utilized for their analgesic properties in somatoform disorders. A systematic review of 26 RCTs demonstrated that newer-generation antidepressants significantly reduce SSD symptom severity compared with placebo, with no significant differences between individual agents. Notably, combination therapy (SSRIs plus second-generation antipsychotics) showed superior efficacy compared to monotherapy [79]. However, most pharmacological studies on SSD are limited by high risk of bias, substantial data heterogeneity, and small sample sizes, resulting in low evidence quality. Additionally, adverse drug reactions may amplify symptom perception. Therefore, medications should be initiated at the lowest possible dose and titrated gradually to effective doses, with careful monitoring of drug interactions and adverse effects to avoid introducing additional stressors.

Other therapeutic modalities include herbal supplements, neuromodulation interventions, graded activity training, and music therapy. Among the antidepressants derived from plant extracts, hypericum perforatum (also known as St. John's wort) has been the subject of the most extensive research. A randomized, double-blind, placebo-controlled trial demonstrated that St. John's wort has a favorable therapeutic effect and good tolerance for SSD, and the efficacy is not related to the patients' depressive mood [84]. Neuromodulation inter-

vention is a new treatment strategy, including transcranial magnetic stimulation (TMS), transcranial direct current stimulation, and electroconvulsive therapy, which can regulate relevant brain networks and show certain treatment prospects in more and more studies [85]. A clinical study including 10 SSD patients showed that high-frequency TMS may become a relatively safe, well-tolerated, and promising intervention method [86]. A domestic study on the effect of stellate ganglion block combined with low-dose Flupentixol and Melitracen Tablets in the treatment of SSD preliminarily showed that the combination of the two can exert a synergistic effect. Graded activity training is an operant conditioning behavioral method that can improve mood, pain threshold, and sleep through activities of low-to-moderate intensity. Music therapy may alleviate somatic symptoms by reducing subjective stress [87].

Clinical guideline 9: Psychotherapy is the first choice for SSD. Cognitive behavioral therapy is the primary choice (Class I evidence, level A recommendation). Biofeedback therapy (Class II evidence, level B recommendation), mindfulness-based therapy (Class II evidence, level B recommendation), short-term psychodynamic psychotherapy (Class III evidence, level B recommendation), and systemic therapy (Class III evidence, level B recommendation) also have certain therapeutic effects. It is recommended to select an appropriate approach based on the patient's personality traits and deliver individualized psychotherapy.

Clinical guideline 10: Currently, there is no targeted medication for SSD; selecting appropriate drugs based on somatic symptoms and comorbidities helps alleviate symptoms. If somatic symptoms are obvious, symptomatic treatment can be given. The recommended first-choice drugs are SNRI types, including duloxetine and venlafaxine (Class I evidence, level A recommendation) and SSRI types, including fluoxetine (Class I evidence, level A recommendation). If significant anxiety and depression symptoms are comorbid, anti-anxiety drugs, antidepressants, and antipsychotics can be applied. The recommended first-choice drugs are SNRI types, including duloxetine and venlafaxine (Class I evidence, level A recommendation); SSRI types, including sertraline, citalopram, and escitalopram (Class II evidence,

level B recommendation), NaSSAs types, including mirtazapine (Class III evidence, level B recommendation), and Low-dose antipsychotic drugs such as olanzapine (Class III evidence, level B recommendation) and quetiapine (Class IV evidence, level B recommendation). Clinical recommendation is the strategy of medication combined with psychological intervention.

Clinical guideline 11: Physical therapy recommends the first choice of repetitive transcranial magnetic stimulation (Class II evidence, level B recommendation). Other therapeutic methods, such as herbal decoctions and prepared Chinese medicines, neuromodulation interventions, graded activity training, and music therapy, may serve as complementary interventions and hold promise as therapeutic options.

Prognosis

The course of SSD is chronic and protracted. In a 4-year prospective study, the persistence rate of SSD was observed to be 58.6% and the remission rate was 41.4%; psychological impairment related to somatic symptoms is a key predictor of the persistent course of SSD [88]. In a 1-year follow-up study of SSD patients with dizziness and vertigo symptoms, the persistence rate of SSD was 82%, and risk factors for a persistent course were a self-perception of physical weakness and depression during the study period. Additionally, a diagnosis of anxiety disorder or combined anxiety and depression at baseline were important predictors [61]. Another prospective cohort study showed that anxiety and alexithymia were significantly correlated with the severity of somatic symptoms, suggesting a self-reinforcing cycle between emotional dysregulation and somatic distress [89]. A retrospective cohort study evaluated functional recovery 18-30 months after discharge in adolescent patients with SSD, finding that 81% recovered fully or partially. Patients whose parents fully accepted the SSD diagnosis had higher treatment engagement and a greater likelihood of complete recovery [90, 91]. The number of somatic symptoms, psychological distress related to somatic symptoms, and anxiety symptoms related to health are predictors of SSD recurrence. Additional unfavorable prognostic factors include neuroticism, low educational level and socioeco-

conomic status, and unavoidable stressful situations in life [92].

For challenging chronic cases, clinicians should, on one hand, adhere to the principle of “do no harm”, avoiding unnecessary investigations and treatments without clear indications merely to accommodate patient demands. On the other hand, maintaining a “never abandon” commitment through regular follow-up and providing comprehensive clinical care remains essential. Disease management emphasizes a collaborative therapeutic relationship, guiding patients in self-management [93]: (1) Lifestyle modifications including adequate rest and regular exercise, with gradual introduction of low-to-moderate intensity aerobic and resistance training with slow titration; (2) Emotional coping: documenting thoughts and feelings during time of physical discomfort to identify symptom triggers; (3) Active engagement in social activities and return to daily routines gradually.

Clinical guideline 12: The course of SSD is protracted; during treatment, it is necessary to establish a therapeutic alliance with the patient and conduct long-term, regular follow-up to monitor efficacy and adverse reactions, focusing on symptom-related psychological distress, anxiety, depression, and social background factors that influence prognosis. It is necessary to first conduct SSD diagnosis and treatment training for medical staff and healthcare administration managers to promote the standardized diagnosis and treatment of SSD.

SSD is common across clinical departments in medical institutions at all levels. It damages patients' daily functioning significantly and leads to a waste of healthcare resources. Here, we advocate for prioritizing training programs for medical staff, aimed at enhancing clinicians' awareness of SSD and its common comorbidities. It is essential to focus on establishing a doctor-patient therapeutic alliance, implementing the philosophy of psychosomatic integration throughout the process of consultation and treatment, evaluating biopsychosocial factors comprehensively, and establishing a “multidisciplinary collaborative hierarchical diagnosis and treatment” model to deliver individualized treatment grounded in shared clinical features. The publication of this clinical practice guideline marks the first step in SSD diagnosis and treatment work in China. Further

high-quality research evidence is still needed to explore the epidemiology, pathogenesis, and treatment strategies of SSD. This multidisciplinary expert consensus on the recognition and management of SSD will be revised based on the accumulation of real-world clinical evidence, continuing to provide clinicians with the latest evidence-based recommendations for recognition and management, helping patients achieve early recovery and bring benefits to their families and society as a whole.

Acknowledgements

This study was supported by the National Key Research and Development Program of China (2023YFC2506205).

Disclosure of conflict of interest

None.

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