Dysfunctional illness perception and illness behaviour associated with high somatic symptom severity and low quality of life in general hospital outpatients in China

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ABSTRACT

Objective: In primary care populations in Western countries, high somatic symptom severity (SSS) and low quality of life (QoL) are associated with adverse psychobehavioural characteristics. This study assessed the relationship between SSS, QoL and psychobehavioural characteristics in Chinese general hospital outpatients.
Methods: This multicentre cross-sectional study enrolled 404 patients from 10 outpatient departments, including Neurology, Gastroenterology, Traditional Chinese Medicine [TCM] and Psychosomatic Medicine departments, in Beijing, Shanghai, Chengdu and Kunming. A structured interview was used to assess the cognitive, affective and behavioural features associated with somatic complaints, independent of their origin. Several standard instruments were used to assess SSS, emotional distress and health-related QoL. Patients who reported low SSS (PHQ-15 < 10, $n = 203$, SOM−) were compared to patients who reported high SSS (PHQ-15 ≥ 10, $n = 201$, SOM+).
Results: As compared to SOM− patients, SOM+ patients showed significantly more frequently adverse psychobehavioural characteristics in all questions of the interview. In hierarchical linear regression analyses adjusted for anxiety, depression, gender and medical conditions (SSS additionally for doctor visits), high SSS was significantly associated with "catastrophising" and "illness vulnerability"; low physical QoL was associated with "avoidance of physical activities" and "disuse of body parts"; low mental QoL was associated with "need for immediate medical help."
Conclusion: In accordance with the results from Western countries, high SSS was associated with negative illness and self-perception, low physical QoL with avoidance behaviour, and low mental QoL with reassurance seeking in Chinese general hospital outpatients.

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Introduction

Somatic symptoms are associated with impaired self-rated health in Western countries [1] and China [2,3]. Leventhal's self-regulatory model has been widely used to describe how individuals respond to somatic symptoms regardless of aetiology [4,5]. The model proposes that in facing somatic symptoms, individuals develop a certain cognitive and emotional illness representation that motivates corresponding illness behaviour to cope with these symptoms. Some Western studies have found strong evidence supporting the use of some psychological variables to identify people with high somatic symptom severity (SSS) [6–10]. Some Western studies also demonstrate that psychobehavioural features may influence the quality of life (QoL) of patients with somatic complaints [7,11–14]. Several studies have shown a correlation between SSS and the diagnosis of somatoform disorders [15,16]. Recently, the DSM-5 defined "Somatic Symptom Disorder" (SSD) as a new category de-emphasised the central role of medically unexplained symptoms

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and defined the disorder on the basis of persistent somatic symptoms associated with disproportionate thoughts, feelings and behaviours related to these symptoms [8].

Several cognitive, emotional and behavioural features have been described in previous Western studies [17–20]: *Illness worries*, also referred to as *health-related anxiety*, are a ubiquitous experience that arises when bodily sensations or changes are believed to be indicative of a serious disease [21,22]. *Catastrophising* is the tendency to over-interpret the likelihood and/or intensity of potential negative consequences of symptoms [19]. *Somatic preoccupation* (as well as *rumination*) is a form of preservative cognition that repetitively focuses on the symptoms, their possible serious causes and the negative consequences feared to be associated with them [23,24]. *A negative self-concept of bodily weakness* refers to an intolerance of stress and any physical challenges [17,25]. *Avoidance behaviour* refers to activities or stimuli that are directly (e.g., physical activities) or indirectly (e.g., social activities) associated with the somatic complaints [19].

Psychobehavioural features may also have an influence on the QoL of patients with somatic complaints [7]. Dysfunctional illness behaviour such as "safety seeking." avoidance of physical activity and repeated doctor visits are associated with poorer physical and psychological wellbeing [20]. Inappropriate behavioural responses to pain, e.g., extreme fear avoidance, are found to be predictors of a poor health outcome [20,26].

The cultural background shapes the interpretation of somatic symptoms and thereby influences an individual's illness perception and illness behaviour [27,28]. To date, only three studies [2,3] have focused on the relationship between psychobehavioural variables, SSS and QoL in Chinese general hospital outpatients. Two studies utilised illness perception and illness behaviour questionnaires to assess the psychological features of Chinese outpatients with somatic complaints [2,3]. However, these questionnaires did not perform very well in this population because of a misunderstanding of the questions, mostly due to the low educational level of some participants. Moreover, the operationalisation of each psychobehavioural criterion was not assessed [2]. Therefore, instead of utilising questionnaires, an interview should be the preferred strategy used to assess the psychological features of Chinese outpatients with somatic complaints.

The aim of this study was to evaluate psychobehavioural features among Chinese general hospital outpatients with high SSS. Our specific research aims were as follows:

(1) to understand how Chinese outpatients with high somatic symptom severity (SOM+) differ from patients with low somatic symptom severity (SOM−) in terms of sociodemographic and clinical data, illness perception and illness behaviour, emotional distress and QoL;
(2) to evaluate which of these psychobehavioural variables may serve as the strongest predictor variables of SSS;
(3) to analyse the relationship linking QoL to illness perception and illness behaviour in SOM+ patients.

Based on previous studies, we examined the following hypotheses:

(1) Chinese general hospital outpatients with high SSS (PHQ-15) show strong correlations with sociodemographic characteristics and clinical data such as younger age, living alone, being female, a longer symptom duration, a higher number of doctor visits and a higher number of medical conditions; patients with high SSS show a strong correlation with cognitive, affective and behavioural features such as illness worries, somatic preoccupation, rumination, self-concept of bodily weakness and avoidance behaviour.
(2) In a hierarchical linear regression, high SSS as a dependent variable is significantly correlated with cognitive, affective and behavioural features. These psychobehavioural features also remain significant after controlling for depression (PHQ-9), anxiety (GAD-7), doctor visits and relevant medical conditions.

(3) In a hierarchical linear regression, the physical and mental QoL (SF-12) of SOM+ patients as dependent variables are also significantly correlated with the cognitive, affective and behavioural features of the interview, even after controlling for depression (PHQ-9), anxiety (GAD-7) and relevant medical conditions.

Methods

Study design and setting

We performed a multicentre cross-sectional study in 10 outpatient departments (Neurology, Gastroenterology, Traditional Chinese Medicine (TCM) and Psychosomatic Medicine) in Beijing (Union Hospital), Shanghai (Tongji Hospital, Shanghai Mental Health Centre and Dong Fang Hospital), Chengdu (West China Hospital of Sichuan University) and Kunming (Red Cross Hospital). All hospitals were so called "3A hospitals." indicating that they meet the highest standards in China [28]. They are comprehensive or general hospitals at the city, provincial or national level with bed capacities exceeding 500. These hospitals are responsible for providing specialist health services, performing a more significant role with regard to medical education and scientific research and serving as medical hubs providing care to multiple regions [29].

Subjects

On randomly assigned screening days, all patients who entered one of the departments were informed of the study via an informational hand-out and asked to participate. Written informed consent was obtained from all participants. Research assistants screened patients using the somatic symptom scale of the Patient Health Questionnaire (PHQ-15). The PHQ-15 assesses the presence of bothersome somatic complaints during the previous 4 weeks. A cut-off score of 10 points was used as the criterion for clinically relevant SSS (SOM+) [15,29]. Recruitment continued until 25 SOM+ (PHQ-15 ≥ 10) and 25 SOM− (PHQ-15 < 10) patients in each department were enrolled. The study centre at the University Medical Centre Freiburg stored all data, regularly monitored all project sites and analysed the data. The study was approved by the ethics committees of the two principal investigators' (XZ and KF) university affiliations, the Shanghai Dong Fang hospital and the University Medical Centre Freiburg. The data were collected by research assistants between July 1, 2011 and June 30, 2012. For inclusion, participants were required to be at least 18 years of age, to be visiting for treatment (i.e., not only picking up a prescription), to have adequate reading and writing skills and to have signed a written consent form. Exclusion criteria included the presence of a language barrier, limited writing skills, cognitive impairment, psychosis and acute suicidal tendency. Participating patients completed the questionnaires alone in the waiting room. The patients were then interviewed by the research assistants using the "Interview about Cognitive, Affective, and Behavioural Features Associated with Somatic Complaints" [6,7]. The research assistants were postgraduate medical students in psychiatry under supervision of the heads of the Departments of Psychosomatic Medicine and Psychological Medicine.

Interview about cognitive, affective and behavioural features associated with somatic complaints

The structured clinical interview assesses disproportionate thoughts, feelings and behaviours related to somatic symptoms such as illness worries, catastrophising, somatic preoccupation, rumination, a self-concept of bodily weakness and avoidance behaviour. The criteria were selected from previous studies using self-rating scales of illness cognition, illness attributions and illness behaviour. The original version was shortened from 28 to 18 items. A total of 17 items were selected from the pool of 28 items, which, in the publication by Rief et al. [7], distinguished among individuals with low SSS, individuals with high