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Original Research Report

Validating the Structure of the Depression and Somatic Symptoms Scale

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Background: *Depressed primary care patients may present with somatic symptoms first, complicating differential diagnosis. Clinicians have few instruments for assessing this comorbidity.* **Objective:** *To evaluate the psychometrics of the translated Chinese Depression and Somatic Symptoms Scale (DSSS) in Americans.* **Procedures:** *A total of 491 nonclinical but symptomatic ethnically-diverse individuals completed the DSSS and Center for Epidemiologic Studies Depression Scale (CES-D).* **Results:** *Factor analysis yielded 2 distinct factors: depression and somatic symptoms. DSSS and subscales showed internal consistency, reliability, and convergent validity with CES-D and subscales.* **Conclusions:** *These results support DSSS's trustworthiness for US populations. Using DSSS for patient assessment may assist diagnosis and inform interventions.*

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Key words: Depression, Somatization, Primary care, Psychology, Somatic symptoms, Comorbidity.

VALIDATING THE STRUCTURE OF THE DEPRESSION AND SOMATIC SYMPTOMS SCALE

Somatic symptoms (e.g., psychomotor abnormalities and weight changes) are a core part of major depressive disorder (MDD).[1] Other somatic complaints (e.g., pain and gastrointestinal symptoms) often accompany depression.[2,3] These complaints are related to worse functioning and inordinate outpatient and inpatient service utilization even when controlling for comorbid medical and psychiatric disorders.[4] People may also present with somatic symptoms as their primary complaint in primary care settings.[2,3,5] Moreover, somatic symptoms may be better predictors of longitudinal mortality and response to psychotropic treatment than affective symptoms.[6,7]

Some cultures, such as East Asian cultures, may encourage expression of somatic symptoms,[8–10] although the evidence is equivocal for this assertion.[11–13] Some variability may come from differences in samples (e.g., students, primary care patients, and psychiatric outpatients) or disparate measurement of somatic symptoms. For example, some studies have used symptom checklists,[12] others have used the number of symptoms endorsed on structured interview,[11,13] others have created somatic factors from various self-report instruments,[10] and others have used

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pre-established somatic factors from depression instruments.[14] This practice can increase errors as not all relevant somatic symptoms are reflected within MDD diagnostic criteria; furthermore, different depression instruments do not have equivalent representation of somatic symptoms and the somatic factors may not have adequate psychometrics in some samples.[15,16]

To address limitations in the assessment of somatic symptoms in the context of depression, Hung et al.[17] developed a scale to monitor both depression and somatic symptoms with subscales (12 and 10 items, respectively; see Appendix). Of note, the depression subscale assesses symptoms classically considered a part of depression, including cognitive and affective symptoms (e.g., sadness, anhedonia, guilt, and rumination) in addition to somatic symptoms (e.g., insomnia, fatigue, and appetite change).The somatic subscale includes a range of diffuse somatic symptoms not classically considered a part of depression, including 5 pain items comprising a pain subscale. Somatic items were culled from other measures or created based on clinical consensus, and final items were included based on psychometric performance (e.g., item-total correlations and structural validity).

This scale was first developed in Chinese (traditional form) and was validated with a sample of Taiwanese outpatients with MDD.[17,18] These studies determined that a cutoff of 19 on the depression subscale had an 89% classification accuracy for MDD.[22] They also created severity ranges for the depression (>8 mild, >18 moderate, >25 severe) and somatic (>5 mild, >10 moderate, >16 severe) subscales. Hung et al.[18] have translated the DSSS into English; however, psychometrics of the English form have not been evaluated.

Given the need for improved assessment of somatic symptoms in the context of depression, the primary purpose of this study was to examine the English DSSS's psychometrics, including internal consistency, convergent, discriminant, and structural validity.

METHOD

Participants

The scales were administered to 491 U.S. undergraduate students. Initial inclusion criterion was obtaining a cutoff score of 2 or above on the Patient Health Questionnaire–Depression scale (PHQ-9)[19] to provide a relevant clinical analog and reduce floor effects. Participants were young (M age $= 19.26$, $SD = 1.36$), mostly women (66.4% female), and ethnically diverse (White, 51.1%; Latina/o, 20.6%; Black, 15.5%; American Indian, 2.2%; and other and Multiracial, 10.6%).

Socioeconomic status was assessed via parent education (less than high school, 9.1%; high school, 50.1%; bachelor's, 26.2%; and graduate education, 14.7%) and occupation (administrator/semiprofessional, 24.1%; major business manager/minor professional, 22.4%; skilled manual labor, 12.9%; clerical/sales worker, 9.2%; homemaker/self-employed, 8.8%; higher executive/large business owner, 7.4%; semiskilled worker, 4.9%; unskilled/self-taught worker, 1.5%; and unknown/something else, 8.8%). Occupational categories were determined using Hollingshead[20] criteria.

In terms of medical and mental conditions, most participants reported no history (85.1% and 84.3% for medical and mental conditions, respectively). About 72.1% of participants stated that they were not currently taking any prescribed medications, and 96.3% denied experiencing any medication side effects. Most participants (67.2%) denied ever having psychotherapy or counseling.

Instruments

The Depression and Somatic Symptoms Scale

The DSSS is a 22-item self-report instrument designed to measure depression and somatic symptoms in clinical samples,[18] showing adequate psychometrics in an MDD and non-MDD Taiwanese outpatient sample, including internal consistency, 1-week temporal stability, criterion validity, sensitivity to psychotropic treatment, and convergent and discriminant validity.[17,18,21,22] The theoretically-constructed depression and somatic scales were mostly verified with the original principle components analysis, though items for insomnia, sex drive, and irritability did not load well on the depression factor in the Chinese MDD sample,[18] which may reflect cultural differences in symptom expression and a tendency for these symptoms to cluster with the somatic subscale.

Center for Epidemiologic Studies Depression Scale (CES-D)

The CES-D is a 20-item scale designed to measure depressive symptoms in nonclinical populations for