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ICD-10 Somatic Syndrome among Older Outpatients with Depression at a Single Hospital in Can Tho, Vietnam: A Cross-Sectional Study

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Abstract **Objectives:** Somatic features may complicate assessment of depression in later life, particularly when physical illnesses and medication effects produce overlapping complaints. Evidence describing the ICD-10 somatic syndrome in Vietnamese geriatric clinical settings is limited. **Methods:** This single-centre, hospital-based cross-sectional study included 130 outpatients aged ≥60 years diagnosed with depression according to ICD-10 at the Geriatrics Department of Can Tho Central General Hospital between January 2022 and July 2023. The outcome was the presence of at least four of eight ICD-10 somatic syndrome features. Demographic, clinical and behavioural characteristics were examined descriptively and in reported logistic regression analyses. The precise recruitment strategy and assessment protocols require confirmation from the original study records. **Results:** Forty-seven of 130 participants (36.2%; reported as 36% in the original manuscript) met the somatic syndrome threshold. Loss of interest (57.7%) and early-morning awakening (51.5%) were the most frequently reported individual features. The reported adjusted odds ratios were 0.239 (95% CI 0.090-0.635) for the depression-severity coding, 0.397 (0.159-0.995) for anxiety, 0.341 (0.140-0.830) for treatment-adherence classification and 25.188 (1.867-339.860) for sleep classification. As the reference categories and data coding were not documented, direction-specific interpretation is not justified. The sleep estimate was highly imprecise, with only four participants in the no-sleep-disturbance group. **Conclusion:** Approximately one-third of this selected sample met the ICD-10 somatic syndrome threshold. Preliminary associations should be interpreted cautiously pending verification of model coding and reanalysis of sparse categories. Larger, multisite studies with explicit assessment of medical comorbidity are needed.

Key Words Depression, Older Adults, ICD-10 Somatic Syndrome, Cross-Sectional Study, Vietnam

INTRODUCTION

Depression in later life is clinically important because it co-occurs with functional impairment, diminished quality of life and chronic medical conditions [1-3]. Its assessment can be challenging when patients report disturbed sleep, appetite changes or other bodily complaints that may also arise from physical disease, frailty, medication effects or ageing.

The ICD-10 somatic syndrome specifier represents a defined cluster of eight features, including anhedonia, loss of emotional reactivity, early-morning waking, diurnal mood variation, psychomotor change, appetite loss, weight loss and loss of libido [4-7]. It differs from broad "somatic symptom burden", which may encompass fatigue, pain, gastrointestinal symptoms and other physical complaints. Estimates based on one or more broadly defined physical symptoms should therefore not be compared directly with a four-of-eight ICD-10 threshold [4,8,9].

Local clinical data may inform how frequently this defined syndrome is identified among older outpatients with depression. However, a hospital-based sample cannot establish population prevalence in Can Tho or Vietnam. The primary research question was: What proportion of older outpatients with ICD-10 depression at a single hospital met the ICD-10 somatic syndrome threshold? A secondary objective was to describe associations between somatic syndrome classification and measured demographic, physical, clinical and psychosocial characteristics, without attributing causality.

METHODS

Design and Setting

A hospital-based, cross-sectional observational study was conducted at the Geriatrics Department of Can Tho Central General Hospital, Vietnam, from January 2022 to July 2023. The study was reported in accordance with applicable STROBE cross-sectional reporting principles, subject to the reporting gaps identified below.

Eligibility and Participant Selection

Eligible participants were outpatients aged ≥60 years who had a diagnosis of depression according to ICD-10 and agreed to participate. Exclusion criteria reported in the original manuscript were another diagnosed mental disorder and/or dementia, severe acute medical illness, or inability to respond to an interview. Recruitment method (consecutive versus convenience), numbers screened, exclusions by reason, refusals and the method used to assess cognitive capacity were not available in the supplied manuscript; these must be verified against source records before submission. Consequently, no recruitment flow diagram with invented counts is included.

Sample Size

The original sample-size calculation used a single-proportion formula with an assumed proportion of 0.45, 95% confidence and an absolute precision of 0.09; its estimated minimum was approximately 118, with an additional allowance yielding a target of 130 [8-12]. The relatively wide planned margin of error constrains the precision of the prevalence estimate. The achieved sample included 130 participants.

Outcome Definition and Assessment

The primary binary outcome was ICD-10 somatic syndrome, defined as at least four of the following eight features: (1) marked loss of interest or pleasure; (2) lack of emotional reaction to usually pleasurable events or surroundings; (3) waking ≥2 hours before the usual time; (4) depression worse in the morning; (5) objectively marked psychomotor retardation or agitation; (6) marked loss of appetite; (7) weight loss of at least 5% of body weight in the previous month; and (8) marked loss of libido [7,13]. Individual-feature percentages were described separately from the binary syndrome classification.

The original record does not adequately document interviewer training, source of symptom information, how psychomotor change was observed, how weight loss was verified, or how clinicians distinguished symptoms from medical illness or adverse drug effects. These details must be supplied from the actual study protocol. Without such documentation, misclassification cannot be excluded.

Explanatory Measures and Potential Confounding

Reported variables included age, sex, living arrangement, Body Mass Index (BMI), physical activity, hypertension status and duration, depression severity, anxiety, medication adherence (GMAS), Sleep Quality (PSQI) and quality of life (WHOQOL). The manuscript does not provide the exact Vietnamese instrument versions, subscales, scoring and cut-off criteria, validation evidence, or physical-activity questions. Nor does it document systematic recording of chronic diseases and medication regimens. These are important measurement and residual-confounding limitations; instrument characteristics must be added only after checking the original questionnaires.

Statistical Analysis

The original analyses were performed using SPSS 27.0 and included descriptive statistics, Fisher's exact test, the Mann-Whitney U test, a t test for BMI and a multivariable logistic regression model. The original manuscript described $p<0.20$ as the screening criterion for model candidates and $p<0.05$ for statistical significance. Reported point estimates are retained for transparent comparison, but the model should be rerun with documented predictor coding, reference levels, complete-case sample size, handling of missing data, adjustment rationale and model diagnostics. Given the sparse sleep comparison group, a penalised logistic regression sensitivity analysis (for example, Firth's method) should be considered where feasible; it has not been claimed to have been performed.

Ethics

The authors reported that informed consent was obtained from all study participants. Ethics committee name, approval identifier and date, capacity/consent procedures, safeguards for suicidal ideation and psychiatric risk and confidentiality/data-storage procedures were not provided in the source manuscript and require documentation from the investigators. Ethical approval must not be assumed or fabricated.

RESULTS

Participant Characteristics

The mean age was 75.73 years (SD 8.38) and mean BMI was 21.83 kg/m² (SD 2.86). Of the 130 participants, 110 were women (84.6%) and 20 men (15.4%); 122 (93.8%) lived with others and 91 (70.0%) were classified as having low physical activity (Table 1).

Frequency of ICD-10 Somatic Syndrome

Forty-seven participants were classified as having somatic syndrome (47/130; 36.2%) and 83 did not meet the threshold. Loss of interest (57.7%) and early-morning awakening (51.5%) were the most common of the eight individual features; the least frequent were loss of libido (8.5%) and psychomotor retardation (4.6%). As psychomotor agitation and retardation are combined in the ICD-10 criterion, the original graph label should be checked against the study coding (Table 2).

Unadjusted Comparisons

The original Table 3 contained a sex-label reversal: the 39/71 outcome counts sum to 110 and therefore correspond to women, while the 8/12 counts sum to 20 and correspond to men. The hypertension comparison was also described in the wrong direction in the text: 6/8 (75.0%) of those newly diagnosed had somatic syndrome, compared with 41/122 (33.6%) of those previously diagnosed. These corrections follow arithmetic consistency; they must still be checked against the patient-level dataset.

Table 1: Sociodemographic and Health-Related Characteristics of the Study Participants (N = 130)

Characteristic	Value
Participants	130
Age, mean (SD), years	75.73 (8.38)
BMI, mean (SD), kg/m²	21.83 (2.86)
Women, n (%)	110 (84.6)
Men, n (%)	20 (15.4)
Living with others, n (%)	122 (93.8)
Living alone, n (%)	8 (6.2)
Low physical activity, n (%)	91 (70.0)
Moderate-to-high physical activity, n (%)	39 (30.0)

Table 2: Prevalence of Individual Depressive Symptoms among the Study Participants (N = 130)

Individual symptom (original figure label)	Reported (%)
Loss of interest	57.7
Early awakening	51.5
Marked loss of appetite	46.9
Lack of emotional response	35.4
Weight loss	21.5
Worse in the morning	18.5
Loss of libido	8.5
Psychomotor retardation	4.6

Table 3: Factors Associated With Depressive Syndrome among Older Adults: Sociodemographic, Clinical, Psychological, Medication Adherence, Quality-of-Life and Sleep Characteristics (N = 130)

Variable / category	Syndrome yes	Syndrome no	Original reported p
Women	39 (35.5%)	71 (64.5%)	0.801 (sex overall)
Men	8 (40.0%)	12 (60.0%)	
Living with others	46 (37.7%)	76 (62.3%)	0.257
Living alone	1 (12.5%)	7 (87.5%)	
Low activity	40 (44.0%)	51 (56.0%)	0.005
Moderate-high activity	7 (17.9%)	32 (82.1%)	
Previously diagnosed hypertension	41 (33.6%)	81 (66.4%)	0.026
Newly diagnosed hypertension	6 (75.0%)	2 (25.0%)	
Mild depression	14 (19.2%)	59 (80.8%)	<0.001
Moderate-severe depression	33 (57.9%)	24 (42.1%)	
Mild-moderate anxiety	17 (23.6%)	55 (76.4%)	<0.001
Severe anxiety	30 (51.7%)	28 (48.3%)	
Good medication adherence	24 (25.8%)	69 (74.2%)	<0.001
Poor medication adherence	23 (62.2%)	14 (37.8%)	
Poor quality of life	14 (56.0%)	11 (44.0%)	0.022
Moderate-good quality of life	33 (31.4%)	72 (68.6%)	
No sleep disturbance	3 (75.0%)	1 (25.0%)	0.13
Sleep disturbance present	44 (34.9%)	82 (65.1%)	

Note: Percentages are within-category. P-values are transcribed from the supplied manuscript and have not been independently recalculated. Incorrect or reversed unadjusted odds ratios have been omitted rather than reproduced as verified results. Some contrasts have very small cell sizes

Table 4: Multivariable Logistic Regression Analysis of Factors Associated with Depressive Syndrome among Older Adults: Adjusted Odds Ratios, 95% Confidence Intervals and p-values

Covariate (original coding unknown)	Reported adjusted OR	95% CI	p
BMI	0.856	0.721-1.017	0.077
Physical activity	2.860	0.922-8.868	0.069
Hypertension diagnosis	0.490	0.237-1.013	0.056
Depression severity	0.239	0.090-0.635	0.004
Anxiety level	0.397	0.159-0.995	0.049
GMAS classification	0.341	0.140-0.830	0.015
WHOQOL classification	0.978	0.626-1.527	0.901
PSQI classification	25.188	1.867-339.860	0.015

Important: These are previously reported model outputs, NOT independently verified adjusted associations. Before resubmission, replace the table with reproducible estimates, including the explicit outcome event definition, predictor contrasts/reference levels, regression N, missingness, standard errors and sensitivity checks. Investigate the discrepancy between the unadjusted and adjusted sleep estimates

Reported Multivariable Model (Requires Reproducibility Audit)

The original model identified depression severity, anxiety, medication-adherence category and sleep classification as statistically associated with the outcome in the reported model. However, the absence of explicit reference groups makes substantive direction of the odds ratios indeterminate. In particular, the OR for sleep disturbance (25.188, 95% CI 1.867-339.860) is unstable; only four participants had no sleep disturbance and the unadjusted

comparison had p = 0.13. Differences between crude and adjusted estimates may arise from coding, confounding or sparse-data bias and require reanalysis rather than speculative explanation (Table 4).

DISCUSSION

Principal Findings and Construct Interpretation

In this selected hospital sample, 36.2% met the ICD-10 threshold for somatic syndrome. This is a threshold-based classification and should not be interpreted as the proportion who reported any bodily symptom. Earlier Vietnamese and international studies reporting one or more broad somatic complaints [4,8,9,14] therefore address different constructs. Differences in populations, clinical settings, measures and case definitions prevent straightforward prevalence comparisons.

In older adults, medical comorbidity, frailty, sleep disorders and medication adverse effects may mimic or compound depressive symptoms. Without a documented symptom-attribution protocol or comprehensive comorbidity adjustment, some syndrome indicators may not be uniquely attributable to depression. Moreover, because anhedonia is both a core depressive feature and an ICD-10 somatic syndrome feature, relationships between syndrome classification and depression severity may partly reflect overlapping diagnostic content.

Clinical and Psychosocial Correlates

The unadjusted data suggested that moderate-to-severe depression, severe anxiety and poor adherence co-occurred more often with the syndrome than their comparison categories. These cross-sectional patterns are compatible with reciprocal relationships and shared symptom content; they do not establish that these factors precede or cause the syndrome. With unspecified regression coding, the adjusted odds ratios should not be used to infer that a given exposure increases or decreases odds until the contrasts are verified.

The sleep finding particularly warrants caution. Nearly all participants (126/130) were classified as having disturbed sleep, producing an extremely small unexposed group and a very wide confidence interval around the adjusted estimate. Furthermore, early-morning awakening is itself one of the ICD-10 somatic syndrome features, raising the possibility of construct overlap with PSQI-based sleep disturbance. Consequently, neither the magnitude nor the direction of the adjusted sleep association should guide treatment recommendations without replication.

Hypertension status was not consistently interpreted in the submitted version: the observed proportions were higher among the newly diagnosed group (6/8) than among those previously diagnosed (41/122). With only eight newly diagnosed patients, this difference is fragile and should not be generalized; it also does not establish hypertension as a principal determinant of the outcome.

Clinical Implications

Comprehensive geriatric evaluation remains appropriate when depressed older adults report physical complaints. Assessment should consider mood, anxiety, sleep, medications, chronic conditions and functional status while avoiding automatic attribution of symptoms to either depression or physical disease. The current analysis does not validate a screening tool or support treatment-protocol changes. Medication review and adherence assessment are reasonable elements of routine care but cannot be promoted as interventions shown by these data to reduce ICD-10 somatic syndrome.

Strengths and Limitations

A strength is use of a defined ICD-10 syndrome threshold and consideration of multiple clinical and behavioural measures. Major limitations include single-centre recruitment, a modest sample, strong female predominance, limited planned precision, unavailable recruitment flow and instrument-administration details and uncertain handling of chronic illnesses and medication effects. Cross-sectional data cannot determine temporal sequence or causal effects. Sparse exposure categories, particularly for sleep classification, threaten logistic-model stability. The reported regression lacks coding, reference groups, adjustment rationale, diagnostics and independently verified estimates; therefore, the multivariable results must be viewed as provisional.

CONCLUSION

Among 130 older outpatients with depression at one hospital in Can Tho, 47 (36.2%) met the ICD-10 somatic syndrome threshold of at least four of eight features. Loss of interest and early-morning awakening were common individual indicators. Reported associations with depression severity, anxiety, adherence and sleep classification require confirmation because predictor coding was insufficiently documented and some groups were sparse. Findings support careful assessment of co-occurring depressive and physical symptoms, but do not establish causal relationships or treatment effects. Larger, multicentre studies with rigorous symptom attribution and reproducible statistical analyses are recommended.

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Data Availability

The original manuscript states that supporting data are available from the corresponding author on reasonable request; confirm compliance with consent and ethics restrictions.

Informed Consent

The original manuscript stated that informed consent was obtained from all participants. Details of consent-capacity assessment require confirmation.

Conflicts of Interest

All authors declared no conflicts of interest in the original manuscript.

Ethical Statement

Authors to Insert Verified Ethics Committee Name, Approval Number and Date; If not Obtained, Disclose Accurately and Follow Journal Policy.

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