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DEPRESSED OR NOT DEPRESSED: UNTANGLING SYMPTOMS OF DEPRESSION IN PATIENTS HOSPITALIZED WITH CORONARY HEART DISEASE

By Anthony W. McGuire, RN, PhD, ACNP-BC, CCRN, Jo-Ann Eastwood, RN, PhD, CCNS, ACNP-BC, Ron D. Hays, PhD, Aurelia Macabasco-O'Connell, RN, PhD, ACNP-BC, and Lynn V. Doering, RN, DNSc

CNE 1.0 Hour

Notice to CNE enrollees:

A closed-book, multiple-choice examination following this article tests your understanding of the following objectives:

1. Describe the challenges associated with recognizing depression in patients who are hospitalized with coronary heart disease.
2. Identify the individual symptoms included in the somatic, somatic/affective, and cognitive/affective symptom clusters.
3. Discuss the key findings of this study and their associated nursing implications for improved recognition of depression in patients who are hospitalized with coronary heart disease.

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Background Assessing depression in patients hospitalized with coronary heart disease is clinically challenging because depressive symptoms are often confounded by poor somatic health.

Objective To identify symptom clusters associated with clinical depression in patients hospitalized with coronary heart disease.

Method Secondary analyses of 3 similar data sets for hospitalized patients with coronary heart disease who had diagnostic screening for depression (99 depressed, 224 not depressed) were done. Depressive symptoms were assessed by using the Hamilton Depression Rating Scale or the Beck Depression Inventory. Hierarchical cluster analysis was performed on 11 symptom variables: anhedonia, dysphoria, loss of appetite, sleep disturbance, fatigue, guilt, suicidal symptoms, hypochondriasis, loss of libido, psychomotor impairment, and nervous irritability. Associations between symptom clusters and presence or absence of clinical depression were estimated by using logistic regression.

Results Fatigue (69%) and sleep disturbance (55%) were the most prevalent symptoms. Guilt (25%) and suicidal symptoms (9%) were the least common. Three symptom clusters (cognitive/affective, somatic/affective, and somatic) were identified. Compared with patients without cognitive/affective symptoms, patients with the cognitive/affective symptom cluster (anhedonia, dysphoria, guilt, suicidal symptoms, nervous irritability) had an odds ratio of 1.41 ($P < .001$; 95% CI, 1.223-1.631) for clinical depression.

Conclusion Clinicians should be alert for clinical depression in hospitalized patients with coronary heart disease who have the cognitive/affective symptom cluster. (*American Journal of Critical Care*. 2014;23:106-116)

Symptoms of depression have been correlated with poor outcomes among patients with coronary heart disease (CHD) who have increased risk for further cardiac events after acute coronary syndrome (ACS).¹ Symptoms of depression in patients after ACS have been associated with greater use of primary care services, an increased number of hospital readmissions, increased incidence of chest pain, poorer adherence to medical recommendations,² decreased incidence of returning to work,³ and increased numbers of adverse health events.^{4,5} In 2008, concern about these deleterious effects led the American Heart Association, with an endorsement from the American Psychiatric Association, to publish a scientific advisory¹ calling for routine screening of depression in CHD patients.

Despite the advisory, controversy remains about which symptoms of depression are most important in cardiac patients. Studies⁶⁻⁸ have indicated that compared with cognitive/affective symptoms, somatic/affective symptoms are more predictive of health outcomes, including mortality, in cardiac patients. However, somatic indications are confounded by health status, which mediates their relationship with poor outcomes.⁶⁻⁸ In contrast, cognitive/affective symptoms may be underrecognized in cardiac patients because these symptoms are more subtle in these patients than in otherwise healthy, depressed persons.⁹ In addition, cognitive/affective symptoms—but not somatic/affective symptoms—have been associated with prolonged elevation of levels of C-reactive protein, a marker of generalized inflammation, which is in turn a hallmark of CHD.¹⁰ To date, no investigators have evaluated symptom clusters (defined as unique groups of 2 or more symptoms that occur together and are related¹¹) of depression in hospitalized CHD patients.

Evaluation of symptom clusters of depression in CHD patients can inform screening, referral, and treatment for depression.¹ For both depression and CHD, screening and diagnosis involve assessment

of symptom clusters.^{12,13} Because symptom clusters for the 2 conditions may overlap, clinicians are left to attribute symptom clusters to one condition or the other (or both) without any empirical guidance. An awareness of symptom clusters associated with depression in patients with CHD may improve detection of depression by acute care clinicians and potentially improve care for CHD patients who have depression.¹⁴

We retrospectively analyzed data on patients hospitalized because of acute CHD. We tested the following hypotheses: Mutually exclusive clusters of depressive symptoms will be present in patients with CHD who were hospitalized after an acute event, and cognitive/affective symptoms will be associated with the presence of clinical depression (major or minor depression) in these patients.

Methods

Design

Secondary analyses of data from 3 similar studies were conducted. The first study¹⁵ was a pilot study of cognitive behavioral therapy in depressed women hospitalized for a cardiac event; the second was a randomized control trial¹⁶ of the effect of cognitive behavioral therapy on immune biomarkers in cardiac surgery patients with depression; the third was a study¹⁷ of depression screening of hospitalized cardiac patients by nurses. In each study, all patients were hospitalized for an acute coronary event, were assessed for clinical depression (ie, major depression or minor depression) by use of a structured clinical interview, and had symptoms of depression measured by use of standardized instruments.

Collectively, the studies included 323 patients in 3 large urban medical centers who met the inclusion

Symptoms of depression have been correlated with poor outcomes in patients with coronary heart disease.

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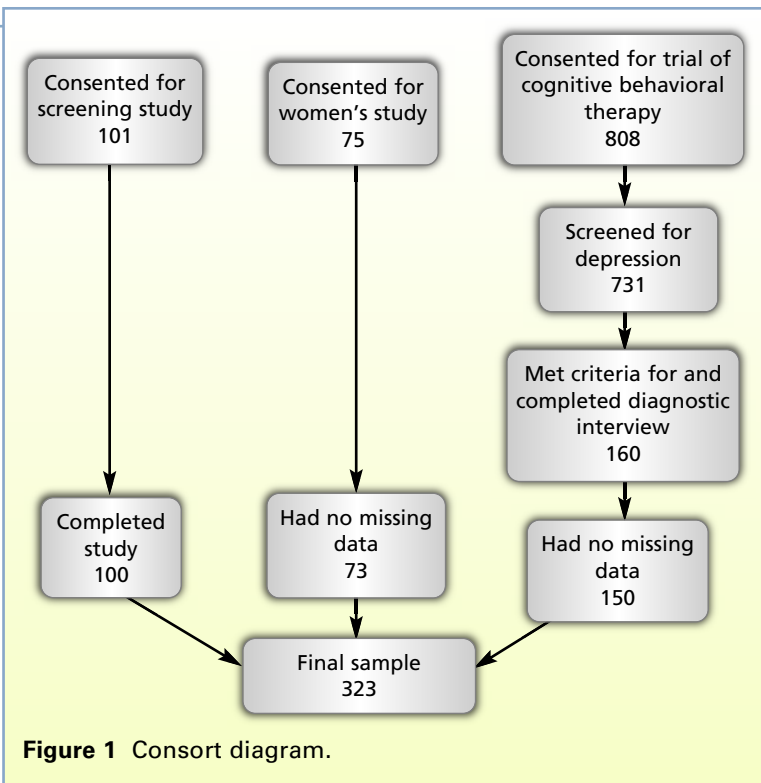


Figure 1 Consort diagram.

criteria of the parent studies and for whom complete data were available. The sample included 73 women from the pilot study on use of cognitive behavioral therapy, 150 patients from the randomized control trial on the effect of cognitive behavioral therapy on immune biomarkers, and 100 patients from the depression screening study (Figure 1). In order to accommodate the large number of initial participants, the researchers in the clinical trial used a screening process, the 10-item Center for Epidemiologic Studies-Short Depression scale,¹⁸ to evaluate patients before the diagnostic interview. Inclusion criteria

for each parent study were similar. Patients were included if they had been admitted to the hospital because of a cardiac event that required medical, surgical, or percutaneous intervention; were 18 years or older; and spoke English. Patients were excluded if they had a psychiatric diagnosis other than anxiety or depression

(determined via structured clinical interviews), were taking psychotropic medications other than selective serotonin reuptake inhibitors and serotonin norepinephrine reuptake inhibitors, had cognitive impairment as indicated by a score of 24 or less on the Mini-Mental State Examination. Inclusion and exclusion were based on data from chart reviews, self-reports, and administration of the Mini-Mental State Examination. All patients were enrolled from cardiac step-down units before discharge from the hospital.

Secondary analyses of data from 3 similar studies were conducted.

Procedure

Each primary trial had been approved by the appropriate institutional review board, and each patient had signed informed consent forms at the institution in which the patient was hospitalized. The secondary analysis was approved by the institutional review board of the University of California, Los Angeles. Screening and subsequent diagnosis of depression were done before discharge from the hospital by using the instruments described in the next paragraph. Demographic and clinical data were obtained by chart review and self-report. All data were de-identified, and new identification numbers were assigned when the 3 data sets were merged.

Instruments

In the 3 parent studies, depressive symptoms were assessed by advanced practice nurses who used either the Hamilton Rating Scale for Depression (HRSD) or the Beck Depression Inventory (BDI). Assessment for major or minor depression was performed by using the Depression Interview and Structured Hamilton (DISH)^{19,20} or the The Structured Clinical Interview for DSM-III-R (SCID).²¹

The DISH and the SCID are structured interview tools that were administered in the parent studies by advanced practice nurses after supervised training. Both tools are commonly used as criterion standards for the diagnosis of depression, and both include modules for detection of other psychiatric disorders and for history of depression.

The DISH was developed for use in the Enhancing Recovery in Coronary Heart Disease (ENRICH) study²⁰ and was recommended by the National Heart, Lung, and Blood Institute for diagnosis of depression in research trials.²² Its use in diagnosing the severity of depression (major, minor, dysthymia) in patients with CHD has been evaluated against the SCID^{20,22}; the weighted κ value was 0.81. In the ENRICH study,²⁰ 93% of diagnoses made by research nurses who used the DISH agreed with diagnoses made by mental health clinicians ($\kappa = 0.95$). The SCID is a complex instrument used to assess for Axis I mental health disorders, including depression, as set forth by the *Diagnostic and Statistical Manual of Mental Disorders*.^{12,21}

Specific depressive symptoms were assessed and measured by using the BDI or the HRSD. The BDI²³ is a self-report instrument with 21 items rated on a severity scale of 0 to 3. It is the most commonly reported measure of depression in clinical studies.^{20,21} Although the BDI was developed for use in psychiatric patients who had no physical illness, it has been evaluated in cardiac patients and its use is well

accepted.^{2,6,22,25,26} The HRSD is a 17-item observer rating tool with various response scales. It has been widely used in medical patients.^{19,20}

For the secondary analysis, variables consistent with commonly measured symptoms of depression were selected from the BDI and HRSD. A panel of content experts formed for this study, 5 experienced mental health advanced practice nurses who participated in the evaluation of the 2 tools, compressed the 21 items on the BDI and the 17 items on the HRSD into the following 11 transformed variables: anhedonia (loss of interest or pleasure in activities), dysphoria (feeling sad, depressed, empty), loss of appetite (loss of perceived desire for food or drink), sleep disturbance (interference with sleep), fatigue (physical or mental weariness), guilt (an awareness of having done wrong, accompanied by shame or regret), suicidal symptoms (thoughts of ending one's life with some degree of intent), hypochondriasis (morbid concern about one's health), loss of libido (perceived loss of interest in sex), psychomotor impairment (a slowing down of thoughts and/or movements), and nervous irritability (state of excitability, with mental or physical unrest; edginess). Symptoms that are not part of the *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision)*¹² diagnostic (ie, hypochondriasis, nervous irritability) were included because they are commonly assessed in screening and treatment-response measures. Each transformed symptom variable was scored as follows: no symptoms, 0; minimal symptoms, 1; moderate symptoms, 2; and severe symptoms, 3. The same panel of content experts evaluated the transformed variables for equivalence to the BDI and HRSD in item construct and severity by using a 4-point scale (0 = strongly disagree to 4 = strongly agree) for each of the 11 variables. Consensus was reached when 3 or more of the 5 experts scored the variable as 3 or more on the 4-point scale.

Analysis

Data were analyzed by using SPSS Predictive Analytics SoftWare Statistics 18.0 (SPSS IBM). Frequencies and means were computed to summarize sample characteristics. Categorical variables were compared by using χ^2 analysis, and continuous variables were compared by using a *t* test.

Hierarchical cluster analysis was performed to partition groups of similar symptoms (agglomerative method) on the basis of the Euclidean distance in the sample axis of a proximity matrix.²⁷ The Ward method was used to measure distances between clusters in an analysis-of-variance approach in which the sum of squares of any 2 clusters is minimized.²⁷

The proximity matrix was used to develop a tree-based dendrogram to pictorialize the clusters. A 3-cluster solution was chosen on the basis of similar statistical distances and even separation of the clusters on the dendrogram.²⁷

Finally, logistic regression was used to evaluate the association of symptom clusters with presence or absence of depression. Each of the 3 symptom clusters was included as a binary variable (present/not present). Demographic and clinical variables correlated with presence/absence of clinical depression at $P \leq .10$ (Table 1) were entered into the regression in a first block, with the 3 symptom clusters entered separately in a second block. Goodness of fit of the model was evaluated by using the Hosmer-Lemeshow statistic. Simple forced entry was used. Significance was set at $P < .05$.

Results

Sample Characteristics

Demographic and clinical characteristics of the sample are presented in Table 1. Of the 323 participants in the study, 99 (31%) were depressed (major or minor depression) according to the results of the structured interview. The sample had 151 women (47%) and 172 men (53%). The prevalence of depression did not differ significantly by sex (54% for women and 46% for men; $P = .10$). ACS was diagnosed in 203 patients (63%). Patients with ACS were less likely to be depressed than were those who had not experienced ACS as part of the hospital admission ($P = .02$). Age, marital status, ethnicity, smoking, use of medications, body mass index, and type of procedure did not differ significantly between patients who were depressed and patients who were not. Patients with depression were more likely ($P = .01$) to have a self-reported history of depression (35%) than were patients who were not depressed (22%).

Fatigue (69%) and sleep disturbance (55%) were the most prevalent depressive symptoms; guilt (25%) and suicidal symptoms (9%) were the least common (Figure 2). Compared with patients who were not depressed, patients who were depressed had higher scores for anhedonia, dysphoria, loss of appetite, sleep disturbance, fatigue, guilt, loss of libido, and nervous irritability ($P < .001$ for all symptoms; Table 2).

Experts chose variables consistent with commonly measured symptoms of depression.

Patients with acute coronary syndrome were less likely to be depressed than those without ACS.

Table 1
Demographic/clinical variables

Variable	No. (%) of group			No. (%) of group		p ^b
	Total (N = 323)	Depressed ^a (n = 99)	% for that variable	Not depressed ^a (n = 224)	% for that variable	
Women	151 (46.7)	53 (53.5)	35	98 (43.8)	65	.10
Not married	121 (37.5)	42 (42.4)	35	79 (35.3)	65	.23
Ethnicity						
White	190 (58.8)	58 (58.6)	31	132 (58.9)	69	.98
Asian	38 (11.8)	11 (11.1)	29	27 (12.1)	71	
Black	34 (10.5)	12 (12.1)	35	22 (9.8)	65	
Hispanic	57 (17.6)	17 (17.2)	30	40 (17.9)	70	
Other	4 (1.2)	1 (1.0)	25	3 (1.3)	75	
Acute coronary syndrome	203 (62.8)	53 (53.5)	26	150 (67.0)	74	.02
Cardiac procedure						.50
Coronary artery bypass graft	238 (73.7)	79 (79.8)	33	159 (71.0)	67	
Percutaneous coronary intervention	37 (11.5)	9 (9.1)	24	28 (12.5)	76	
Medical management	15 (4.6)	5 (5.1)	33	10 (4.5)	67	
Aortic valve replacement	13 (4.0)	2 (2.0)	15	11 (4.9)	85	
Coronary artery bypass graft + valve repair	13 (4.0)	2 (2.0)	15	11 (4.9)	85	
Mitral valve replacement	7 (2.2)	2 (2.0)	29	5 (2.2)	71	
History of depression	84 (26)	35 (35.4)	42	49 (21.9)	58	.01
Former smoker	173 (53.6)	55 (59.1)	32	118 (52.7)	68	.39
Current smoker	29 (9.0)	11 (11.3)	38	18 (8.0)	62	.36
Taking antidepressants	57 (17.6)	19 (19.2)	33	38 (17.0)	67	.63
Taking β-blockers	253 (78.3)	75 (75.8)	30	178 (79.5)	70	.46
Taking statins	260 (80.5)	81 (81.8)	31	179 (79.9)	69	.69
Age, mean (SD), y	64.1 (10.4)	62.9 (10.9)		64.6 (10.2)		.19
Body mass index, ^c mean (SD)	30.6 (11.6)	29.4 (6.3)		31.2 (13.2)		.20

^a Depressed and not depressed determined by structured clinical interview.

^b Difference between depressed and not depressed; *P* values calculated by using *t* test for continuous data and χ^2 analysis for categorical data.

^c Calculated as weight in kilograms divided by height in meters squared.

Symptom Clusters

Three clusters were identified (Figure 3) from the symptom variables proximity matrix (Table 3). Cluster 1 (cognitive/affective symptoms) included anhedonia, dysphoria, guilt, suicidal symptoms, and nervous irritability. Cluster 2 (somatic/affective) included loss of appetite, hypochondriasis, loss of libido, and psychomotor impairment. Cluster 3 (somatic symptoms) included sleep disturbance and fatigue. The names assigned to the clusters are consistent with the existing literature on depressive symptom constructs.^{6,7}

Only the cognitive/affective cluster and presence/absence of ACS were independently associated with

depression in the logistic model that also included the other 2 symptom clusters, sex, and history of depression (Table 4). Patients in the cognitive/affective cluster were 1.41 times more likely to be depressed than were patients not in this cluster ($P < .001$; 95% CI, 1.223-1.631). Patients who experienced ACS at the time of admission were less likely to be depressed than were patients with CHD who were admitted without ACS (odds ratio, 0.446; $P = .004$; 95% CI, 0.255-0.778).

Discussion

Assessment and diagnosis of depression in patients with CHD are complicated by the presence

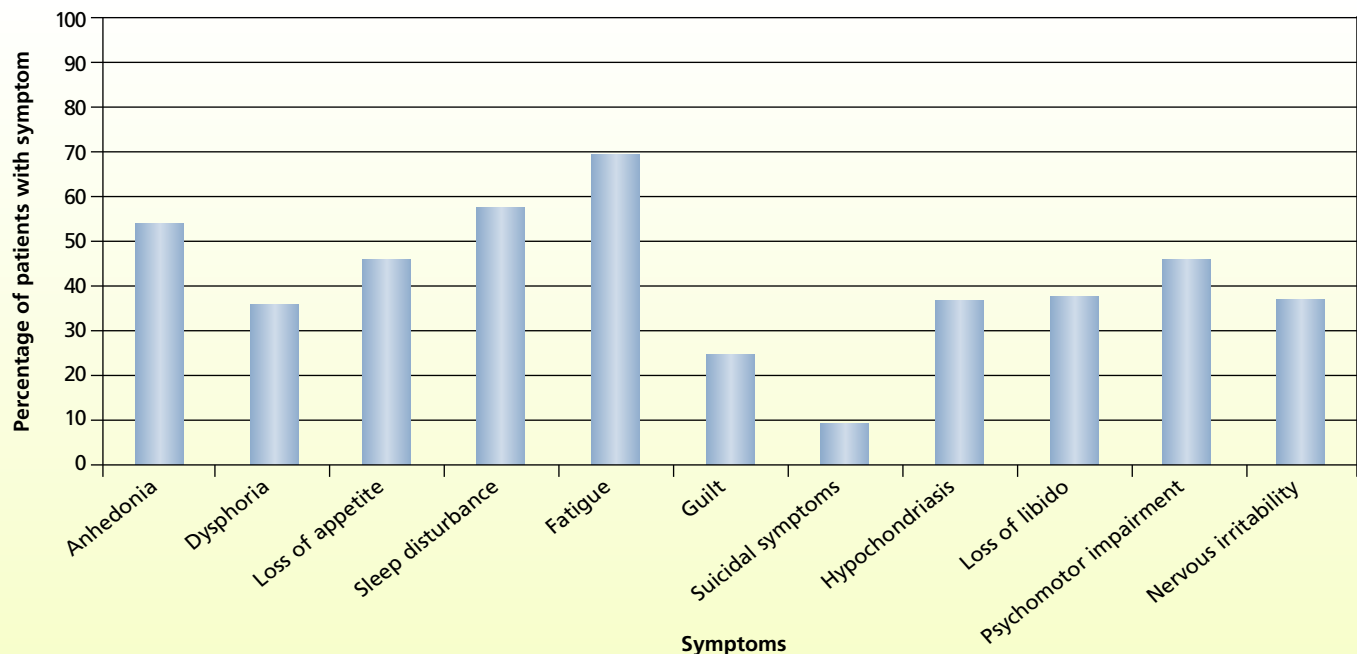


Figure 2 Percentage of depression symptoms in total sample (N = 323).

Table 2
Individual symptom scores (scale 0 to 4) between patients who were depressed and patients who were not depressed

Symptom	Mean (SD)			p ^a
	Total (N = 323)	Depressed (n = 99)	Not depressed (n = 234)	
Anhedonia	0.598 (0.811)	1.000 (0.969)	0.420 (0.658)	<.001
Dysphoria	0.490 (0.724)	0.899 (0.893)	0.308 (0.583)	<.001
Loss of appetite	0.620 (0.800)	0.869 (0.910)	0.508 (0.721)	<.001
Sleep disturbance	0.969 (1.030)	1.313 (1.085)	0.817 (0.969)	<.001
Fatigue	1.043 (0.938)	1.374 (0.985)	0.897 (0.880)	<.001
Guilt	0.322 (0.607)	0.546 (0.773)	0.223 (0.487)	<.001
Suicidal symptoms	0.102 (0.342)	0.131 (0.420)	0.089 (0.301)	.31
Hypochondriasis	0.530 (0.781)	0.596 (0.781)	0.500 (0.781)	.31
Loss of libido	0.669 (0.990)	0.838 (1.085)	0.594 (0.938)	.04
Psychomotor impairment	0.619 (0.760)	0.717 (0.808)	0.576 (0.736)	.12
Nervous irritability	0.508 (0.762)	0.798 (0.833)	0.380 (0.692)	<.001

^aDifference between depressed and not depressed.

of confounding somatic, cognitive, and affective symptoms.^{6,7} In this study, we identified 3 unique symptom clusters (cognitive/affective, somatic/affective, and somatic) that may aid clinicians in targeting patients

with CHD who are most likely to be depressed. Our use of cluster analysis enabled us to identify mutually exclusive clusters, with minimal homogeneity between clusters and maximum homogeneity within clusters.²⁷

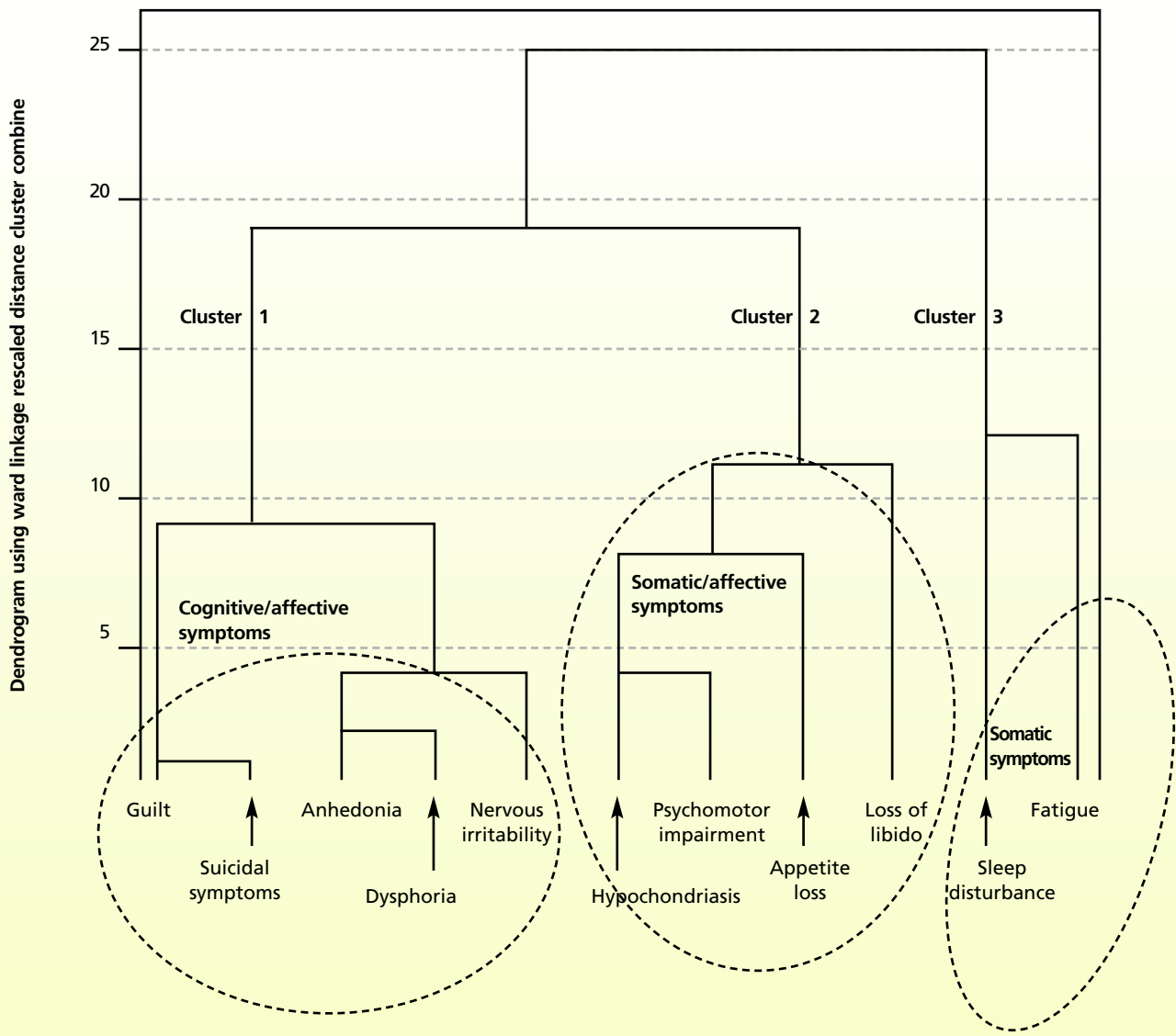


Figure 3 Dendrogram of depression symptom clusters in hospitalized patients with coronary artery disease.

Other investigations of depressive symptoms in cardiac patients have differed from our study in 2 ways. First, the researchers used factor analysis or principal component analysis, which does not produce discrete groups of symptoms.^{6,7,28} Second, previous investigations have focused on cardiovascular prognosis, not depression screening. Interestingly, these reports^{6,7,28} have emphasized the importance of somatic/affective, rather than cognitive/affective, symptoms of depression. Somatic/affective symptoms may be useful in predicting CHD prognosis because they are associated with atherosclerosis as well as depression. Thus, the association of somatic/affective symptoms with prognosis may be mediated in part by the underlying disease process.²⁸ Conversely, because we focused on depression screening rather than on prognosis, our findings

indicate that cognitive/affective symptoms are important because the symptoms distinguish patients who are depressed from patients who are not in a situation in which somatic/affective symptoms are ubiquitous. Cognitive/affective symptoms can be easily overlooked or misconstrued as part of poor somatic health, which often occurs in patients with acute cardiac events. Thus, clinicians caring for hospitalized patients with CHD should pay particular attention to the cognitive/affective symptoms of anhedonia and blue mood.

A key finding of our study is that in patients hospitalized because of CHD, only the cognitive/affective symptom cluster (ie, anhedonia, dysphoria) is associated with clinical depression. These findings favor initial depression screening of patients with instruments that focus on cognitive symptoms of depression, such as the Patient Health Questionnaire-2 (PHQ-2).²⁹⁻³¹

Table 3
Symptom variables proximity matrix^a

Variable	Anhedonia	Dysphoria	Loss of appetite	Sleep disturbance	Fatigue	Guilt	Suicidal symptoms	Hypochondriasis	Loss of libido	Psychomotor impairment	Nervous irritability
Anhedonia	0.000										
Dysphoria	12.689	0.000									
Loss of appetite	18.028	16.186	0.000								
Sleep disturbance	19.287	18.628	19.209	0.000							
Fatigue	18.439	19.261	19.053	19.079	0.000						
Guilt	14.457	12.490	16.912	21.378	21.424	0.000					
Suicidal symptoms	17.088	14.318	17.234	24.125	23.749	12.042	0.000				
Hypochondriasis	16.971	15.652	16.401	21.260	20.199	15.969	15.748	0.000			
Loss of libido	19.824	19.235	19.079	22.472	22.204	19.339	20.664	16.462	0.000		
Psychomotor impairment	16.217	16.000	15.620	20.322	17.234	16.186	16.882	14.318	17.720	0.000	
Nervous irritability	14.731	13.342	16.733	20.075	19.824	14.560	15.460	16.155	18.815	16.125	0.000

^aValues are Euclidean distances between symptoms.

Table 4
Logistic regression model with depression as dependent variable

Variable	B	SE	Wald	P	Exp (B)	95% CI for Exp (B)	
						Lower	Upper
Acute coronary syndrome	-0.808	0.284	8.097	.004	0.446	0.255	0.778
Sex	0.364	0.267	1.854	.17	1.439	0.852	2.430
History of depression	0.338	0.298	1.280	.26	1.401	0.781	2.515
Cognitive/affective	0.345	0.073	22.114	<.001	1.412	1.223	1.631
Somatic/affective	-0.108	0.068	2.503	.11	0.898	0.786	1.026
Somatic	0.130	0.106	1.512	.21	1.139	0.925	1.402
Constant	-1.395	0.322	18.712	<.001	0.248		

Cognitive/affective symptoms of anhedonia and dysphoria are the sole constructs of the PHQ-2.³² If either of the cognitive/affective symptoms is present, then the full PHQ-9, which includes both cognitive/affective and somatic/affective symptoms, is recommended for further assessment.¹ An added advantage of using the PHQ-2 for initial screening is that little time is required, and thus the burden to patients or caregivers is decreased. In summary, our

findings suggest that identification of cognitive/affective and somatic/affective symptoms may have complementary uses for clinicians. Although other investigators have shown that somatic/affective symptoms are important for prognosis, our findings indicate that cognitive/affective symptoms are important for screening.

Further support for our finding that cognitive/affective symptoms are unique correlates of depression

in patients with CHD comes from the *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision)*,¹² in which major depression is defined as a significant mood change that includes 1 or both of the 2 primary symptoms: anhedonia and low mood. In our study, the symptoms that form the somatic/affective cluster (loss of appetite, hypochondriasis, loss of libido, and psychomotor impairment) and those that form the somatic cluster (sleep disturbance and fatigue) represent symptoms of depressive disorders. However, cognitive/affective symptoms, such as those in the cognitive/affective cluster, must accompany these somatic symptoms before a condition can be diagnosed as depression.¹² Thus, our findings are consistent with the diagnostic criteria for clinical depression.

When we considered clusters in multivariate analyses, we found that absence of ACS was the only variable independently associated with depression other than the presence of cognitive/affective symptoms (Table 4). Possibly, either patients with ACS or patients without the syndrome had greater experience with cardiac symptoms, a situation that could have influenced the different rates of depression in the 2 groups, because chronic heart disease is associated with greater rates of depression than is new-onset disease.³³ We did not assess the occurrence of previous cardiac events or the duration of CHD in our sample. Thus, we cannot examine the influence of living with CHD on rates of depression in our patients. In addition, a history of depression was a significant correlate of depression according to the multivariate analysis. The percentages of patients with and without depression who had histories of depression were within the wide range (27%-67%) reported in other studies.³⁴⁻³⁷ Further study is needed to assess the differences in cognitive/affective symptoms of depression in ACS patients compared with chronic CHD patients and the relationship of a history of depression to the rate of depression in both populations.

Limitations

Our use of a combined secondary data set derived from the data of 3 other research studies may have affected the internal validity of the data. In the 3 parent studies, 2 separate structured clinical interviews were used. Also, in 2 of the parent studies, the researchers used the BDI to assess depressive symptoms, whereas the HRSD was used in the third. For the clinical interviews, the possible lack of internal validity in our study due to the instruments we used was mitigated by the use in the parent studies of a panel of mental health clinicians to adjudicate

all cases of clinical depression (major or minor). To mitigate the possible influence of symptoms measures on internal validity, we developed new symptom variables to standardize the depression symptoms and scoring schema. This standardization was accomplished by matching the BDI and HRSD items on the basis of the criteria for a diagnosis of depression in the *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision)*,¹² and by using an objective expert panel of 5 independent mental health nursing professionals. Oversampling of women, because 1 parent study included only women, may have created a selection bias based on sex. Use of a convenience sample and the lack of information about the number of eligible patients who did not participate in the parent studies limit external validity and inferences that can be drawn from our findings. The sample consisted of a variety of cardiac patients admitted for a procedure related to CHD, a situation that might confound symptoms. However, we did not find any statistical difference in depression symptoms in our sample. These limitations notwithstanding, a significant strength of our findings is that all patients were evaluated for depression by using a structured interview, the standard criterion for the diagnosis of depression

Conclusion

Improvement in detecting depression in patients with CHD who are hospitalized has been a focus of researchers since the scientific advisory¹ was published by the American Heart Association in 2008. The overlapping of somatic, cognitive, and affective symptoms in patients with CHD creates complexity in symptom assessment and diagnosis. Because clinicians may be more focused on somatic symptoms in the context of heart disease, they may overlook cognitive symptoms of depression. Our findings suggest that clinicians caring for patients with CHD who are hospitalized should pay particular attention to the same cognitive/affective symptoms of anhedonia and blue mood that occurs in patients without CHD who are depressed. Heightened awareness of this cognitive/affective symptom cluster in hospitalized CHD patients may improve detection of depression and may facilitate further assessment, referral, and treatment.

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eLetters

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CNE Test Test ID A142302: Depressed or Not Depressed: Untangling Symptoms of Depression in Patients Hospitalized With Coronary Heart Disease

Learning objectives: 1. Describe the challenges associated with recognizing depression in patients who are hospitalized with coronary heart disease. 2. Identify the individual symptoms included in the somatic, somatic/affective, and cognitive/affective symptom clusters. 3. Discuss the key findings of this study and their associated nursing implications for improved recognition of depression in patients who are hospitalized with coronary heart disease.

1. Failure to recognize depression in hospitalized patients with coronary heart disease (CHD) is most likely due to the overlap of symptom clusters between which of the following?

- a. CHD and acute coronary syndrome (ACS)
- b. ACS and depression
- c. Depression and CHD
- d. ACS and atherosclerosis

2. Prolonged elevation of C-reactive protein levels is associated with which of the following?

- a. Cognitive/affective symptoms
- b. Somatic/affective symptoms
- c. Somatic symptoms
- d. Atherosclerosis

3. According to the results of this study, depression would be most likely in which of the following groups of patients?

- a. Those experiencing ACS as part of their hospital admission for treatment of CHD
- b. Those without ACS as part of their hospital admission for treatment of CHD
- c. Those with lower scores for fatigue and sleep disturbance
- d. Those with lower scores for guilt and suicidal symptoms

4. Which of the following is more likely to be underrecognized in cardiac patients than in otherwise healthy depressed patients?

- a. Interference with sleep
- b. Thoughts of ending one's life with some degree of intent
- c. Physical or mental weariness
- d. Slowing down of thoughts and/or movements

5. Which of the following symptoms is most predictive of mortality in cardiac patients?

- a. Loss of appetite
- b. Anhedonia
- c. Guilt
- d. Nervous irritability

6. Which of the following statements regarding this study's findings is true?

- a. Somatic/affective symptoms are more useful in predicting CHD prognosis than somatic symptoms alone.
- b. Cognitive/affective symptoms are more useful in predicting CHD prognosis than somatic/affective symptoms.
- c. Somatic/affective symptoms are more useful in depression screening than cognitive/affective symptoms.
- d. Cognitive/affective symptoms are more useful in depression screening than somatic/affective symptoms.

7. Clinicians caring for patients who are hospitalized with CHD should pay particular attention to which of the following symptoms?

- a. Physical and/or mental weariness
- b. Loss of interest in activities
- c. Interference with sleep
- d. Slowing down of thoughts and/or movements

8. Which of the following patients is most likely to be depressed when hospitalized for treatment of CHD?

- a. Married, middle-aged male with no history of depression
- b. Unmarried, middle-aged female with self-reported history of depression
- c. Young male with ACS and self-reported history of depression
- d. Elderly female with self-reported history of depression who did not experience ACS as part of her hospitalization

9. A patient with CHD and depression is most likely to have which of the following symptoms?

- a. Anhedonia, fatigue, and guilt
- b. Fatigue, sleep disturbance, and "blue mood"
- c. Anhedonia, dysphoria, and fatigue
- d. "Blue mood," sleep disturbance, and guilt

10. An analysis of study results included specific evaluation of which of the following?

- a. Association of symptom clusters with the presence or absence of depression
- b. Correlation between the duration of CHD and the development of depression
- c. Comparison of the symptoms associated with diagnosis of depression in patients with CHD and those associated with diagnosis of depression in patients without CHD
- d. Correlation between symptom clusters of depression and outcomes in patients with CHD

11. Findings from this study favor initial depression screening of patients with CHD using which of the following?

- a. Structured clinical interviews based on criterion standards for the diagnosis of depression
- b. Structured clinical interviews that include modules for detection of a history of both depression and other psychiatric disorders
- c. Instruments that focus on cognitive symptoms of depression
- d. Instruments that focus on both somatic and cognitive symptoms of depression

12. Presence of which of the following symptoms upon initial screening should alert the clinician to the need for additional assessment?

- a. Psychomotor impairment and hypochondriasis
- b. Anhedonia and dysphoria
- c. Sleep disturbance and fatigue
- d. Fatigue and psychomotor impairment

Test ID: A142302 Contact hours: 1.0; pharma 0.0 Form expires: March 1, 2017. Test Answers: Mark only one box for your answer to each question.

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Program evaluation

- | | Yes | No |
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| Objective 1 was met | <input type="checkbox"/> | <input type="checkbox"/> |
| Objective 2 was met | <input type="checkbox"/> | <input type="checkbox"/> |
| Objective 3 was met | <input type="checkbox"/> | <input type="checkbox"/> |
| Content was relevant to my nursing practice | <input type="checkbox"/> | <input type="checkbox"/> |
| My expectations were met | <input type="checkbox"/> | <input type="checkbox"/> |
| This method of CE is effective for this content | <input type="checkbox"/> | <input type="checkbox"/> |
| The level of difficulty of this test was: | | |
| <input type="checkbox"/> easy <input type="checkbox"/> medium <input type="checkbox"/> difficult | | |
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Evidence-Based Review and Discussion Points

By Ronald L. Hickman, RN, PhD, ACNP-BC

Evidence-Based Review (EBR) is the journal club feature in the *American Journal of Critical Care*. In a journal club, attendees review and critique published research articles: an important first step toward integrating evidence-based practice into patient care. General and specific questions such as those outlined in the "Discussion Points" box aid journal club participants in probing the quality of the research study, the appropriateness of the study design and methods, the validity of the conclusions, and the implications of the article for clinical practice. When critically appraising this issue's EBR article, found on pp 106-116, consider the questions and discussion points outlined in the "Discussion Points" box. Visit www.ajconline.org to discuss the article online.

Depressive symptoms in hospitalized patients with coronary heart disease (CHD) are under-recognized and associated with an increased risk for adverse cardiovascular events. In 2008, the American Heart Association and the American Psychiatric Association published a scientific advisory calling for the routine screening for depression in patients living with CHD.

In response to this national scientific priority, this secondary data analysis notes that symptom

clusters are associated with clinical depression among hospitalized CHD patients. A total of 323 hospitalized CHD patients were enrolled into 1 of 3 parent studies and screened for depressive symptomatology with the Hamilton Rating Scale for Depression or the Beck Depression Inventory.

Prior to data analysis, a panel of mental health advanced practice nurses convened to transform the 2 measures of depressive symptoms into 11 symptom variables representative of the diagnostic criteria for depression cited in the *Diagnostic and Statistical Manual of Mental Disorders-IV*.

This study confirmed that fatigue and sleep disturbance were the most prevalent symptoms among hospitalized CHD patients. Three clusters of symptoms were identified. However, CHD patients who classified as experiencing the cognitive/affective symptom cluster, which consists of symptoms of anhedonia, dysphoria, guilt, suicidal ideation, and nervous irritability, were more likely to meet the diagnostic criteria for clinical depression when compared to individuals classified into the somatic/affective or somatic symptom clusters. The results of this study underscore the need to engage in routine depression screening and that the presentation of symptoms associated with the cognitive/affective cluster should inform clinicians to refer hospitalized CHD patients for further evaluation and treatment for depression.

Investigator Spotlight

This feature briefly describes the personal journey and background story of the EBR article's lead investigators, discussing the circumstances that led them to undertake the line of inquiry represented in the research article featured in this issue.



Anthony McGuire

Anthony McGuire, RN, PhD, ACNP-BC, CCRN, is currently an assistant professor at the California State University, Long Beach, School of Nursing. He has more than 20 years of critical care and emergency nursing experience and is a fellow of the American Heart Association. He and his coauthors take a multidisciplinary approach to identifying symptom clusters associated with clinical depression in hospitalized CHD patients.

McGuire's research interest is the identification of depressive symptoms among patients with CHD.

When reflecting on his experience conducting this research, McGuire states, "A significant challenge was to get the 'buy in' from the nursing staff on the intensive care unit." He notes that nurses at the bedside are busy and adding one more thing to their plate is not always welcomed. However, he says education and positive reinforcement were helpful in getting the nursing staff to understand the importance of this work.

Despite the exploratory nature of this study, the research done by McGuire and his coauthors provides evidence that supports further investigation into the screening and management of clinical depression in hospitalized CHD patients. McGuire and his coauthors note that detection of clinical depression in this context is challenging but they encourage clinicians to increase their suspicion for clinical depression when hospitalized CHD patients show symptoms associated with the cognitive/affective cluster.

Information From the Authors

Anthony McGuire, RN, PhD, ACNP-BC, CCRN, lead author on this research article provides additional information about the study. He believes his passion for critically ill cardiac patients and his inquisitive nature were pivotal in his interest to develop a research

program centered on depression in hospitalized patients with CHD.

McGuire says, "What I am doing to increase the awareness of depression in hospitalized CHD patients can make a difference because it provides knowledge that is important about a misunderstood clinical phenomenon." Depression in hospitalized CHD patients is an important comorbid condition that is often brushed aside as an expected consequence of having an adverse cardiovascular event that simply will dissipate with time, he notes. According to McGuire, these depressive symptoms are probably not attributable to somatic symptoms associated with an adverse cardiac event as once suspected.

When asked to reflect on the significance of his research findings, McGuire found that it had meaningful and unanticipated significance for him in that, as a clinician, he developed a much deeper understanding of the experience of patients with CHD. He says, "This research experience has strengthened my practice, teaching, and ability to conduct research that will advance nursing science."

Implications for Practice

McGuire encourages clinicians to explore the routine screening of hospitalized CHD patients throughout the hospital course. He says, "I have worked with bedside nurses who demonstrate effective use of brief screening measures, like the 2-item, Patient Health Questionnaire, to assess for depression in hospitalized CHD patients prior to discharge." To inform evidence-based practice, effective screening methods should be routinely used to identify hospitalized CHD patients with clinical depression, which will help researchers and clinicians develop an evidence base of efficacious strategies to attenuate depressive symptoms and improve the global health of hospitalized CHD patients, concludes McGuire.

About the Author

Ronald L. Hickman is an assistant professor, Case Western Reserve University, and an acute care nurse practitioner at University Hospitals Case Medical Center, Cleveland, Ohio.

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Discussion Points

A. Description of the Study

- What is the association between depression and cardiovascular outcomes?
- What is the purpose of this study?

B. Literature Evaluation

- What has been cited in the literature about depression symptom clusters among patients living with CHD?
- What previous research on depression symptom clusters has been conducted among patients living with CHD?

C. Sample

- What patients were eligible to participate in this study?
- How did the investigators screen for eligible hospitalized CHD patients?

D. Methods and Design

- How did the investigators assess for depressive symptoms?
- What was the purpose of the panel of advanced practice mental health nurses?

E. Results

- What are the most and least common depressive symptoms found in this study?
- What symptom cluster is associated with clinical depression among hospitalized CHD patients?

F. Clinical Significance

- What are the implications of this study for clinical practice?
- What strategies can be used to identify symptoms and improve treatment for depression.