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Comparing Patient and Nurse Specialist Reports of Causative Factors of Depression Related to Heart Failure

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Abstract

PURPOSE—The purpose of this study was to compare participants' and a psychiatric nurse specialist's reports on factors precipitating depression and to validate a depression screening instrument.

DESIGN AND METHODS—Participants were screened for and asked to self-report causative factors of their depression. Participants with moderately severe and severe depressive symptoms received a psychiatric nurse specialist assessment.

FINDINGS—Participants self-reported several causative factors of depression. The psychiatric nurse specialist discovered these plus additional factors. The screening instrument was found to be reliable and valid for the measurement of depressive symptoms.

PRACTICE IMPLICATIONS—Participant self-report identifies many causative factors of depression. The psychiatric nurse specialist identifies additional factors, allowing individualized diagnoses and treatments.

Search terms

Causative factor; content analysis; depression; psychiatric nurse specialist assessment; self-report

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The United States currently has 700,000 new heart failure (HF) diagnoses each year (Lloyd-Jones et al., 2009). More than 45% of patients with HF experience repeated episodes of serious depression (Artinian, 2003; Chung et al., 2008; Guck, Elsasser, Kavan, & Barone, 2003), have a 4-fold increase in negative HF outcomes compared with those with no depression (Rutledge, Reis, Linke, Greenberg, & Mills, 2006), and often have higher health costs (Welch, Czerwinski, Ghimire, & Bertsimas, 2009) and reduced quality of life (Lichtman et al., 2008).

Depressive symptoms double the risk for mortality and other cardiac events in patients with HF, often exacerbating their HF symptoms (Carney, Freedland,& Jaffe,2009). In longitudinal studies, depressed HF patients were found to (a) be less engaged in essential self-care behaviors, such as maintaining sodium and fluid restrictions and medication regimens (Pandya, Metz, & Patten, 2005); (b) have greater loss of physical function; and (c) die sooner (Jiang et al., 2001; Luttik, Jaarsma, Moser, Sanderman, & van Veldhuisen, 2005). Notably, depression is a strong predictor of repeated HF hospital admissions (Jiang et al., 2001), yet fewer than 25% of HF patients are screened for depression, and even fewer are treated (Heritage, Robinson, Elliott, Beckett, & Wilkes, 2007).

Both HF and depression can be characterized by fatigue, loss of energy, poor appetite, sleep disturbances, psychomotor retardation, and concentration deficits. Patients experiencing HF are often not screened for depression because of this overlap of depressive and HF symptoms (Holzapfel et al., 2008). All HF patients should be screened for depressive symptoms because of the negative associations between depressive symptoms and mortality, comorbidities, and poor HF self-management. Although the recent national guidelines from the American Heart Association Prevention Committee, led by nurse practitioners, introduced new recommendations that all patients with heart disease be given a questionnaire to screen for depressive symptoms (Lichtman et al., 2008), many patients are still not screened.

Even less common than screening for and treating depressive symptoms is the identification of the causative factors of depressive symptoms from patients' points of view. The identification of depression and its causative factors is imperative to increase the likelihood of HF patients receiving the proper treatment for depression, considering the untoward impact of depression among these patients.

The purpose of this data collection was to screen HF patients for depression, to elicit the causative factors participants self-reported, and to compare those factors identified by a psychiatric nurse specialist during a one-on-one assessment session. Comparing factors identified by participant self-report with those uncovered by a psychiatric nurse specialist will help determine if self-report and one-on-one assessment sessions capture similar details.

Further, this project allowed for the completion of validity calculations to determine the adequacy of a relatively new clinical depression-screening questionnaire compared with a depression-screening questionnaire that has been used for decades as the gold standard in many research studies.

Methods

Participants were invited to be a part of this study and consented under Institutional Review Board approval. All consented participants completed depression-screening questionnaires as well as an open-ended self-report question asking them to identify what they felt contributed to their depressive symptoms. Data from the screening questionnaires were used for validity calculations as well as to detect participants who needed a referral to a psychiatric nurse specialist.

Sample

Participants included in the study (n = 90) were patients with a physician-confirmed, recent, acute episode of HF requiring hospitalization. Participants had to have the ability to read and speak English and be at least 18 years of age. Patients with HF were excluded if they had any comorbidity with survival expectancy of less than 12 months, such as metastasized cancer. Participants were also excluded if they had disabilities that would interfere with reading and completing questionnaires.

Participants averaged 61.64 years of age (range 24–89, SD = 13.45), with one subject older than 89 years of age. These subjects were primarily male (61.1%), Caucasian (49.4%), married (34.8%), had completed some high school (30.3%), were retired (34.8%), and were Medicare recipients (58.9%). Many participants reported living in a two-person household (40.4%). A small percentage (11.2%) reported having dependent children younger than 18 years of age living at home (See Table 1).

Instruments

Participant Self-Reported Causative Factors of Depressive Symptoms—All participants were asked, in an open-ended self-report question, to identify factors they felt contributed to their feelings of depression. Specifically, they were asked to think back over the past 4 weeks and list the things that made them feel “unhappy, sad, gloomy, depressed, blue, hopeless or discouraged.” This question has been used in other studies and confirmed as clearly understood by subjects (Smith, Holcroft, Rebeck, Thomspson, & Werkowitch, 2000; Smith, Leenerts, & Gajewski, 2003).

Center for Epidemiologic Studies Depression Scale—The Center for Epidemiologic Studies Depression Scale (CES-D) is a commonly used questionnaire that has been used as the gold standard to screen for depressive symptoms in many research studies since the 1970s (Radloff, 1977). The version used in this study was the reliable and valid 10-item self-report scale derived from symptoms associated with depression that had been used in previously validated scales (Andresen, Malmgren, Carter, & Patrick, 1994).

All study participants completed the CES-D, which asked them to identify how often (ranging from *less than 1 day* to *7 days a week*) they have felt a certain way during the previous 4 weeks. Specifically, they were asked to identify how frequently they (a) felt depressed, (b) felt everything they did was an effort, (c) felt their sleep was restless, (d) felt happy, (e) felt lonely, (f) felt that people were unfriendly, (g) enjoyed life, (h) felt sad, (i) felt that people dislike them, and (j) felt they could not get “going.” A total CES-D score was calculated from the items on the form using the calculations in the rating scale’s guidelines.

The total score was used to rate the severity of participants’ depressive symptoms as *none* (0–7), *mild* (8–10), *moderate* (11–19), *moderately severe* (20–25), or *severe* (26–30) per national norms (Andresen et al.,1994; Radloff,1977). Participants who had a CES-D score of 20 or greater, indicating their depressive symptoms were *moderately severe* or *severe*, were referred to a psychiatric nurse specialist for assessment. Participants answering that they had “felt depressed,” “felt lonely,” or “felt sad” 5–7 days of the week were also referred to a psychiatric nurse specialist for assessment, regardless of their overall CES-D score.

Patient Health Questionnaire-9—The Patient Health Questionnaire-9 (PHQ-9) has recently been introduced into clinical settings to aid primary care clinicians in screening for depressive symptoms (McManus, Pipkin, & Whooley, 2005). It is a short, easy-to-administer form that derives its nine items directly from the *Diagnostic and Statistical*

Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria for diagnosing major depressive disorder. The PHQ-9 has been validated in clinical populations, with the help of many nurses administering the questionnaires for statistical analysis (Kroenke & Spitzer, 2002; McManus et al., 2005), yet there have been few studies done to show the effectiveness of using the PHQ-9 to identify depressive symptoms in research populations.

Study participants in the experimental group were asked to complete the PHQ-9 in addition to the CES-D. Similar to the CES-D, the PHQ-9 asks participants to identify how often (ranging from *not at all* to *nearly every day*) they felt a certain way during the past week. Specifically, they were asked to identify how often they (a) had little interest or pleasure in doing things; (b) felt down, depressed, or hopeless; (c) had trouble falling asleep or slept too much; (d) felt tired or had little energy; (e) had a poor appetite or overate; (f) felt bad about themselves, or that they were a failure and had let themselves or their families down; (g) had trouble concentrating on things such as reading the newspaper or watching television; (h) found themselves moving or speaking so slowly that other people could have noticed, or being so fidgety or restless that they have found themselves moving around more; and (i) had thoughts that they would be better off dead or of hurting themselves.

A total PHQ-9 score was calculated from the nine items using the instrument's "Instructions for Use." The total score was used to rate the severity of participants' depressive symptoms as *none* (0–4), *mild* (5–9), *moderate* (10–14), *moderately severe* (15–19) or *severe* (20–27; Kroenke & Spitzer, 2002). Participants who had a score of 15 or greater were referred to a psychiatric nurse specialist for assessment. Participants answering that they had thoughts they would be better off dead or of hurting themselves in some way were also referred to a psychiatric nurse specialist for assessment regardless of their overall scores.

Assessment by the Psychiatric Nurse Specialist—Participants identified as having *moderately severe* or *severe* depressive symptoms according to their CES-D (≥20) or PHQ-9 (≥15) score, or who answered questionnaire items stating that they felt depressed, lonely, or sad 5–7 days a week, or that they had thoughts of hurting themselves, or that they would be better off dead, were referred for a one-on-one assessment session with the psychiatric nurse specialist.

The psychiatric nurse specialist in this study has been a practicing psychiatric consultation liaison nurse for medical and surgical patients in an inpatient hospital setting for more than 23 years. In this role, this nurse performs daily interviews and assesses patients in all medical and surgical specialties, including cardiology, for major depressive disorder as well as for other concerns such as denial, grief, and anger.

In the scope of this study, the psychiatric nurse specialist spoke with each patient about his or her answers on the screening questionnaires, and elicited information about his or her mood and emotional state. The nurse also assessed each participant according to the DSM-IV criteria for major depressive disorder. Special attention was given to screening questions with high negative responses. Patients' verbal and emotional responses were compared with each DSM-IV criterion, allowing the nurse to distinguish between depressive symptomology and emotional adjustment to chronic illness or grief from the patients' loss of function and normal family or work roles. The nurse recorded assessment notes summarizing the interview and identifying the causative factor(s) for each participant's depressive symptoms as well as the recommended follow-up care.

Data Analysis

Content Analysis of Participant Self-Report and Psychiatric Nurse Specialist Assessments—Content analysis research methods were used to classify textual data from

the participants' written self-reported responses as well as the nurse's written assessment reports. Each participant's responses were coded into mutually exclusive categories based on previously published research that had used the same open-ended self-report question (Smith et al., 2000, 2003). Data saturation was reached when all factors in participants' written responses could be coded into one of the mutually exclusive categories. SPSS (version 16, SPSS Inc., Chicago, IL, USA) statistical software was used to calculate frequencies of each coded written response within each category.

Causative factors found in the written notes from the one-on-one psychiatric nurse specialist's assessment reports were coded into mutually exclusive categories, tabulated by hand, and then checked for agreement in coding by a member of the research team. There was 100% agreement on placing written data into categories. Data saturation was also reached when these responses could be coded into one of the mutually exclusive categories.

Measurement validity calculations—The collection of both the PHQ-9 and CES-D among participants at the same time frame in this study (6 months after baseline) provided the opportunity to examine the measurement validity of the PHQ-9 in a research population. In order to assure the appropriateness of the use of the PHQ-9 for diagnosing depressive symptoms in a research sample, six different statistical comparisons were conducted. Specifically, SPSS (version 16) statistical software was used to calculate the internal consistency (Cronbach's alpha, which measures the extent to which all items in the scale measure the same concept), as well as sensitivity, specificity, positive predictive value, negative predictive value, and Spearman's rank correlation (all measures of criterion validity that can help to determine the adequacy of a new measure using an established measure as the gold standard). Spearman's rank correlation was used to measure concurrent validity, a form of criterion validity that measures the degree to which a test correlates with other measures of the same construct. Specifically, it was completed to determine how strongly the severity of depressive symptoms identified by the PHQ-9 correlated with the severity identified by the CES-D.

Findings

Measurement Validity of the PHQ-9

Thirty-five participants completed the CES-D and PHQ-9 simultaneously. When the statistical comparisons were completed, all results demonstrated that the PHQ-9 is reliable and valid for identifying depressive symptoms in this research population. Specifically, the PHQ-9 had a Cronbach's alpha of 0.896, indicating strong internal consistency, sensitivity of 70.0%, specificity of 86.7%, positive predictive value of 87.5%, and negative predictive value of 68.4%.

These percentages indicate that a participant identified as having depressive symptoms by the CES-D has an acceptable probability (70.0%) of also being identified as such by the PHQ-9, and a person identified as having no depressive symptoms by the CES-D has an 86.7% probability of being identified as such by the PHQ-9. The positive predictive value of 87.4% reveals that a participant identified as having depressive symptoms by the PHQ-9 has an 87.4% probability of having depressive symptoms according to the CES-D (gold standard). A participant identified as having no depressive symptoms by the PHQ-9 has an acceptable 68.4% probability of having no depressive symptoms according to the CES-D (gold standard). All of these values fall within the acceptable range of values used as criteria for validating instruments (Cuijpers, Smit, & Willemse, 2005).

The concurrent validity of the PHQ-9 was measured using Spearman's rank correlation. The correlation between the severity of depressive symptoms identified by the PHQ-9 correlated

strongly, in a positive direction ($r = .79$, $p = .01$), with the severity of depressive symptoms identified by the gold standard, CES-D.

Causative Factors: Participant Self-Reported Data

Written data from all 90 participants revealed a broad spectrum of self-reported causative factors of depressive symptoms. These many factors were categorized into five common themes: (a) poor patient health status associated with pain, lack of energy or fatigue, and daily complex illness care (i.e., medication adherence, smoking cessation, sodium restrictions, and lack of public understanding of HF); (b) loss of independence associated with no longer being able to drive, eat at restaurants, lift heavy objects, attend activities, or perform simple tasks around the house; (c) life stressors associated with communication problems with family, friends, or healthcare providers, being worried about HF treatments or family members, retirement, or major life changes; (d) financial concerns associated with insurance coverage or inability to pay bills, or not having money left to do things they want; and (e) isolation from friends and family because of geographical distance or missing out on activities because of multiple healthcare appointments (see Table 2).

Causative Factors: Psychiatric Nurse Specialist Assessment Data

Of the 90 participants, 64% had screening scores indicating that they had depressive symptoms. Approximately 42% ($n = 38$) were referred to a psychiatric nurse specialist. Thirty-seven were referred because they were identified as having *moderately severe* or *severe* depressive symptoms according to their CES-D or PHQ-9 scores. One participant, who did not have *moderately severe* or *severe* depressive symptoms according to either overall screening score, was referred to the psychiatric nurse specialist because of answering that several days of the week he or she had thoughts of hurting himself or herself or that he or she would be better off dead.

The psychiatric nurse specialist identified causative factors of depression congruent with those revealed by the participant self-reports but was also able to identify additional causative factors falling into four themes. These themes included (a) situational grief related to HF diagnosis, management and self-care demands, as well as grief caused by the death of friends or family members; (b) anger and regret associated with having a chronic illness, specifically feeling angry about their diagnosis, regretting things they wish they had done (or done differently) in the past, and wishing they had spent more time with their children when they were healthy; (c) psychiatric problems associated with a new diagnosis or fearing their psychiatric problems would exacerbate their chronic illness; and (d) lack of spousal and family support associated with feeling as though they did not have the family support they desired or being unable to express their concerns to their spouses or family members. Lack of spousal and family support differed from the category of isolation reported by participants, which was a result of tangible separation from family and friends rather than lack of emotional support (see Table 3).

The psychiatric nurse specialist was also able to rule out depression in a few instances ($n = 4$). Four participants who were identified as having *moderately severe* or *severe* depressive symptoms according to their screening scores were found to be experiencing solely grief, rather than depression caused by grief.

Discussion

Similar to results from other studies, 64% of participants had screening scores that indicated they had depressive symptoms, with 42% in the *moderately severe* to *severe* range (Artinian, 2003; Chung et al., 2008; Guck et al., 2003). The findings for the instrument measurement

validity statistics (i.e., Cronbach's alpha, sensitivity, specificity, positive predictive value, negative predictive value, and Spearman's rank correlation) indicated that the PHQ-9 has good internal consistency and is a valid tool for the diagnosis of the prevalence and severity of depressive symptoms in a research setting compared with the research gold standard, the CES-D. Other research studies reported similar findings in primary care settings (Huang, Chung, Kroenke, Delucchi, & Spitzer, 2006; Kroenke & Spitzer, 2002; McManus et al., 2005).

Notably, when the participant self-report on these instruments was compared with the one-on-one assessment data, the psychiatric nurse specialist found additional causative factors of depressive symptoms of which participants may not have been aware, associated with their depressive symptoms, or which they had not been comfortable in self-reporting. Our recommended innovation is to use the clinically validated and reliable PHQ-9 depression screening instrument to prompt referrals to a psychiatric nurse specialist or other mental health professional, as the nurse's one-on-one assessment uncovered additional unique causative factors that are necessary for providing appropriate treatment.

The psychiatric nurse specialist was able to distinguish grief responses from depression. This distinction is important because the treatment of each is different. Using only the screening score without an assessment may have led to prescribing medication, which is not always the most appropriate treatment because of the cost and adverse drug reactions among many HF patients (Caples et al., 2007; Ray, Chung, Murray, Hall, & Stein, 2009; Sahlin et al., 2008; Taylor et al., 2005). The psychiatric nurse specialist was able to provide therapeutic intervention recommendations for participants to help manage their anger and regret, and to find strategies and resources to assist them in coping with feelings of grief.

These recommendations included referring patients to appropriate forms of treatment, such as talking with a therapist about grief, attending substance abuse counseling, talking with family members, going to church and/or performing mood-elevating activities such as working on hobbies, listening to music, joining a club, reading a book, etc. Many patients were encouraged to continue communication with their primary care providers and/or mental health specialists.

In many cases, the patient was already taking a prescription medication for depression and/or anxiety. When the dosage of the prescribed psychotropic medication was thought to be inadequate or inappropriate, patients were advised to discuss this with their primary care provider or prescribing physician.

One-on-one assessment sessions can be an important part of patients' overall healthcare plan to help ensure that they receive appropriate treatment, as nondepressive symptoms, such as situational grief, can often disguise themselves as depression. With the help of the psychiatric nurse specialist, patients were able to identify normal grief and identify causative factors often centered around increasing dependency on others and loss of roles once played in their families or social lives.

One-on-one assessment sessions with mental health professionals are beneficial but, unfortunately, not always offered and can be cost-prohibitive if not covered by insurance plans. Therefore, asking patients to identify (or self-report) causative factors of depressive symptoms may be the first approach taken. Although the participant self-report data contain limited information, practitioners can begin to develop an individualized treatment plan during office visits.

Implications for Nursing Practice

Screening patients with chronic illnesses such as HF for depressive symptoms with reliable and valid questionnaires is imperative as depression often interferes with HF self-management and is associated with poor outcomes. In order to receive appropriate and individualized treatment, causative factors of depression and its symptoms must be identified by patients and/or assessed by a psychiatric nurse specialist or other mental health professional.

Those with *moderately severe* to *severe* depressive symptoms should be referred for an assessment by a psychiatric nurse specialist or other mental health professional, as participant self-report does not always capture the comprehensive causative factors of depressive symptoms. These assessments are beneficial in identifying causative factors of depression and distinguishing between clinical and situational depression and grief. Assessments result in appropriate recommendations and treatment plans based on the specific cause for each individual patient.

The identification of additional causative factors of depression by the psychiatric nurse specialist demonstrates the benefit of collaborative care. This includes active, sustained follow-up by a nurse liaison or other allied healthcare manager who adheres to an evidence-based treatment protocol. This is a critical distinction from earlier depression treatment trials in which patients with cardiac disease received little to no follow-up from noncardiac care providers. Collaborative care also includes ongoing communication of treatment recommendations with patients' primary care physicians and/or a mental health specialist when indicated (Rollman et al., 2009).

Further studies are needed to determine if causative factors of depression among HF patients are similar to those in populations of patients with other chronic illnesses. If the causative factors can be identified and generalized, then practical, individualized, cost-effective interventions developed for HF patients with depression can be applied to other patient populations and transitioned into clinical practice and patient self-care.

Conclusion

Cardiac patients should be screened for depressive symptoms with the PHQ-9 based on recommendations by the American Heart Association Prevention Committee. Patients found to have *moderately severe* to *severe* depressive symptoms according to screening instruments should be referred to a psychiatric nurse specialist or other mental health professional for further assessment and proper treatment to avoid exacerbation of their depressive symptoms and chronic illnesses.

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References

Andresen EM, Malmgren JA, Carter WB, Patrick DL. Screening for depression in well older adults: Evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). American Journal of Preventive Medicine. 1994; 10(2):77–84. [PubMed: 8037935]

Artinian NT. The psychosocial aspects of heart failure. American Journal of Nursing. 2003; 103(12): 32–42. [PubMed: 14702564]

Caples SM, Rosen CL, Shen WK, Gami AS, Cotts W, Adams M, Iber C. The scoring of cardiac events during sleep. Journal of Clinical Sleep Medicine. 2007; 3(2):147–154. [PubMed: 17557424]

Carney RM, Freedland KE, Jaffe AS. Depression screening in patients with heart disease. Journal of the American Medical Association. 2009; 301(13):1337.10.1001/jama.2009.408 [PubMed: 19336706]

Chung ES, Leon AR, Tavazzi L, Sun JP, Nihoyannopoulos P, Merlino J, Murillo J. Results of the Predictors of Response to CRT (PROSPECT) Trial. Circulation. 2008; 117:2608–2616. [PubMed: 18458170]

Cuijpers P, Smit F, Willemse G. Predicting the onset of major depression in subjects with subthreshold depression in primary care: A prospective study. Acta Psychiatrica Scandinavica. 2005; 111(2): 133–138.10.1111/j.1600-0447.2004.00416.x [PubMed: 15667432]

Guck TP, Elsasser GN, Kavan MG, Barone EJ. Depression and congestive heart failure. Congestive Heart Failure. 2003; 9(3):163–169.10.1111/j.1527-5299.2003.01356.x [PubMed: 12826775]

Heritage J, Robinson JD, Elliott MN, Beckett M, Wilkes M. Reducing patients' unmet concerns in primary care: The difference one word can make. Journal of General Internal Medicine. 2007; 22(10):1429–1433.10.1007/s11606-007-0279-0 [PubMed: 17674111]

Holzapfel N, Müller-Tasch T, Wild B, Jünger J, Zugck C, Remppis A, Lowe B. Depression profile in patients with and without chronic heart failure. Journal of Affective Disorders. 2008; 105(1–3):53–62.10.1016/j.jad.2007.04.009 [PubMed: 17512058]

Huang F, Chung H, Kroenke K, Delucchi K, Spitzer R. Using the Patient Health Questionnaire-9 to measure depression among racially and ethnically diverse primary care patients. Journal of General Internal Medicine. 2006; 21(6):547–552.10.1111/j.1525-1497.2006.00409.x [PubMed: 16808734]

Jiang W, Alexander J, Christopher E, Kuchibhatla M, Gaulden LH, Cuffe MS, O'Connor CH. Relationship of depression to increased risk of mortality and rehospitalization in patients with congestive heart failure. Archives of Internal Medicine. 2001; 161(15):1849–1856.10.1001/archinte.161.15.1849 [PubMed: 11493126]

Kroenke K, Spitzer RL. The PHQ-9: A new depression diagnostic and severity measure. Psychiatric Annals. 2002; 32(9):1–7.10.1046/j.1525-1497.2001.016009606.x

Lichtman JH, Bigger JT Jr, Blumenthal JA, Frasure-Smith N, Kaufmann PG, Lesperance F, Froelicher ES. Depression and coronary heart disease: Recommendations for screening, referral, and treatment: A science advisory from the American Heart Association Prevention Committee of the Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Epidemiology and Prevention, and Interdisciplinary Council on Quality of Care and Outcomes Research: Endorsed by the American Psychiatric Association. Circulation. 2008; 118(17):1768–1775.10.1161/CIRCULATIONAHA.108.190769 [PubMed: 18824640]

Lloyd-Jones D, Adams R, Carnethon M, De Simone G, Ferguson TB, Flegal K, Hong Y. Heart disease and stroke statistics—2009 update: A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Circulation. 2009; 119(3):e21–181.10.1161/CIRCULATIONAHA.108.191261 [PubMed: 19075105]

Luttik ML, Jaarsma T, Moser D, Sanderman R, van Veldhuisen DJ. The importance and impact of social support on outcomes in patients with heart failure: An overview of the literature. Journal of Cardiovascular Nursing. 2005; 20(3):162–169. [PubMed: 15870586]

McManus D, Pipkin SS, Whooley MA. Screening for depression in patients with coronary heart disease (data from the Heart and Soul Study). American Journal of Cardiology. 2005; 96(8):1076–1081.10.1016/j.amjcard.2005.06.037 [PubMed: 16214441]

Pandya R, Metz L, Patten SB. Predictive value of the CES-D in detecting depression among candidates for disease-modifying multiple sclerosis treatment. Psychosomatics. 2005; 46(2):131–134.10.1176/appi.psy.46.2.131 [PubMed: 15774951]

Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. Applied Psychological Measurement. 1977; 1(3):385–401.10.1177/014662167700100306

Ray WA, Chung CP, Murray KT, Hall K, Stein CM. Atypical antipsychotic drugs and the risk of sudden cardiac death. New England Journal of Medicine. 2009; 360(3):225–235.10.1056/NEJMoa0806994 [PubMed: 19144938]

Rollman BL, Belnap BH, LeMenager MS, Mazumdar S, Schulberg HC, Reynolds CF 3rd. The Bypassing the Blues treatment protocol: Stepped collaborative care for treating post-CABG depression. Psychosomatic Medicine. 2009; 71(2):217–230.10.1097/PSY.0b013e3181970c1c [PubMed: 19188529]

Rutledge T, Reis VA, Linke SE, Greenberg BH, Mills PJ. Depression in heart failure: A meta-analytic review of prevalence, intervention effects, and associations with clinical outcomes. Journal of the American College of Cardiology. 2006; 48(8):1527–1537.10.1016/j.jacc.2006.06.055 [PubMed: 17045884]

Sahlin C, Sandberg O, Gustafson Y, Bucht G, Carlberg B, Stenlund H, Franklin KA. Obstructive sleep apnea is a risk factor for death in patients with stroke: A 10-year follow-up. Archives of Internal Medicine. 2008; 168(3):297–301.10.1001/archinternmed.2007.70 [PubMed: 18268171]

Smith CE, Holcroft C, Rebeck SL, Thomspson NC, Werkowitch M. Journal writing as a complementary therapy for reactive depression: A rehabilitation teaching program. Rehabilitation Nursing. 2000; 25(5):170–176. [PubMed: 11998082]

Smith CE, Leenerts MH, Gajewski BJ. A systematically tested intervention for managing reactive depression. Nursing Research. 2003; 52(6):401–409.10.1097/00006199-200311000-00008 [PubMed: 14639087]

Taylor CB, Youngblood ME, Catellier D, Veith RC, Carney RM, Burg MM, Jaffe AS. Effects of antidepressant medication on morbidity and mortality in depressed patients after myocardial infarction. Archives of General Psychiatry. 2005; 62(7):792–798.10.1001/archpsyc.62.7.792 [PubMed: 15997021]

Welch CA, Czerwinski D, Ghimire B, Bertsimas D. Depression and costs of health care. Psychosomatics. 2009; 50(4):392–401.10.1176/appi.psy.50.4.392 [PubMed: 19687180]

Table 1

Sample Characteristics for All Study Participants (n = 90)

Characteristic	Percent
Age (years)	
20–45	10.0
46–55	21.1
56–65	33.3
66–75	20
>75	15.6
Male	61.1
Ethnicity	
Caucasian	49.4
African American	47.2
More than one background	3.4
Marital status	
Married	34.8
Widowed	16.9
Divorced	28.1
Separated	6.7
Never married	13.5
Number living in household	
Lives alone	33.7
2	40.4
3	14.6
4	5.6
>4	2.2
Education	
≤8th grade	3.4
Some high school	16.9
Completed high school	30.3
Vocational/community college	10.1
Some college	25.8
Completed college, more advanced education	13.5
Employment status	
Employed	15.7
Retired	34.8
Disabled	25.8
Retired and disabled	11.2
Health insurance	
Private/Employer purchased	15.6
Private/Direct purchased	17.8
Medicare	58.9

Characteristic	Percent
Medicaid	23.3
Military	13.3
Other	11.1

Note: 3.5% of participants did not report the number living in household; 12.5% did not report an employment status; 45.6% reported more than one form of health insurance.

Table 2

Participant Self-Reported Causative Factors of Depression

Factor	Frequency
Patient health status	45
Loss of independence or function/aging	18
Life stressors (not related to finances)	18
Financial/Insurance concerns	12
Isolation from family and friends	5

Note: Of the 90 participants, several reported no known causative factors of depression and several reported more than one.

Factors from participants' self-report about depression ($n = 90$).

Table 3

Additional Causative Factors Uncovered by Psychiatric Nurse Assessment of Participants

Factor	Frequency
Situational grief	24
Anger/Regret	10
Psychiatric diagnosis	5
Lack of spousal/family support	4

Note: Of the 38 participants, several reported more than 1 causative factor of depression.

Factors from the psychiatric nurse assessment of depression ($n = 38$). The psychiatric nurse assessment report also revealed factors congruent with all factors found in Table 2.