Depression and Coping in Heart Failure Patients
A Review of the Literature

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Purpose: The purpose of this article is to critically evaluate the evidence related to depression and coping in heart failure patients and determine if certain types of coping are more common in heart failure patients with depression. Methods: A computer search of the literature from January 1996 through October 2008 was conducted. PubMed was searched using the following key search terms: congestive heart failure, heart failure, coping, and depression. Three independent reviewers met to discuss the studies, interpret findings, compare studies, and discuss recommendations. Results: Coping strategies were found to be associated with depression in patients with heart failure. Adaptive coping such as active coping, acceptance, and planning tended to be used by more patients and were associated with less depression. Those who used more maladaptive methods of coping such as denial and disengagement had higher levels of depression. Conclusions: Further longitudinal research on depression and coping strategies and best treatment options for coping and depression in patients with heart failure are needed.

KEY WORDS: coping, depression, heart failure

Heart failure remains a major healthcare problem with an extensive socioeconomic burden. Heart failure is responsible for more than 1 million hospital admissions a year in the United States and places strain on an already stressed healthcare system. Patients with diabetes, asthma, and cancer have been shown to have an increased incidence of depression when compared with the general population. Patients with heart failure have also demonstrated a high incidence of depression. Coping with the ever-changing and often stressful symptoms of heart failure, a stringent medical regimen, and diet restrictions can be challenging for many patients.

Heart Failure

Currently, more than 5 million people in the United States have heart failure, and about 550,000 new cases are diagnosed each year. The incidence of heart failure approaches 10 per 1,000 for those older than 65 years. Heart failure is the underlying reason for 12 million to 15 million office visits and 6.5 million hospital days each year. Hospital discharges due to heart failure rose from 400,000 in 1979 to more than 1 million in 2005, and approximately 284,000 individuals in the United States died in 2004 due to heart failure. The estimated direct and indirect medical costs for management of heart failure in 2008 is $34.8 billion, and this high expense is expected to increase 75% over the next 40 years as baby boomers continue to age.

Symptoms of heart failure often include shortness of breath, fluid retention, and fatigue. These symptoms are often progressive, and functional class tends to deteriorate over time. Patients with heart failure often find that normal activities of daily living can become challenging and cause increased stress and decreased quality of life. For patients, decreased quality of life is due not only to the physical limitations associated with their symptoms but also to the fact that symptoms can be unpredictable and may not always correlate with medication, diet, or ventricular function changes.

Classification of heart failure can be assigned in terms of the development and prognosis of heart failure by considering 4 stages of the disease. These stages were developed by the American Heart Association (AHA) in 2005 and include those who are at risk of developing heart failure along with those who currently have the disease: stage A, at risk of heart
failure but no structural heart disease; stage B, structural heart disease but no symptoms; stage C, structural heart disease with current or prior symptoms; and stage D, refractory heart failure requiring specialized interventions (Figure 1). The AHA classification system was established for guiding therapy to help prevent the development or progression of the disease. Heart failure has been more frequently classified according to symptoms using the New York Heart Association (NYHA) system: class I, asymptomatic; class II, slight limitation of physical activity but no symptoms at rest; class III, marked limitation of physical activity but no symptoms at rest; and class IV, unable to carry out physical activity without discomfort and symptoms present at rest (Figure 1). The NYHA classification system allows providers to gauge functional status and severity of clinical disease.

**Depression in Heart Failure**

Prevalence rates of depression in heart failure patients have been found to be highly variable across studies. In a meta-analysis by Rutledge and colleagues of 27 studies investigating the prevalence of depression in heart failure participants, the overall prevalence rate was 21.5%, with an aggregated prevalence of 26.1% for men and 32.7% for women.

FIGURE 1. Heart failure classification. Adapted from Hunt and McBride and White.
Other studies have found depression rates in heart failure patients to be as low as 9% \textsuperscript{13} or to be as high as 60%, \textsuperscript{11} and the range was as wide as 13% to 75.5%. \textsuperscript{12} In addition, the prevalence of depression was found to increase as heart failure according to NYHA classification increased. \textsuperscript{5}

Depression in the heart failure population is not only common but also has been shown to be associated with poor outcomes. \textsuperscript{5} Morgan et al.\textsuperscript{14} found that heart failure patients with depression had more difficulty taking medications. Heart failure patients with depression also have been shown to have more symptoms of heart failure and a decreased quality of life. \textsuperscript{15} Carels\textsuperscript{16} found that increased depression in the heart failure population had a greater impact on quality of life than did functional impairment or severity of cardiac dysfunction. Also, depression in heart failure has been found to be an independent predictor of mortality. \textsuperscript{17} Finally, in a meta-analysis of 15 studies that found a relationship between depression and clinical outcomes in heart failure patients, there was a substantially worse prognosis across multiple outcomes for heart failure patients who had more severe depression. \textsuperscript{5} Therefore, as heart failure rates increase and the incidence of depression in these patients continues to negatively affect quality of life, increased emphasis on optimal management of depression in the patient with heart failure is needed.

Few investigations have examined the effects of interventions on depression in the heart failure population, and fewer still have demonstrated a decrease in depression. \textsuperscript{5} More recently, treatment of depression in heart failure with antidepressant medications such as paroxetine, a selective serotonin reuptake inhibitor, has shown to decrease depression. \textsuperscript{18} However, past research has concluded that treatment of depression is most effective with a combination of medication and therapy. \textsuperscript{19} Unfortunately, there are limited studies that have explored the effectiveness of nonpharmacological treatments of depression in the heart failure population. \textsuperscript{20}

### Coping

Coping may play a role in the management of depression in heart failure patients. Coping has been defined as cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as stressful to that person. The Process Theory of Coping by Lazarus and Folkman\textsuperscript{21} describes coping as a process that is likely to change over time. Stressful events are the result of an interaction between the individual and the environment, and stress is mediated by the person’s appraisal of the situation and his/her perceived resources available to deal with the stress. When individuals encounter a stressor, they evaluate the potential threat (primary appraisal) and also their ability to manage the situation and their emotions (secondary appraisal). Individuals cope with stressful situations using both emotion-focused and problem-focused strategies, and coping efforts result in immediate and long-term outcomes such as adherence to treatment plans, physiological changes, or psychological well-being. \textsuperscript{21}

Emotion-focused coping occurs when an individual perceives a demand or stress to be impossible to change and tries to alter the way he/she thinks or feels about the situation. \textsuperscript{21} Examples are avoidance, acceptance, denial, seeking social support, and venting of feelings. \textsuperscript{22} Alternatively, problem-focused coping occurs when an individual interprets a situation or stressor as modifiable. \textsuperscript{21} Examples include active coping, problem solving, planning, and information seeking. \textsuperscript{22} Many different methods of coping with a situation are possible and, in general, can be considered either adaptive or maladaptive in nature.

A review of 35 studies examining interventions aimed at developing coping skills to improve quality of life across seven different chronic illnesses concluded that improving coping skills improved outcomes and should be considered more often in developing interventions for the chronically ill patient. \textsuperscript{23} Determining the coping skills at which to direct interventions is an important factor and one that was lacking in many previous investigations. \textsuperscript{23}

To date, a paucity of research has been conducted using the concept of coping with depression in heart failure patients. \textsuperscript{16,24–28} Examining the type of coping skills used by heart failure patients with depression may provide insight into future management strategies and development of interventions that improve outcomes in this population. Therefore, the purpose of this article is to critically evaluate the evidence related to depression and coping in heart failure patients and determine if certain types of coping are more common in heart failure patients with depression.

### Methods

The search strategy developed by Glenny et al.\textsuperscript{29} was used to guide this review. Research focusing on heart failure, depression, and coping was examined. The English-language database PubMed was searched using the following key search terms: heart failure, congestive heart failure, depression, and coping. The focus was on published literature from January 1996 to October 2008. The search included those dates because there were only a limited number of manuscripts to review, and the majority was published after 2002. No attempt was made to search for unpublished
manuscripts. The search yielded 53 manuscripts for possible inclusion. An additional search of relevant journals (Journal of Cardiovascular Nursing, Quality of Life Research, American Heart Journal, Health and Psychology, Journal of Cardiac Failure, Journal of the American Heart Association) was conducted to assure that no manuscripts were missed. Manuscripts were retrieved and reviewed for inclusion using the following criteria: (a) the study investigated both depression and coping in heart failure patients; (b) the study was either a randomized clinical trial, a cross-sectional study design, or a longitudinal study design; (c) the main outcomes had to include measurement of both depression and coping in heart failure patients; (d) the study was published between January 1, 1996, and October 1, 2008; and the (e) study was published in English. Exclusion criteria included the following: (a) feasibility or pilot studies with preliminary data or qualitative studies; (b) studies that did not include both depression and coping in heart failure patients as main outcomes; (c) pharmacotherapy studies for heart failure; (d) studies involving patients who had cardiovascular surgery; (e) studies that included patients who have implanted devices; (f) studies that focused on other chronic diseases besides heart failure; (g) non-English publications; and (h) manuscripts published before January 1, 1996. All 53 manuscripts were located for review. Forty-seven did not meet inclusion criteria, leaving 6 studies for review. The 47 studies did not meet inclusion criteria for the following reasons: Russian print (n = 2); German print (n = 2); implanted devices such as defibrillators or ventricular assist devices (n = 5); cardiovascular surgery such as a heart transplantation or coronary revascularization (n = 5); spirituality focus (n = 4); social support focus (n = 3); end of life and caregiver focus (n = 3); qualitative methodology focusing on quality of life (n = 2); other disease processes besides heart failure, including pulmonary disease (n = 5), anxiety (n = 5), end-stage renal disease (n = 1), myocardial infarction (n = 1), and lupus (n = 1); cytokine focus (n = 1); gender focus (n = 1); and studies in heart failure patients that included either depression or coping, but not both (n = 6). Assessment of the data was undertaken independently by 3 independent reviewers. The 3 independent reviewers met 4 times over 4 months to discuss differences, which were resolved by discussion.

**Results**

The 6 studies included a variety of different purposes and measured several different variables in addition to depression and coping.\(^{16,24-28}\) Studied components also included quality of life, functional status, disease severity, emotional states, social support, appraisals, and personality styles. Emphasis placed on each of these components varied across studies, but each measured the association of coping and depression in patients with heart failure. Data were collected either during a single interview session (Table 1) or over a period of time at 2 or more separate data collection sessions (Table 2). Questionnaires were used in most studies to gather data on depression (Table 3) and coping skills (Table 4).

**Cross-sectional Designs**

Three studies\(^{24-26}\) collected data during a single interview session using a cross-sectional approach. Single wave data collection is a convenient method for both the researcher and the participant. Vollman et al\(^{26}\) investigated the relationships between depression and coping in heart failure patients (n = 75) by administering verbal questionnaires. The participants included a convenience sample selected from a heart institute and ranged in age from 27 to 82 years (mean [SD], 54.6 [13.1] years). Most participants were white (81.3%), middle class (60%) men (69%) who had NYHA class II (36%) or III (48%) heart failure. The Beck Depression Inventory\(^{21}\) was administered to measure depression, and the Ways of Coping Questionnaire\(^{37}\) measured coping. Fifty-three percent of the participants had a clinically significant history of depression and 43% were taking antidepressant medications. The results demonstrated that problem- and emotion-focused coping demonstrated a relationship with depression. The problem-focused strategies such as seeking social support (r = −0.23, P < .04) and planful problem solving (r = −0.27, P < .02) had a direct, negative relationship with depression, and the emotion-focused strategies such as wishful thinking had a direct, positive relationship (r = 0.45, P < .001) with depression. Multiple regression analyses demonstrated that escape-avoidance (P < .001), planful problem solving (P < .01), and the demographic variables of being single (P < .001) and functional impairment level (P < .001) according to NYHA stage surfaced as significant predictors of depression. Overall, this investigation showed that those individuals who used more problem-focused coping methods had less depression and those who used more escape-avoidance coping had more depression.\(^{26}\)

A study by Klein et al\(^{25}\) used a convenience sample of heart failure patients (n = 80) from a family care center and heart failure specialty clinic to identify the relationship between coping styles and depression and the relationship between coping styles and health-related quality of life. This sample was different from other studies because it consisted entirely of older adults (≥60 years old) with a mean (SD) age of 69 (7) years. Most participants were
white (99%) women (52%) who had NYHA class II (35%) or III (59%) heart failure. Participants were invited to participate by a letter sent to their home and were interviewed during a clinic visit or in their homes depending on the participant’s preference. Depression was measured with the Geriatric Depression Scale and coping was measured using the Brief COPE scale. Findings demonstrated that patients who used more active behavioral coping demonstrated less fatigue and more energy. Avoidance coping was associated with behavior that used self-blame (P < .001), denial (P < .01), venting (P < .001), self-distraction

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**TABLE 1** Cross-sectional Studies

<table>
<thead>
<tr>
<th>Title</th>
<th>“Is Coping Style Linked to Emotional States in Heart Failure Patients”</th>
<th>“Relationship of Coping Styles with Quality of Life and Depressive Symptoms in Older Heart Failure Patients”</th>
<th>“Coping and Depressive Symptoms in Adults Living With Heart Failure”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authors</td>
<td>Doering et al</td>
<td>Klein et al</td>
<td>Vollman et al</td>
</tr>
<tr>
<td>Sample</td>
<td>N = 84 Mean (SD) age, 54.1 (10.8) y Men, 70.2% Length of current relationship, mean (SD), 24.7 (15.3) y White, 70.2%</td>
<td>N = 80 Mean (SD) age, 69 (7) y Men, 48% Married or partnered, 70% White, 99%</td>
<td>N = 75 Age range, 27–82 y Men, 69% Married or partnered, 59% White, 81.3% Black, 17.3% Hispanic, 1.3%</td>
</tr>
<tr>
<td>LVEF, mean (SD), %</td>
<td>24.9 (8.0)</td>
<td>38 (15)</td>
<td>28.9 (14.4)</td>
</tr>
<tr>
<td>NYHA class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>2.4%</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>II</td>
<td>21.4%</td>
<td>35%</td>
<td>36%</td>
</tr>
<tr>
<td>III</td>
<td>48.8%</td>
<td>59%</td>
<td>48%</td>
</tr>
<tr>
<td>IV</td>
<td>27.4%</td>
<td>1%</td>
<td>9.3%</td>
</tr>
<tr>
<td>Inclusion criteria</td>
<td>Left ventricular systolic dysfunction Age ≥18 y Speaks, reads, and writes English No serious comorbidity Mentally competent</td>
<td>English speaking Mini-Mental Status Score &gt;20 Age &gt;60 y</td>
<td>English speaking Age ≥21 y Diagnosis of HF No recent acute cardiac decompensation No psychopathology other than depression Ability to complete study instructions Access to a telephone</td>
</tr>
<tr>
<td>Instruments</td>
<td>Profile of Mood States Dealing With Illness Checklist</td>
<td>Geriatric Depression Scale Brief COPE</td>
<td>Beck Depression Inventory WCQ-Research Edition</td>
</tr>
<tr>
<td>Methodology</td>
<td>Questionnaires in written form were completed in clinic by participant</td>
<td>Interview at an outpatient clinic or participant’s home</td>
<td>Single wave data collection at clinic with verbal administration of questionnaires</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Active behavioral coping was negatively associated with fatigue and vigor. Avoidance coping was negatively associated with vigor and positively associated with depression.</td>
<td>Maladaptive coping was associated with lower quality of life and more depression.</td>
<td>Those with more problem solving and seeking social support coping had less depressive symptoms. Those who used more escape-avoidance had increased depression.</td>
</tr>
<tr>
<td>Limitations</td>
<td>Cross-sectional design Largely white, male sample Small sample</td>
<td>Cross-sectional design Majority of sample were whites Small sample</td>
<td>Cross-sectional design Convenience sample Small sample</td>
</tr>
</tbody>
</table>

Abbreviations: HF, heart failure; LVEF, left ventricular ejection fraction; NYHA, New York Heart Association; WCQ, Ways of Coping Questionnaire.
Multiple regression analysis revealed that denial (P < .01) and self-blame (P < .01) was significantly correlated with increased levels of depression. Findings suggest that those patients who used maladaptive coping styles had more depression and that interventions that support active behavioral coping may improve well-being in patients with heart failure.25

Doering et al24 also used a single data collection to determine the relationship between coping and emotional states in heart failure patients. Similar to the previous 2 studies, they used a convenience sample (N = 84) from an outpatient setting. The average age of the participants was 54.1 years (SD, 10.8 years), and the majority were white (70.2%) and male (70.2%) and were found to have NYHA class III (48.8%) or IV (27.4%) heart failure. Participants completed questionnaires during a single clinic visit. Coping was measured with the Dealing With Illness Checklist,35 and the Profile of Mood States30 was used to measure depression. Results demonstrated that avoidance coping was significantly (P < .001) associated with higher levels of depression, and there were no significant differences in depression between

### TABLE 2 Longitudinal Studies

<table>
<thead>
<tr>
<th>Title</th>
<th>Murberg et al27</th>
<th>Park et al28</th>
<th>Carels16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>n = 119 Mean (SD) age, 66.0 (9.1) y Men, 71% White, not listed</td>
<td>n = 163 (202 at baseline, 163 at 6 mo) Mean (SD) age, 65.2 (10) y Men, 95% White, 68%</td>
<td>n = 58 Mean (SD) age, 67.7 (11.8) y Men, 57% White, majority</td>
</tr>
<tr>
<td>LVEF, mean (SD), %</td>
<td>Not listed</td>
<td>30.7 (10)</td>
<td>33.4 (11.2)</td>
</tr>
<tr>
<td>NYHA class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>4.9%</td>
<td>Mean (SD), 1.9 (0.7)</td>
<td>3%</td>
</tr>
<tr>
<td>II</td>
<td>40.7%</td>
<td>52%</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>45.7%</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>8.6%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Inclusion criteria</td>
<td>Patients with CHF from Central Norway</td>
<td>Entered hospital in the past year ICD code for CHF Age &gt;40 y</td>
<td>Age &gt;18 y LVEF ≤50%</td>
</tr>
<tr>
<td>Instruments</td>
<td>Zung Self-rating Depression Scale COPE</td>
<td>CES-D COPE</td>
<td>BDI Brief COPE</td>
</tr>
<tr>
<td>Methodology</td>
<td>Structured interviews for questionnaires at baseline and then 2 y later</td>
<td>Written or verbal interviews of questionnaires at baseline and then 6 mo later</td>
<td>Participants completed a 2-wk daily assessment of QOL.</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Coping style accounted for a significant amount of unique variance in depression when controlled for personality traits.</td>
<td>Active coping and social support were prospectively related to depression. Depression led to increased threat appraisals and further depression at 6 months.</td>
<td>Greater daily negative mood was significantly associated with greater depression. Greater action/acceptance coping was significantly associated with lower depression but greater functional impairment.</td>
</tr>
<tr>
<td>Limitations</td>
<td>Limited inclusion criteria</td>
<td>Majority of sample were men.</td>
<td>Small sample size Majority of sample was white. Comorbidities were not measured.</td>
</tr>
</tbody>
</table>

Abbreviations: BDI, Beck Depression Inventory; CES-D, Center for Epidemiological Studies-Depression Scale; CHF, chronic heart failure; ICD, International Statistical Classification of Diseases, LVEF, left ventricular ejection fraction; NYHA, New York Heart Association; QOL, quality of life.
high or low users of active (behavioral or cognitive) coping. Multiple regression analysis revealed that avoidance coping was also shown to be associated with the emotional state of depression ($P < .001$). Findings suggest that patients who used the maladaptive coping strategy of avoidance had more depression.

### TABLE 3  Depression Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Study</th>
<th>Description</th>
<th>Internal Consistency (Cronbach $\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile of Mood States (McNair et al$^{30}$)</td>
<td>Doering et al$^{24}$</td>
<td>65 items with 6 subscales measured confusion, vigor, anger, depression, anxiety, and fatigue in terms of how they have been feeling in the past week (0, not at all to 4, extremely)</td>
<td>.85</td>
</tr>
<tr>
<td>Beck’s Depression Inventory (Beck$^{31}$)</td>
<td>Carels$^{16}$ and Vollman et al$^{26}$</td>
<td>21 items concerned with a particular aspect of the experience and symptoms of depression around 3 factors: negative attitude toward self, performance impairment, and somatic disturbance (0, absence of a problem in that area to 3, most severe symptoms)</td>
<td>Carels: not listed Vollman et al .86</td>
</tr>
<tr>
<td>Center for Epidemiological Studies-Depression Scale (Radloff$^{32}$)</td>
<td>Park et al$^{28}$</td>
<td>Asks participants to rate the extent to which they experienced each of the 20 depressive symptoms in the past week (0, none to 3, all of the time)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Geriatric Depression Scale (Yesavage et al$^{33}$)</td>
<td>Klein et al$^{25}$</td>
<td>30 items that address cognitive features of depression to limit the impact of medical illness and neurovegetative signs of depression in elder patients</td>
<td>Not listed</td>
</tr>
<tr>
<td>Zung Self-rating Depression Scale (Zung$^{34}$)</td>
<td>Murberg et al$^{27}$</td>
<td>20 items on depressive symptoms. Participants describe frequency on a 4-point scale.</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

### TABLE 4  Coping Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Study</th>
<th>Description</th>
<th>Internal Consistency (Cronbach $\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dealing With Illness Checklist (Namir et al$^{35}$)</td>
<td>Doering et al$^{24}$</td>
<td>50-item checklist to evaluate use of active-behavioral, active-cognitive, and avoidance coping</td>
<td>Active-behavioral = .76 Active-cognitive = .80 Avoidance = .64</td>
</tr>
<tr>
<td>Brief COPE (Carver$^{36}$)</td>
<td>Used acceptance, active coping, mental disengagement, and instrumental support subscales Carels$^{16}$ Klein et al$^{25}$</td>
<td>28 items with 2 items per scale Scales include self-distraction, active coping, denies, substance abuse, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame.</td>
<td>Not listed for both studies</td>
</tr>
<tr>
<td>Ways of Coping Questionnaire-Research Edition (Folkman and Lazarus$^{37}$)</td>
<td>Vollman et al$^{26}$</td>
<td>66 items with 8 subscales that represent the use of problem-focused (seeking social support, planful problem solving, and confrontive coping) and emotion-focused (positive reappraisal, self-controlling, distancing, escape-avoidance, and accepting responsibility) coping</td>
<td>Ranged from .55 to .93 for the 8 subscales</td>
</tr>
<tr>
<td>COPE (Carver et al$^{38}$)</td>
<td>Park et al$^{28}$ Murberg et al$^{27}$ 13 subscales used at baseline, 7 subscales used at 2 y</td>
<td>60 items with 15 subscales (active coping, restraint, denial, alcohol/drug use, mental disengagement, religious coping, social instrumental support, social emotional support, suppressing competing activities, humor, behavioral disengagement, positive reinterpretation and growth, acceptance, venting, planning)</td>
<td>Not listed for both studies</td>
</tr>
</tbody>
</table>
**Longitudinal Designs**

Three studies used a longitudinal method to examine variations in the relationship between the variables of coping and depression in heart failure over time. Carels used a unique approach to gather data from heart failure patients to assess the association between depression and coping. In this investigation, participants were asked to fill out a diary to be completed at the end of each day for 2 weeks. The diary asked about their physical and emotional lives, mood, coping responses, and social support. Depression was measured with the Beck Depression Inventory, and coping was measured with the instrument support, acceptance, active coping, and mental disengagement subscales of the Brief COPE. The participants were recruited from an outpatient clinic and consisted largely of men (57%) who were NYHA class II (52%) or III (40%) with a mean (SD) age of 67.7 (11.8) years. Results revealed that there was significantly ($P < .05$) lower depression with the use of active or acceptance coping. Symptom focus, distraction, and advice seeking coping were not significantly associated with depression. Overall, those who used adaptive coping tended to have less depression.

Another longitudinal study by Park et al. used 2 data collection time points for a group of heart failure patients. This study replicated and built upon a previous model by Holahan et al. that specifically focused on active coping in heart patients. Oral or written questionnaires were administered to 202 participants at baseline. At time 2 data collection (6 months), 81% (n = 163) of the participants provided data. The majority were white (68%) men (95%). Seventy-six percent of the participants were NYHA class I or II, and their mean (SD) left ventricular ejection fraction was 30.7% (10%). Coping was measured with the COPE, and depression was measured using the Center for Epidemiological Studies Depression Scale. Results showed that depression at 6 months was significantly ($P < .01$) positively correlated with depression at baseline. Also, depression was significantly negatively correlated with active coping at baseline ($P < .01$) and 6 months ($P < .01$). Lastly, active coping at baseline was significantly ($P < .01$) positively associated with active coping at 6 months. Therefore, depression tended to persist over the 6-month period for those who were originally depressed at baseline. Those participants with active coping skills had less depression at both time points, and if active coping was present at baseline, it was also present at 6 months.

Murberg et al. examined how coping and personality traits were related to depression in the heart failure patient. Their goal was to examine if different types of coping were reflections of personality. They hypothesized that coping styles, like personality traits, would be stable over time and would not account for the variance in depression. The researchers used a convenience sample (N = 119) from an outpatient clinic that consisted largely of men (71%) with a mean (SD) age of 66.0 (9.1) years. Participants were assessed during a structured interview at baseline and were then followed-up at 2 years. Attrition at 2 years included 36 participants, with 20 due to death and 16 unwilling to participate further. A total of 83 participants finished the questionnaires. The instrument used to measure depression was the Zung Self-Rating Depression Scale, and coping was measured with the COPE scale. Results at baseline revealed that the avoidance coping of mental disengagement ($P < .01$), restraint ($P < .01$), and use of emotional support ($P < .01$) were positively associated with self-rated depression. Acceptance was found to be negatively correlated ($P < .01$) with depression. A much stronger relationship ($P < .0001$) was found between behavioral disengagement and increased depression. After controlling for NYHA class, sex, and age, the relationship of emotional support ($P < .001$), mental disengagement ($P < .001$), and behavioral disengagement ($P < .0001$) remained. The stability of coping was examined, and active coping was not found to be significantly correlated between baseline and the 2-year ($r = 0.19$) follow-up. The use of instrumental support ($P < .0001$), positive reframing ($P < .0001$), acceptance ($P < .0001$), mental disengagement ($P < .0001$), behavioral disengagement ($P < .0001$), and denial ($P < .01$) was found to be significantly correlated between baseline and at 2 years. Overall, maladaptive coping was associated with increased depression, and most strategies used to cope persisted over time.

**Discussion**

The purpose of this article is to critically evaluate the evidence related to depression and coping in heart failure patients and determine if certain types of coping are more common in heart failure patients with depression. Studies reviewed used either a cross-sectional or longitudinal approach to measure the association of coping with depression. Patients with heart failure who used adaptive or active coping methods had lower levels of depression compared with patients who used maladaptive coping and had higher levels of depression.

**Problem-Focused Coping**

Heart failure patients who used problem-focused coping were found to have less depression. Those who used active coping were found to have...
less depression. The strategy of planful problem solving was also found to be associated with less depression. Problem-focused strategies, however, were not found to be significantly associated with less depression in the other studies. Although not statistically significant, it was found that participants who were high users of active behavioral coping showed less depression than did participants who used active behavioral coping less. In the study by Murberg et al., there was also a non-significant association between problem-focused coping and active coping and planning and less depression. Results from Klein et al. however, showed that active coping and planning were actually associated with increased depression. This relationship was not significant, but it was the only study to demonstrate increased depression associated with problem-focused coping. This conflicting data could possibly be due to the variation in sample age or sex. This was the only study to examine the elderly, and participants younger than 60 years were excluded. This sample also used emotion-focused coping styles more often than problem-focused styles, and acceptance, religion, and using emotional support were the 3 most frequently used styles. It is possible that the older heart failure population tends to use less problem-focused coping and that interventions for this population should be geared toward improving the use of these coping styles. This was also the only study to have a sample that consisted of a majority of women (52%). Past research has indicated that women tend to use more emotion-focused coping when dealing with their depression. It could be that women also tend to use more emotion-focused strategies when dealing with heart failure, and interventions should be aimed at teaching problem-focused strategies to help women cope with depression and heart failure. Clarification with regard to these data and studies that focus on heart failure and depression might concentrate on helping those with heart failure enable insight into best treatment strategies that relate to coping and depression. Such research would provide a better understanding of how each person perceives the stress that is associated with their heart failure symptoms and disease management and the relationship to coping and depression. Central to the process of coping is the way that individuals actually perceive a change or stimulus as stressful. As the perceived threat of the disease increases, more emotion-focused forms of coping are used and the range of problem-focused skills decreases. A study by Bombardier et al. showed that individuals who appraised their chronic illness as holding them back were more likely to use emotion-focused coping and had a poor adjustment to their illness. A meta-analysis of coping and appraisals in cancer patients showed that those who appraised their illness as a threat were more likely to use problem-focused strategies, and those who appraised their cancer as a harm or loss used more avoidance coping. It is important that future research examine how each person perceives the stress that is associated with their heart failure symptoms and disease management and the relationship to coping and depression. Such research would enable insight into best treatment strategies that might concentrate on helping those with heart failure altering the way they view stressful situations.

Limitations

Limitations of many of the studies were related to the design, measures, and sampling. A cross-sectional design was used in 3 studies (Table 1); separate interviews were used by Murberg et al. and Park et al., whereas a 2-week daily assessment was used by Carels. A cross-sectional approach captures only a brief moment in time and does not give as much insight as a longitudinal approach does. Because of the complex and the ever-changing severity of symptoms associated with heart failure, primary or secondary appraisals of disease could change a great deal over time. Only one of the longitudinal studies...
measured participants’ appraisal of their disease at the same time as depression and coping. Appraisals have been shown to be important in deciding whether to use problem- or emotion-focused coping. Park et al found that participants who appraised their disease as a threat used less active coping. This illustrates the need for additional studies to measure appraisals at several points in time along with coping and depression in the heart failure population.

The only longitudinal study to measure variables at more than 2 points in time was undertaken by Carels, and this study assessed these variables only over a 2-week period. Lazarus and Folkman describe coping as a “constantly changing” process, but 2 of the longitudinal studies showed that coping tended to be constant over time. Murberg et al attempted to examine if coping was related to personality traits that tended to be steady over time but found that coping styles did not reflect personality traits. It may be that heart failure patients are unique in symptoms or that the levels of stress that they endure or perceive are different. More longitudinal research is needed to examine and explain these findings and describe how heart failure patients cope at the time of diagnosis and through the resulting changes in their functional status and quality of life.

Another limitation was that multiple methods were used to measure depression and coping across studies. Depression was measured with 5 different scales (Table 3), and coping was measured with 4 different scales (Table 4). This variation in measuring scales could be a factor in determining coping and depression and also complicates the comparison between studies. Different scales might not give an accurate picture of participants’ depression or how participants cope with situations. It is important for future studies to examine the best methods to measure coping and depression in the heart failure population. Heart failure is a chronic disease with a unique progression and set of symptoms; using consistent scales to measure variables is crucial to ensuring valid and reliable results.

The samples of the studies also posed a limitation, as they were generally small and consisted largely of white men. Convenience samples were used for each of the studies, which might not provide a true representation of the heart failure population. Although completely random samples may not be possible, it is necessary to assess larger populations from multiple sites across the country to ensure that data collected are representative of the larger heart failure population.

Also of value would be studies that explore appropriate management of depression in the heart failure population. Treatments not only could help improve the quality of life of heart failure patients with depression but might also provide insight into the relationship of coping and depression in this population. It is difficult to assess the causality of depression and coping with either a cross-sectional or longitudinal approach. However, studies focusing on treating depression with medications or interventions aimed at improving coping skills could provide more information on the directionality or strength of the relationship between coping and depression. For example, if depression decreased over time only after an intervention aimed at improving problem-focused coping, then one could deduce that coping played a large role in the depression. On the other hand, if changing coping to a more problem-focused, adaptive approach through a structured intervention did little to improve depression, then it may be that the maladaptive coping used by the participant did not add to the depression and interventions should be directed toward something other than building or strengthening adaptive coping.

Overall, there was a lack of studies on the topic of depression and coping in heart failure. Future research on this topic is needed to better understand the associations of depression and coping. Results thus far point to the fact that those with heart failure who use emotion-focused and maladaptive coping to deal with their stressors tend to have more depression. However, many questions about causality, how symptoms progress over time, and best possible management options remain. Additional longitudinal research studies with large representative samples are needed. Insight into how people with heart failure appraise stressors and learn to deal with the symptoms and severity of their disease could provide additional understanding of the complexities that lead to depression in heart failure. Doing so might ensure that those individuals with heart failure who are depressed will have more effective means to cope with the ever-changing and often sporadic progression and remission of debilitating symptoms, the complicated medical management, and the frequent lifestyle changes that may accompany heart failure.
Well-designed studies could also provide researchers with an opportunity to explore more effective means of treating depression in this population. Developing specific interventions that focus on effectively treating depression in the heart failure population with a combination of medication and nonpharmacological therapy is a worthy goal. These complex management strategies could assist patients with heart failure to manage their disease, improve quality of life, and possibly decrease healthcare costs.

REFERENCES

36. Carver CS. You want to measure coping but your protocol’s


