

Navigating Symptom Management in Heart Failure: The Crucial Role of the Critical Care Nurse

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High-acuity, progressive care, and critical care nurses often provide care for patients with heart failure during an exacerbation of acute disease or at the end of life. Identifying and managing heart failure symptoms is complex and requires early recognition and early intervention. Because symptoms of heart failure are not disease specific, patients may not respond to them appropriately, resulting in treatment delays. This article reviews the complexities and issues surrounding the patient's ability to recognize heart failure symptoms and the critical care nurse's role in facilitating early intervention. It outlines the many barriers to symptom recognition and response, including multimorbidities, age, symptom intensity, symptom escalation, and health literacy. The influence of self-care on heart failure management is also described. The critical care nurse plays a crucial role in teaching heart failure patients to identify and respond appropriately to their symptoms, thus promoting early intervention. (*Critical Care Nurse*. 2020;40[2]:55-63)

Hear failure (HF) is a global epidemic that is projected to affect 8 million people by 2030.¹ Most care for patients with chronic HF takes place in the home. However, given the increasing prevalence of HF and the fact that more than 1 million people are hospitalized with the condition each year, it is likely that high-acuity, progressive care, and critical care nurses (collectively referred to as CCNs) will provide care for patients with HF at some point during their careers, conceivably during an exacerbation of acute HF or at the end of life.² In both instances, the patient or caregiver seeks medical care and the patient may be hospitalized because symptoms can no longer be managed or alleviated at home.

CE 1.0 hour, CERP A

This article has been designated for CE contact hour(s). The evaluation tests your knowledge of the following objectives:

1. Identify the facilitators and barriers of symptom recognition.
2. Define the key concepts of self-management.
3. Name 3 actions that the critical care nurse can initiate to promote self-care management.

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Symptoms are subjective evidence of disease that is apparent to or recognized by the patient. For patients with HF, symptom recognition is especially complicated because symptom presence and intensity vary daily. Additionally, the effects of comorbidities, age, and medications contribute to a dynamic pattern of symptoms.³ Traditionally, patients with HF are taught to recognize the escalating signs and symptoms of worsening HF (Table 1). Unfortunately, recognition by the patient does not guarantee that the patient will seek medical care.⁸ Collectively, research has focused on the patient's ability to recognize symptoms rather than the patient's ability to respond to symptoms or engage in self-initiated symptom management.^{9,10} What motivates a patient to initiate and perform self-management and seek care when he or she experiences a new symptom or a change in symptoms is the subject of continuing research.

Early recognition of worsening symptoms or new symptoms followed by immediate intervention is key to managing symptoms and avoiding hospitalization. Yet recognizing and managing symptoms are complex.⁹ Symptoms of HF are heterogeneous, with daily fluctuations that vary between and within patients.¹¹ Inadequate symptom management (ie, poor or slow response

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to escalating symptoms) may result in hospitalization.¹²⁻¹⁴ Each hospitalization is an opportunity for the CCN to reassess, review, and reeducate the patient and caregiver in self-care behaviors.¹⁵ Subsequently,

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Table 1 Symptoms experienced by patients that should prompt a call to the health care provider^a

Increased shortness of breath with exertion or when supine
New or increased swelling of the ankles, feet, or abdomen
Weight change of 2 to 3 lb in 1 day, 5 lb in 1 week
New or worsened fatigue, inability to complete activities of daily living
Increased cough, pink-tinged mucus
Nausea, poor appetite, or early satiety
Chest pain, pressure, or tightness
New irregular heartbeat or palpitations
Trouble thinking or increased daytime sleepiness
Drop in blood pressure or weight associated with dizziness

^a Data from Yancy et al,⁴ Riegel et al,⁵ White et al,⁶ and Paul and Kirkwood.⁷

education can strengthen the patient's self-care skills and prevent future hospitalizations.

Facilitating self-care behaviors is an important component of HF management, including recognizing and responding to symptoms. Self-care has been defined as a naturalistic decision-making process that patients use in the choice of behaviors and the response to symptoms.¹⁶ Self-care education is ongoing and ideally occurs with every interaction with any member of the health care team, including the CCN in the hospital.¹⁴ Greater engagement in self-care is associated with multiple benefits, including reduced hospitalizations, decreased mortality, and improved quality of life.¹⁷

Importantly, failure of self-care can result in delay in seeking treatment. Altice⁸ reported that more than 50% of HF patients delay seeking care when they experience signs and symptoms, often because they are unsure whether a symptom is related to HF, whether it requires intervention, or whether intervention will provide relief. Another reason patients delay seeking care is poor advice from family members.¹⁸ Implications of delaying care include increased costs, longer hospital stays, and increased morbidity and mortality.¹⁸ Taking into consideration the patient's health literacy, comorbidities, and social support, CCNs need to be aware of the reasons for delay in seeking treatment for HF symptoms and have frank discussions with patients about the appropriate actions to take when symptoms are first recognized or existing symptoms intensify.

Critical care nurses play an important role in teaching patients self-care and therefore in the early recognition of symptoms. At the time of admission and throughout the hospital stay, the CCN discusses the reason for hospitalization with the patient and family. Thus,

hospitalization is an opportune time to review the patient's symptoms and their duration and precursors, as well as strategies for intervening before symptoms worsen and necessitate hospital admission.

Factors Influencing Recognition of HF Symptoms

Symptom recognition in HF is the ability of patients to recognize symptoms related to their disease.¹⁹ Early recognition of HF signs and symptoms (such as fluid retention), when coupled with self-care, may prevent worsening HF and hospitalizations.²⁰ Multiple factors influence the patient's ability to recognize symptoms of HF early (Table 2). The most significant factors are comorbidities and age.²¹⁻²⁴

Multimorbidity

Patients with HF often have multimorbidity (coexistence of multiple health conditions), complicating HF treatment. The most recent guidelines for HF management address treatment for patients with HF and specific comorbidities, such as atrial fibrillation.^{4,25,26} Murad et al²² estimated that 60% of patients with incident HF have 3 or more chronic conditions. Some symptoms, such as dyspnea and fatigue, are not HF specific. In fact, symptoms of chronic conditions often overlap, confounding patients' ability to recognize which of their symptoms may be caused by HF¹⁴ and thereby contributing to the challenge of early recognition (Table 3).

Chronic comorbidities may necessitate dietary restrictions. For example, Dickson et al³⁰ found that half of patients with HF reported multiple diet restrictions. Adhering to a low-sodium diet and fluid restriction, along with additional dietary restrictions recommended for certain comorbidities, can be challenging.

When assessing for multimorbidity, a useful tool is the Charlson Comorbidity Index, which predicts risk of death within 1 year of hospitalization for patients with comorbid conditions, as well as 10-year survival and mortality risk.³¹ Such tools can facilitate communication about competing comorbidities and help identify priorities for care.²⁴ The CCN should consider multimorbidity as well as the index disease of HF when teaching patients about symptom recognition.

Age

In the Cardiovascular Health Study, Murad and colleagues²² found a high burden of comorbidities in

Table 2 Potential barriers to heart failure symptom recognition and intervention^a

Lack of symptom monitoring
Cognitive decline
Lack of understanding of the significance of certain symptoms
Belief that symptoms are not severe
Belief that symptoms are caused by medication or other conditions
Poor self-efficacy
Unfavorable previous response to intervention
Daily variation in symptoms
Multimorbidity

^a Data from Jurgens et al,²¹ Murad et al,²² Riegel et al,²³ and Shaffer and Maurer.²⁴

Table 3 Symptoms of heart failure and possible comorbidities^{a,b}

Symptoms	HF	COPD	CRF	AF
Dyspnea	X	X	X	X
Orthopnea	X	X		
Paroxysmal nocturnal dyspnea	X			X
Cough, wheezing	X	X		
Chest pain, tightness	X	X		X
Fatigue	X	X	X	X
Abdominal distention	X		X	
Lower-extremity edema	X		X	
Palpitations	X			X
Mental confusion	X	X		X
Dizziness, lightheadedness	X			X
Exercise intolerance	X	X	X	X
Sleep disturbances	X			

Abbreviations: AF, atrial fibrillation; COPD, chronic obstructive pulmonary disease; CRF, chronic renal failure; HF, heart failure.

^a Data from Yancy et al,⁴ Yancy et al,²⁵ Freeman et al,²⁶ KDIGO,²⁷ Vogelmeier et al,²⁸ and Rogers et al.²⁹

^b Patients should be taught to monitor their symptoms with and without activity.

elderly patients (mean age, 79.2 years) with HF, as well as cognitive and functional impairments, some of which were associated with increased mortality. Riegel et al²³ suggested that the elderly have difficulty with the process of detecting symptoms because of age-related changes. Possible reasons for elderly patients' difficulty in interpreting symptoms are loss of gray matter (the area of the brain responsible for symptom perception), less vigilance regarding well-being, lack of distress over health changes, and attributing symptoms to aging or comorbidities.²³

In older adults, the CCN should perform routine assessments of geriatric conditions throughout the

patient's hospitalization, including mobility, cognitive function, and psychological disorders,²⁴ which will help guide teaching about early recognition of HF symptoms. Attention, executive function, and memory deficits have been observed in up to 80% of people with HF.³² Cognitive deficits in HF contribute to poor outcomes such as inadequate self-care.³³ The Montreal Cognitive Assessment and Mini-Mental Status Examination are examples of validated tools for detecting cognitive impairments in individuals with HF.³⁴ If cognitive deficits are shown, patients may benefit from a referral for more comprehensive neuropsychological testing.³⁴

Nursing assessments should also include screening for depression. Patients are less likely to adhere to medication regimens and lifestyle recommendations if they are depressed.³⁵ Nurses and physicians underrecognize depression in the absence of formal screening; therefore, formal

screening for depression should be part of routine care

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for hospitalized patients.³⁶ One example of a validated screening tool is the Patient Health Questionnaire-2.³⁷ If the Patient Health Questionnaire-2 is positive, the Patient Health Questionnaire-9³⁷ could be used and then appropriate referrals made on the basis of the total score. Numerous tools are available for screening for depression and cognitive deficits; CCNs should use the tools that their organization has chosen.¹⁵

Younger patients (< 60 years of age) have less morbidity and therefore experience fewer physical comorbidity-related symptoms.^{38,39} The CHARM (Candesartan in Heart Failure Assessment of Reduction in Mortality and Morbidity) study found that younger patients experienced different symptoms, including less dyspnea and peripheral edema and more paroxysmal nocturnal dyspnea and hepatomegaly, with higher jugular venous pressure, and were often assigned a lower New York Heart Association functional class.^{38,39} Therefore, it is essential that the CCN take into consideration patient age and comorbidities when teaching HF self-care.

Influence of Symptom Intensity

Symptom intensity is defined not by a symptom's frequency of occurrence but by the level at which it is perceived by the person during the experience.⁴⁰ The

perception of symptom intensity is a subjective experience,⁴¹ can be influenced by multiple factors, and varies among patients. Lifestyle, anxiety, depression, and patient expectations can all influence the perception of symptom intensity.⁴² Symptom intensity is closely tied to New York Heart Association classification scoring. In a secondary data analysis of the COMET (Carvedilol or Metoprolol European Trial), Ekman and colleagues⁴² found that scores for breathlessness were a significant predictor of mortality and that fatigue was a significant predictor of worsening HF. Unfortunately, these findings have not been replicated. Observations in patients with HF indicate that patients may change their activities to prevent or modify their symptom experience, such as sleeping with 2 pillows to limit orthopnea or modifying physical activity to decrease fatigue or limit dyspnea. Thus, it is important for the CCN to ask the patient about his or her symptom experience with and without activity and encourage the patient to monitor all symptoms over time. Emerging data support the relationship between worsening symptoms and elevated left ventricular pressures with exercise in patients with a preserved ejection fraction and HF.⁴³

Other studies have included the perception of symptom intensity as an indirect predictor of quality of life,⁴⁴ medication adherence,⁴⁵ and end of life.⁴⁶ The primary goal is to relieve suffering⁴⁶; therefore, the CCN must carefully assess the intensity of symptoms and factors that would influence the experience of symptoms.

Escalation of Acute Symptoms

The cardinal symptoms of HF are dyspnea and fatigue, but patients may experience other symptoms, all of which may be acute or chronic (Table 3). In the acute care setting, CCNs often encounter patients with HF who have dyspnea and fluid overload marked by an increase in left ventricular filling pressures requiring aggressive treatment with diuretics, vasodilators, and pulmonary pressure monitoring.^{47,48} Because fluid retention is usually a slow process, especially in patients with a reduced ejection fraction, the CCN may wonder how or why the patient failed to detect a change in his or her symptoms before presenting with acute HF. Interestingly, early indicators of fluid retention are often unrecognized; the reasons for the lack of awareness are unclear.²⁰ Riegel and colleagues²⁰ proposed several reasons that patients with HF delay seeking treatment, such as episodic monitoring, inaccurate monitoring, mistaken interpretation, or poor decisions about how

to respond to a change. Moser and colleagues⁴⁹ found that symptom variability, not severity, predicted rehospitalization or mortality. This finding seems reasonable, as patients with HF frequently do not experience just 1 symptom. In contrast, some patients may have an abrupt change in symptoms associated with activity resulting in pulmonary edema; therefore, it is important for CCNs to obtain a complete symptom profile to help guide their patient education regarding symptom monitoring. Table 3 indicates the overlapping symptoms for common comorbidities and conditions, illustrating the difficulty in isolating the etiology of symptoms.

Patient behaviors such as excessive intake of sodium or alcohol or omitting medications may contribute to acute HF.⁴⁷ Other factors may relate to HF pathogenesis or comorbid conditions such as volume overload from renal failure or new-onset atrial fibrillation. Various interventions are needed to address the multiple barriers that impede self-management and self-efficacy (Table 2).

Self-efficacy (the confidence that one has the ability and knowledge to perform a particular behavior) has a powerful and consistent influence on self-management.^{5,50} For patients with chronic cardiovascular diseases, self-efficacy has an established effect on both the initiation and maintenance of self-care behaviors.^{5,50} Comorbid conditions influence the effect of self-efficacy on self-care.⁵⁰ Increased levels of self-efficacy promote medication and dietary adherence in patients with HF.^{51,52} However, it is not clear how duration of HF affects self-efficacy.

Self-care: The Foundation of Symptom Management

Self-care is an essential aspect of HF management. Self-care is a decision-making process that patients use when deciding on behaviors such as symptom monitoring and the response to symptoms when they occur.^{14,16} Self-care is important for building healthier lives and achieving positive outcomes.⁵ Self-care management requires patients to recognize a change in their symptoms, evaluate the change, take action, implement a treatment, and evaluate the response.^{5,14} These components are illustrated in the Self-care of Heart Failure Model.⁵³ Outcomes described in the American Heart Association's scientific statement on promoting self-care in HF¹⁴ include decreased HF readmissions and all-cause hospital readmissions,⁵⁴ reduced risk of mortality,⁵⁵ and lower cost of care.⁵⁶

In a 6-month longitudinal analysis of physical HF symptoms, Auld et al⁵⁷ found that symptom burden (or greater severity of symptoms) was associated with sustained self-care behaviors. The subgroup of patients who reported higher sustained symptoms over 6 months had higher levels

of engagement in self-care. Patients with lower sustained

Patient behaviors such as excessive intake of sodium or alcohol or omitting medications may contribute to acute heart failure.

symptoms may be less engaged in self-care and may benefit from targeted education and attention to become engaged in their self-care. Enhanced self-care may help to more effectively address symptoms and delay the progression of HF.⁵⁷

Facilitators and Barriers Related to Seeking Care

Personal values and cultural beliefs, family caregivers and social support, and home monitoring devices may facilitate self-care behaviors⁵⁸ and thus result in patients' seeking care when symptoms worsen. Health care team members' demonstration of respect for patients⁵⁹ and consideration of their values may promote adherence to health recommendations,⁶⁰ such as when to seek care. For example, in some cultures patients may not make self-care decisions independently but rather rely on others for input.⁶¹ In addition, Clark et al⁶² found that facilitators of more rapid care seeking included family caregivers' supporting self-care and care seeking, good communication and trust with health professionals, and the patient's experiencing dyspnea.

Products approved by the US Food and Drug Administration for home use detect changes in volume status or thoracic impedance, subsequently alerting providers to a patient's status and informing patients when to seek care (Table 4). Importantly, a device such as the CardioMEMS (Abbott) is contingent on patient compliance because pulmonary pressures are available only if the patient or family caregiver does the daily readings. Such a device may help patients to recognize a change in their condition. Critical care nurses need to be aware of HF monitoring devices, because patients with an implanted device may be hospitalized.

The patient's perceived amount of social support plays an important role in the interpretation of symptoms, necessitating that caregivers be included in all

Table 4 Monitoring systems for detecting thoracic fluid or composite index of congestion approved by the US Food and Drug Administration^a

Product	Description	Variable
CardioMEMS ^b	Implanted remote monitoring system	Pulmonary artery pressure
HeartLogic technology ^{64,c}	Algorithm available on several implantable devices	Thoracic impedance, other parameters
ReDS ^d	External wearable technology ^e	Lung fluid level

^a Data from Afari et al⁶³ and Boehmer et al.⁶⁴

^b Abbott.

^c Boston Scientific.

^d Sensible Medical Innovations.

^e Only vest is approved by the US Food and Drug Administration.

aspects of education.⁶⁵ Social support is defined as positive relationships that promote health and buffer stress. Social support incorporates the quality of the relationship, caring, concern, practical and emotional support, and informational support.⁶⁶ Because of the multiple aspects of social support, it is not known how each individual aspect or who provides the support influences HF patients. However, a study by Gallagher et al⁶⁷ found that HF patients who had a high level of perceived social support had better overall self-care, including contacting health professionals about weight changes, adhering to fluid restrictions, taking medications, and participating in regular exercise. Therefore, perceived social support has been cited as a factor in promoting self-care and lowering readmissions for HF patients.¹⁴

There are also barriers to seeking care. Patients often delay seeking care when they experience symptoms of

HF.^{65,68,69} The delay may be due to failure to monitor and/or recognize symptoms, taking a

Understanding where the patient may be in the process of self-care can help the CCN to direct and guide teaching during hospitalizations, which may improve self-care.

wait-and-see approach, the inability to attribute the symptom to the correct condition, poor advice from a family member or caregiver, or changes in cognitive status.^{18,65} Multimorbidity, health literacy, and cognitive impairment may make symptom recognition more challenging, especially in elderly patients. Riegel and colleagues²³ suggest that elderly people have poor interoception, the process of detecting symptoms, which makes HF symptom recognition more difficult. Elderly individuals with comorbidities living in rural settings are markedly more vulnerable to delay in seeking care and more likely to take a wait-and-see approach because of their distance

from health care providers and the time needed to travel to obtain assistance.⁶⁵ The CCN should consider age, multimorbidity, health literacy, and cognition when educating and developing a plan of care for seeking treatment.

Nearly half of all American adults have low health literacy and therefore difficulty understanding health information, underscoring the importance of assessing health literacy.⁷⁰ The Institute of Medicine adopted Ratzan and Parker's⁷¹ definition of health literacy: "the degree to which individuals can obtain, process, and understand the basic health information and service they need to make appropriate health decisions."^{70(p32)} After hospitalization for acute HF, low health literacy is associated with higher mortality.⁷² The association between health literacy and mortality is alarming but presents an opportunity for CCNs to affect patient outcomes. Assessing health literacy allows the health care team to tailor education and resources, target interventions known to reduce readmissions, and improve outcomes for patients admitted with HF.⁷³ Alspach⁷³ proposed that CCNs take 5 steps to improve outcomes: (1) familiarize yourself and your colleagues with the concept of health literacy and its important implications for a patient's health, (2) become acquainted with research evidence, (3) carefully select a way to measure health literacy, (4) assess and reassess health literacy as an essential parameter of care, and (5) contribute to your organization's program(s) to promote health literacy.

Health literacy is a critical determinant of a patient's ability to engage in self-care.⁷³ The time allocated to teach patients may be insufficient for adequate comprehension for some patients.⁷⁴ When educating patients about symptom recognition and self-care, it is vital that the CCN allow enough time for adequate comprehension, especially for those with vision, hearing, and cognitive

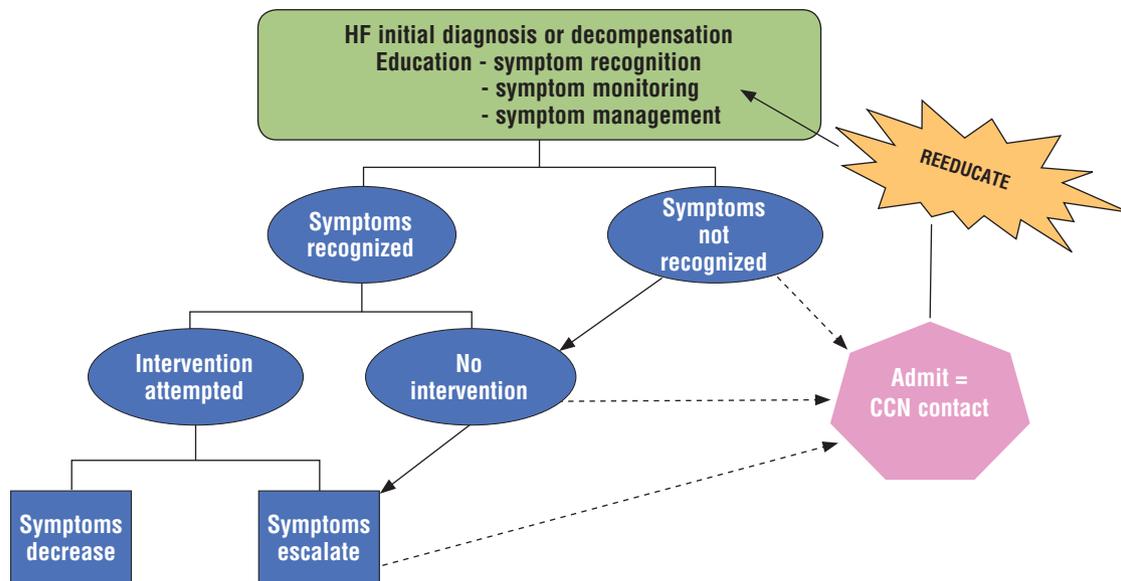


Figure The cyclic nature of self-management and the ongoing need for critical care nurses (CCNs) to review, reassess, and reeducate patients with heart failure (HF).

impairments. The CCN is encouraged to assess health literacy of both the patient and his or her caregivers before providing education, as patients often rely on their family members or caregivers to assist in symptom recognition and management.⁷⁵ A family-centered care approach is needed to improve early symptom recognition and ultimately health outcomes.

The American Association of Heart Failure Nurses recommends assessing patients' health literacy and implementing techniques for educating patients with low health literacy.^{15,76} Several instruments measure health literacy, including the Shortened Test of Functional Health Literacy in Adults,⁷⁷ Newest Vital Sign,⁷⁸ and Rapid Estimate of Adult Literacy in Medicine.⁷⁹ Selection of the instrument depends on attributes that are most desirable for the unit and/or organization.⁷³

In summary, the facilitators and barriers that influence a patient's decision to seek care for worsening or new HF symptoms are driven by the complex interplay of multiple factors. Age^{22-24,32,33,38,39} and multimorbidity^{4,5,14,22,25} affect the patient's perception of symptom intensity^{41,42} and, when combined with the perception of worsening acute symptoms,^{47,49} make decision-making difficult for the patient. Self-efficacy,^{5,14,16,30,57} which is influenced by communication⁶² and trust⁶² in health care professionals, and health literacy^{72,74,75} play roles in the patient's decision-making.

Implications for Critical Care Nurses

Critical care nurses may encounter patients with HF during various clinical situations in the decision-making process of self-care (see Figure). Successful self-care requires that the patient or caregiver be able to manage symptoms. Understanding where the patient may be in the process of self-care can help the CCN to direct and guide teaching and interventions during hospitalizations, which may improve self-care. Therefore, CCNs should understand the relationship between symptoms and self-care behaviors. The CCN should consider comorbidities as well as the index disease of HF when teaching patients about symptom recognition. Optimizing teaching for geriatric patients with HF may require CCNs to assess the patient's condition, including mobility, cognitive function, and psychological disorders, routinely throughout hospitalization,²³ which will help guide teaching about early recognition of HF symptoms. The CCN should consider these characteristics when educating and developing a plan of care for seeking treatment. In addition, the patient's social support plays an important role in the interpretation of symptoms. The CCN should include caregivers when educating about symptom recognition and management.⁶⁵ The CCN is encouraged to assess health literacy of both patient and caregivers when providing education.⁶⁸

The CCN should assess the patient's level of self-care using a validated and reliable measure, such as the Self-care

of Heart Failure Index (SCHFI).⁸⁰ The SCHFI has been used primarily in research but could be used in a clinical setting. In Auckland, a nurse-led initiative was created using an individualized education program that addressed factors identified by the SCHFI.⁸¹ Critical care nurses have an opportunity to engage in nurse-led initiatives to tailor patient education about factors identified by the SCHFI. Next, engaging the patient in self-care through education and promoting skills is essential, which may require a change in behavior.⁷⁶

The technique of motivational interviewing can produce behavior changes.¹⁴ Motivational interviewing is a counseling technique that incorporates social cognitive theory and the stages of motivational readiness for change model.¹⁴ Motivational interviewing requires training time and practice to be successful. It is not easily incorporated into day-to-day nursing practice without proper training and requires refinement of skills. However, preliminary skills in motivational interviewing are easily attained with proper training, and the technique is worth the effort to learn because of its power in facilitating behavioral change.⁸²

To educate patients about HF and ultimately improve outcomes and reduce readmissions, it is essential for CCNs to understand the relationships among symptoms, self-care behaviors, and skills and to incorporate techniques to facilitate behavioral change. The CCN plays a crucial role in navigating the processes surrounding symptom recognition and management for patients with HF. **CCN**

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None reported.

See also

To learn more about caring for patients with heart failure, read “Obesity Paradox: Comparison of Heart Failure Patients With and Without Comorbid Diabetes” by Lee et al in the *American Journal of Critical Care*, 2017;26(2):140-148. Available at www.ajconline.org.

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