Nursing care in old patients with heart failure: current status and future perspectives

Hong-Ying Pi1,*, Xin HU2
1Nursing Department, Chinese PLA General Hospital, Beijing, China
2Vasculocardiology Department, Chinese PLA General Hospital, Beijing, China

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1 Introduction

The prognosis of heart failure (HF) patients has significantly improved in the last 20 years, given the advent of therapies such as angiotensin-converting enzyme (ACE) inhibitors/angiotensin receptor blockers (ARBs), beta-blockers, and implantable cardioverter-defibrillator (ICD)/cardiac resynchronization therapy devices (CRT). In addition to these promising therapies, proper nursing care is also important. Here we summarize recent progress of nursing care strategies in older HF patients, including routine nursing care, transitional care model, self-care, and role of exercise training in old patients with HF.

2 Epidemiology of HF

HF is a progressive heart disease which affects a soaring number of people worldwide. In America, over 5,000,000 adults aged 20 and above live with HF, and this number is projected to increase by 46% in 2030.[1] Likewise, approximately 4,000,000 people in China aged 35–74 years suffered from HF.[2] To fulfill that need of the dramatically increasing patients with HF, we need to formalize nursing care in these patients as a manifestation of “patient-centered” care for older adults who now constitute our dominant patient group. Although the concept is still in evolution and lacks a full armamentarium of precise tools and skill sets to define the field, the practice of nursing care in old patients with HF is developing toward a distinctive subspecialty with specific skills and services to further advance the care of older patients (Figure 1).[3]

3 Routine nursing care for old patients with HF

The nurses caring for patients with HF are perfectly positioned to improve patient outcomes. There are several tasks which nurses can take on to improve HF prognosis.[4] Development of patient education materials based on practice guidelines for old HF patients is a key component to ameliorate patient outcomes. Assessment is another important nursing tasks of improving patient outcomes.[4] Nurses also can aid the patient with HF by providing instructions for patients, implementing tele-monitoring programs, and working in quality improvement (QI) programs.[5]

Effective education includes many topics. Patient with HF should be advised to strictly comply with a heart-healthy diet, including sodium control. They also should be taught to follow fluid restrictions. Although the importance of nursing in providing patient education is understood, at least one study indicated that 55% of nurses involved in the study spent only 15 min or less time to provide patient with related education of medications, diet, and activity.

Some tradition exercises such as Tai Chi and Yoga are known to be effective in lowering stress, lessening depression, and increasing physical fitness, which are used as an adjuvant management program for patients with HF. Yoga also may be helpful for routine disease management, prevention of fluid retention, and improve the quality of life for patients with HF. Nurses can integrate yoga into HF care.[7,8]
4 Special issues in nursing care of old patients with HF

4.1 Transitional care model for old patients with HF in China

Because of the complexity of HF, it’s still difficult for patients, even those discharged patients in stable condition to self care, so continued specialized guidance and support are required. Transitional care is an effective approach to improve quality of life, ease the tension of relatively less hospital beds, and reduce national health expenditure. Therefore, to develop transitional care model for HF patients in China has important practical significance. Chen, et al. construct an effective transitional care model of HF old patients in Beijing district. This health care include hospitals providing services to patients, community health center institutions (CHSI) providing services to patients and services jointly provided by hospitals and CHSI.

4.2 Self-care in Chinese older adults with HF

In addition to nursing-care of old patients with HF in hospital, self-care is also important for patients’ recovery. According to medicare administrative statistics, 30-day risk-standardized readmission rates of HF patients were 24.6% in 2010. Approaches to promoting self-care behaviors can decrease HF readmission rates. Currently, supporting and promoting self-care behaviors focus on improving hospital and post-discharge care, including pre-discharge planning, home-based follow-up, medication management and risk behavior and symptom management. Patient-related factors, patient education, and telemonitoring are three major themes of self-care. In the patient-related factors, age-related symptoms, cognitive factors, and social issues were barriers to self-care. The interventions promoting self-care include adequate patient education and telemonitoring. Telemonitoring is an appropriate self-care enhancement tool for selected older adults. More emphasis should be placed to assist older adults with HF in symptom recognition.

In addition, it is reported that type of self-care behaviors is another important factor influencing the prognosis of old HF patients. Cao, et al. found type D personality could affect HF self-care maintenance behaviors. While the self-care management behaviors of these patients may be ascribed to HF knowledge level, self-care confidence, time of diagnosed with HF. Overall, 1.6% and 3.9% of HF patients performed adequate self-care maintenance and self-care management behaviors, respectively, while 12.6% for adequate self-care confidence. For self-care maintenance behaviors, patients performed good adherence to medication, while poor adherence to weight control regularly. More importantly, up to 80.3% of patients would not comply with rule of restricted intake of sodium. In self-care confidence, patients showed more confidence for following doctors’ advice than taking measures to control HF symptoms themselves.

4.3 Exercise training in old patients with HF

Regular aerobic training is reported to increase exercises capacity and cardiac systolic function of patients with HF,
which is strongly recommended in patients with HF. It is reported to improve left ventricular ejection fraction and attenuate symptoms and quality of life. Moderate-intensity aerobic exercise is the best choice for HF patients at one time.\(^\text{14}\) However, another high-intensity aerobic interval exercise (HIIE) has aroused more interest in cardiac rehabilitation recently. HIIE consists of repeated high-intensity exercise interspersed with recovery periods. The rationale of HIIE is to increase high-intensity of exercise, thereby increasing the training stimulus.\(^\text{15}\) Several recent studies have demonstrated that HIIE is more effective than moderate intensity aerobic exercise, especially for improving exercise capacity in patients with HF. In patients with chronic HF, dyspnea and fatigue limit their exercise ability, which lead to progressive deconditioning and exercise intolerance, and a vicious cycle of worsening dyspnea and fatigue. Therefore, it is necessary to improve exercise capacity especially in elder with chronic HF, regardless of age.\(^\text{16}\)

In recent decades, Tai Chi, a form of low-intensity physical activity originating from China, has become popular in Western countries as a priority selection of exercise. Studies have found positive effects of Tai Chi on balance control, flexibility, cardiovascular fitness, pain, fatigue, and insomnia, as well as on psychological well-being—including enhanced mood and reduction of stress, anxiety, and depression—in both community-dwelling healthy participants and patients with chronic conditions.\(^\text{17}\)

5 Future perspectives in nursing care of old patients with HF

An initiative that has recently begun to be studied is tele-monitoring. Readmission rates do show improved outcomes with the implementation of telemonitoring. It has been suggested that most HF readmissions are a result of noncompliance. Therefore, patient education and assessments performed via telemonitoring should revolve around diet, exercise, and medication adherence.\(^\text{18}\) A telephonic interaction that assesses the patient’s weight, exacerbation signs and symptoms, dietary regimen, medication adherence, activities, and social supports can be effective in decreasing complications in patients with HF. This telephonic interaction should stress to patients the importance of compliance to medication regimen, the importance of maintaining their activity level, and the importance of social supports.\(^\text{19}\)

Mobile phone technology might help to increase the cognition of old HF patients for cardiac vascular disease prevention. According to statistics, almost 2 billion people (approximately 28% of all world population) currently use smartphones. The term ‘App’ is an abbreviation of smartphones ‘Application’, from which can download computer program or softwares. It can help provide an opportunity to overcome traditional barriers to receive primary or secondary prevention information and measures. Data from nationwide online surveys suggest that more than 50% of smartphone users acquire health-related information from their mobile phone, and 19% have downloaded a health-related app to their device. As can be seen, health-related App is beneficial for HF prevention education.\(^\text{19}\)

However, not all App is useful for HF prevention information sharing. More than 43,000 health-related Apps exist in the Apple iTunes App Store, and only half the Apps have been downloaded > 500 times. All these indicate a low utilization rate of majority Apps. Therefore, FDA regulates only those Apps that transform the smartphone or tablet into a medical device, or are intended to be used as an accessory to a regulated medical device, for example blood-glucose and blood-pressure monitors.\(^\text{20}\)

To date, only limited studies have focused on nursing-care in older patients with HF. Interventions that specifically considering age-related factors can improve self-care practices. Modifications to current self-care strategies should be implemented for older adults. Addressing patients’ and caregivers’ unique learning needs is an important consideration. Strategies that help older patients and caregivers to identify and attribute meaning to early symptoms of decompensating HF should be instituted. Frailty, a barrier or contributing factor to self-care, needs to be researched.

References

1 McMurray JJ, Adamopoulos S, Anker SD, et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: The Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC. Eur Heart J 2012; 33: 1787–1847.
2 Wang W, Hu SS, Kong LZ, et al. Summary of report on cardiovascular diseases in China, 2012. Biomed Environ Sci 2014; 27: 552–558.
3 Ariely R, Evans K, Mills T. Heart failure in China: a review of the literature. Drugs 2013; 73: 689–701.
4 Prasun MA. New heart failure treatment and nursing care. Heart Lung 2015; 44: 367.
5 Wan H, Yang Y, Zhu J, et al. Prognostic value of ventricular heart rate in patients with permanent atrial fibrillation and heart failure. Int J Cardiol 2015; 182: 70–71.
6 Ogunneye O, Rothberg MB, Friderici J, et al. The association between skilled nursing facility care quality and 30-day readmission rates after hospitalization for heart failure. Am J Med Qual 2015; 30: 205–213.

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7 Davidson PM, Cockburn J, Newton PJ, et al. Can a heart-failure-specific cardiac rehabilitation program decrease hospitalizations and improve outcomes in high-risk patients? *Eur J Cardiovasc Prev Rehabil* 2010; 17: 393–402.
8 Conner D, Barnes C, Harrison-Felix C, Reznickova N. Rehabilitation outcomes in a population of nonagenarians and younger seniors with hip fracture, heart failure, or cerebral vascular accident. *Arch Phys Med Rehabil* 2010; 91: 1505–1510.
9 Chiang LC, Chen WC, Dai YT, Ho YL. The effectiveness of telehealth care on caregiver burden, mastery of stress, and family function among family caregivers of heart failure patients: a quasi-experimental study. *Int J Nurs Stud* 2012; 49: 1230–1242.
10 Chen YH, Ho YL, Huang HC, et al. Assessment of the clinical outcomes and cost-effectiveness of the management of systolic heart failure in Chinese patients using a home-based intervention. *J Int Med Res* 2010; 38: 242–252.
11 Dickson VV, Melkus GD, Katz S, et al. Building skill in heart failure self-care among community dwelling older adults: results of a pilot study. *Patient Educ Couns* 2014; 96: 188–196.
12 Zavertnik JE. Self-care in older adults with heart failure: an integrative review. *Clin Nurse Spec* 2014; 28: 19–32.
13 Cao XS, Chen J, Zou JZ, et al. Association of indoxyl sulfate with heart failure among patients on hemodialysis. *Clin J Am Soc Nephrol* 2015; 10: 111–119.
14 Brum PC, Bacurau AV, Medeiros A, et al. Aerobic exercise training in heart failure: impact on sympathetic hyperactivity and cardiac and skeletal muscle function. *Braz J Med Biol Res* 2011; 44: 827–835.
15 Chrysohoou C, Angelis A, Tsitsinakis G, et al. Cardiovascular effects of high-intensity interval aerobic training combined with strength exercise in patients with chronic heart failure. A randomized phase III clinical trial. *Int J Cardiol* 2015; 179: 269–274.
16 Meyer P, Gayda M, Juneau M, Nigam A. High-intensity aerobic interval exercise in chronic heart failure. *Curr Heart Fail Rep* 2013; 10: 130–138.
17 Pan L, Yan J, Guo Y, Yan J. Effects of Tai Chi training on exercise capacity and quality of life in patients with chronic heart failure: a meta-analysis. *Eur J Heart Fail* 2013; 15: 316–323.
18 Riley JP, Gabe JP, Cowie MR. Does telemonitoring in heart failure empower patients for self-care? A qualitative study. *J Clin Nurs* 2013; 22: 2444–2455.
19 Schwarz KA, Mion LC, Hudock D, Litman G. Telemonitoring of heart failure patients and their caregivers: a pilot randomized controlled trial. *Prog Cardiovasc Nurs* 2008; 23: 18–26.
20 Vuorinen AL, Leppanen J, Kaijanranta H, et al. Use of home telemonitoring to support multidisciplinary care of heart failure patients in Finland: randomized controlled trial. *J Med Internet Res* 2014; 16: e282.