The Journal of Emergency Medicine, Vol. 46, No. 1, pp. 122–129, 2014

0736-4679/$ - see front matter

ELSEVIER

http://dx.doi.org/10.1016/j.jemermed.2013.04.060

Brief Reports

HEART FAILURE BELIEFS AND SELF-CARE ADHERENCE WHILE BEING TREATED IN AN EMERGENCY DEPARTMENT

Nancy M. Albert, PHD, MSN,* Phillip Levy, MD, MPH,† Elizabeth Langlois, MSN,‡ Benjamin Nutter, MS,§ Dongsheng Yang, MS,§ Vijaya Arun Kumar, MD,† Patrick Medado, MS,† and Elizabeth Nykun, MSN||

*Nursing Institute and Kaufman Center for Heart Failure, Cleveland Clinic, Cleveland, Ohio, †Emergency Medicine and Cardiovascular Research Institute, Wayne State University School of Medicine, Detroit, Michigan, ‡Heart Failure Clinic, Morristown Medical Center, Morristown, New Jersey, §Quantitative Health Sciences, Cleveland Clinic, Cleveland, Ohio, and ||Emergency Department, Morristown Medical Center, Morristown, New Jersey

Reprint Address: Nancy M. Albert, PHD, MSN, Nursing Institute and Kaufman Center for Heart Failure, Cleveland Clinic, 9500 Euclid Avenue, Mail Code J3-4, Cleveland, OH 44195

☐ **Abstract—Background: Heart failure (HF) emergency department (ED) visits are commonly due to HF self-care nonadherence. Objective: Our objective was to assess the accuracy of HF beliefs and adherence to self care in patients using an ED for acute HF. Methods: A cross-sectional, correlational study using validated surveys of HF beliefs and self-care adherence was conducted. A multivariable regression model was used to control for significant baseline factors. Results: In 195 adults, mean HF beliefs score was 2.8 ± 0.3, significantly below the accurate cutoff score of 3.0 ($p < 0.001$). Mean HF self-care adherence score was 5.1 (10 reflects best adherence). Of HF-related self-care behaviors, adherence was highest for taking medications without skipping or missing doses (7.8 ± 3.3) and lowest for daily weight monitoring (3.5 ± 3.5). Higher accuracy in HF beliefs was associated with higher education level ($p = 0.01$), younger age ($p < 0.001$), and choosing low-sodium restaurant foods ($p = 0.04$), but not with adherence to other self-care behaviors. Self-care adherence was associated with the belief that the HF care plan must be followed forever ($p = 0.04$), but not with other HF beliefs; and there was a trend toward lower HF self-care adherence when HF belief scores were more accurate. After controlling for significant baseline factors, HF beliefs were not associated with self-care adherence ($p = 0.15$). Conclusions: Patients seeking ED care for decompensated HF had inaccurate HF beliefs and poor self-care adherence. Lack of association between HF beliefs and self care (and trend of an inverse relationship) reflects a need for predischarge HF education, including an explanation of what HF means and how it can be better controlled through self-care behaviors.** © 2014 Elsevier Inc.

☐ **Keywords—heart failure beliefs; self care; adherence; emergency care; sodium in restaurant foods**

INTRODUCTION

Once diagnosed, heart failure (HF) poses a substantial burden to our health care system. Hospital discharges for HF increased 79% between 1996 and 2006, and the American Heart Association estimated direct and indirect costs of HF in 2010 to exceed $39 billion (1). Patients experiencing emergent exacerbation of HF symptoms almost always use a hospital emergency department (ED) to receive care, and 80% who present to the ED are hospitalized (2). Of 115.3 million annual ED visits in 2005, approximately 1.2% (1.4 million) were due to HF symptoms (3). Since emergence of the Centers for Medicare and Medicaid Services' health care reform to reduce HF rehospitalization rates, researchers have learned that rehospitalization could be diminished by pre-empting precipitating events (4). There can be opportunities for

RECEIVED: 2 February 2012; FINAL SUBMISSION RECEIVED: 5 August 2012;
ACCEPTED: 30 April 2013

emergency physicians and nurses to be more proactive in aggressively treating and discharging patients home with a plan to be seen by the primary care physician within 48 h of ED discharge.

Ideally, chronic HF should be managed in an outpatient setting and should not require ED care or hospitalization unless complicated by an acute event, for example, new onset of chest pain or hypertensive crisis. When researchers studied characteristics of patients being treated in an ED for decompensated HF, breathing difficulties predominated (88% of subjects), followed by chest discomfort (35%) and fatigue (16%) (5). Patients also reported problems with memory, lack of knowledge regarding self administration of medications, and lack of willpower in following diet recommendations (5). Goals of ED treatment include relieving dyspnea, balancing hemodynamics, achieving euvolemia, and avoiding harm (2). Despite the impact of symptom burden on ED utilization, management of issues that contribute to acute decompensation, such as dietary and medication nonadherence, are often deferred to the inpatient setting. Inattention to adherence to the plan of care and issues associated with nonadherence can be a missed opportunity to improve patient and caregiver understanding of HF and HF self-care expectations. In addition, attention to interventions that promote adherence to the plan of care could minimize future acute decompensation episodes and reduce the need for ED care and subsequent hospitalizations.

Higher accuracy of illness beliefs about HF, especially "control" beliefs, could lead to self-care maintenance behaviors, such as dietary sodium restriction, daily weight monitoring, regular physical activity, and early symptom recognition. However, little is known about the HF-related illness beliefs and adherence to basic HF self-care maintenance expectations in patients with acutely decompensated HF being treated in an ED setting. The objectives of this study were to examine patients' accuracy of HF illness beliefs using the Common Sense Model of Illness and adherence to HF self-care expectations, and to determine if demographic factors and self-care behaviors in the 2 weeks before ED care were associated with accuracy of HF illness beliefs.

METHODS

Using a cross-sectional design and convenience sampling, stable patients were recruited from the EDs of three large urban health care centers in Cleveland, Ohio, Detroit, Michigan, and Morristown, New Jersey, after treatment had begun. Patients were included if they had a history of chronic HF of any etiology or type (systolic HF or HF with preserved ejection fraction), were diagnosed with acute decompensated HF by the attending emergency physician, and were willing to participate. All patients provided informed consent and the Institutional Review Boards of each hospital approved the study.

The HF illness beliefs survey was based on the Common Sense Model of Illness theoretical model (6). In the common sense model, illness representations, defined as mental images an individual forms regarding the danger or threat of a medical disorder, lead to goals for coping and self-care behaviors (7). Illness beliefs form a representation of health threat and emotion regarding the illness (6). Illness beliefs are created from exposure to everyday stimuli, such as communication with family, friends, and health care providers; information from television, radio, journals, medical handouts, websites, and other media; past experiences; and sensations and symptoms (7). Illness belief attributes include identity (what the label *heart failure* means, the perceived seriousness of HF, and symptoms or sensations), timeline (acute or chronic course), consequences (short- and long-term effects), and control (what can be done to control it). Accurate HF illness beliefs reflect the understanding that HF is a serious, chronic, incurable condition that persists even when no symptoms or sensations are present. The control attribute of illness beliefs, when accurate, reflects that patients cope with HF by controlling their treatment plan, specifically by implementing HF self-care behaviors. The concept of illness beliefs is different than the concept of knowledge. Although accurate or inaccurate knowledge can be one form of stimuli that informs an illness belief, an illness belief is part of an information processing model. Stimuli that construct illness beliefs create a level of danger or threat that determines how people will cope.

Adherence to self-care maintenance behaviors was based on Riegel et al.'s definition of HF self care as a naturalistic decision-making process in which decision making is influenced by the situation, the patient's perspective of the situation, and information available at the moment (8,9). Maintenance behaviors are those completed routinely, usually on a daily basis, as a way to maintain HF-related health. Specific self-care maintenance behaviors of interest (i.e., activity level, diet, following the medication plan of care, and weight monitoring) were derived from long-standing HF-related self-care behavior themes in the literature that continue to be the focus of hospital discharge performance measures by the Joint Commission, and hospital and ambulatory performance measures by the American College of Cardiology/American Heart Association (10,11). Maintenance behaviors are everyday actions and monitoring activities aimed at reducing or preventing worsening of symptoms.

Measurement and Data Collection

In the 2 weeks before ED care, patients completed three surveys: demographics, accuracy of HF illness beliefs,