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Review Article

Self-care and quality of life outcomes in heart failure patients: An enlightening review

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Abstract

Heart failure is one of the new epidemics of cardiovascular diseases in the 21st century. It has emerged as an important health problem all over the world, especially in India, with better life expectancy, increased incidence of coronary artery disease and improved survival after acute myocardial infarction. Many common clinical problems encountered in patients with heart failure remain unresolved. The optimal care for patients with heart failure awaits further research. It requires lot of modification in self-care behavior and patients require learning. Nurses play a vital role in the process of health education. The perceptions of individuals affect their self care outcomes. Thus, perceived learning needs form the basis for successful planning and implementation of any educational intervention especially in case of heart failure..

Keyword: Heart failure, cardiovascular disease, self-care behavior, self care outcomes.

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1. Introduction

Heart failure is referred to as one of the new epidemic of cardiovascular diseases in the 21st century. It has emerged as an important health problem all over the world, especially in India, with better life expectancy, increased incidence of coronary artery disease and improved survival after acute myocardial infarction. Many common clinical problems encountered in patients with heart failure remain unresolved. The optimal care for patients with heart failure awaits further research [1].

Heart failure is not a disease in itself. It is a condition in which a problem with structure or function of the heart impairs the ability to supply sufficient blood flow to meet the body's needs. It should not be confused with cardiac arrest. The common causes of heart failure include myocardial infarction, other forms of ischemic heart disease, hypertension, valvular diseases and cardiomyopathy. A variety of symptoms are seen in such patients depending upon the "left sided" or the "right sided" failure. These include shortness of breath, coughing, ankle oedema and reduced exercise capacity. The treatment of heart failure includes modifications in lifestyle and sometimes devices or even surgery [2].

Heart failure is a common, costly, disabling and deadly condition. It is associated with high health expenditure and reduced physical and mental health, resulting in a significant decrease in the quality of life. The re-hospitalization rate is very high for patients with heart failure as compared to other chronic illnesses and 20-60% of hospital admissions of patients with heart failure are related to poor compliance with prescribed regimen [3].

Advanced heart disease like chronic illnesses, trouble the entire family. Even if many people recover, they may not regain their previous level of functioning. The people with heart failure may need help with daily chores like fixing food, getting dressed, running errands and housekeeping. At some point the helper and caregivers often become involved in providing health care support such as managing medication and coordinating physician visits [4].

Thus, heart failure is a disease where the patients have to live with its burden and requires a change in their lifestyle and the patients also need to be educated. Health care providers play a vital role in catering to the health needs of patients with heart failure.

In developing countries, around 2% of adults suffer from heart failure, but amongst over the age of 65, this increases to 6-10% [5, 6]. Mostly due to costs of hospitalization, it is associated with high health expenditure; costs have been estimated to amount to 2% of the total budget of the National Health Service in the United Kingdom, and more than $35 billion in

the United States [7, 8]. Heart failure is associated with significantly reduced physical and mental health, resulting in a markedly decreased quality of life [9, 10]. With the exception of heart failure caused by reversible conditions, the condition usually worsens over time. Although some patients survive many years, progressive disease is associated with an overall annual mortality rate of 10% [11].

Table no 1. Different categories of heart failure

S N	Different categories of heart failure
1	The side of the heart involved, (left heart failure versus right heart failure)
2	whether the abnormality is due to contraction or relaxation of the heart (systolic dysfunction vs. diastolic dysfunction)
3	whether the problem is primarily increased venous back pressure (behind) the heart, or failure to supply adequate arterial perfusion (in front of) the heart (backward vs. forward failure)
4	whether the abnormality is due to low cardiac output with high systemic vascular resistance or high cardiac output with low vascular resistance (low-output heart failure vs. high-output heart failure)
5	The degree of functional impairment conferred by the abnormality (as in the NYHA functional classification)

In heart failure due to abnormality of the heart muscle, the clients suffer from symptoms of fatigue, especially with exertion, and dyspnea. Such a condition requires management by the health care professionals. It includes educating the patient regarding signs and symptoms of the disease, appropriate methods for diagnosis and treatment and any modifications that must be made in the lifestyle. The modification includes various aspects of self care behavior such as adherence to the medication, diet, physical activity, daily weighing, prevention and early detection of complications. The self care also refers to things such as regular follow up with the health care facility and seeking assistance when symptoms occur. This requires a lot of compliance from the patients. An equal responsibility rests on the nurses being the primary caretakers. The effective self management of the patient is interplay between the patients' practices and the education they receive from the nurses.

Evidence suggests that self care behavior is not modified in spite of the inputs by the nurses. A study was conducted with an aim to describe self care behavior of patients with heart failure, to test the effect of education and support on self care behavior and to discuss limitations. Data was collected from 128 heart failure patients during their hospital stay and at 1, 3 and 9 month follow-ups. The effects of intensive systematized and planned education from a nurse in hospital and at home were evaluated in an experimental design. Results showed that education enhanced self care behavior significantly in 1 to 3 months after discharge. Despite intensive education and support, patients did not manifest all self care behaviors that might be expected. Patients in both the intervention and control groups described limitations in knowledge, judgment/decision-making and skills [12].

The perceptions of individuals affect the self care outcomes. Perception comes from the Latin word perception, meaning "receiving, collecting, and action of taking possession, apprehension with the mind or senses." [13]. what one perceives is a result of interplay between past experiences, one's culture and the interpretation of the perceived. If the percept does not have support in any of these perceptual bases it is unlikely to rise above perceptual threshold. The processes of perception routinely alter what humans see. When people view something with a preconceived idea about it, they tend to accept those preconceived ideas and see them whether or not they are there. This problem stems from the fact that humans are unable to understand new information, without the inherent bias of their previous knowledge. The extent of a person's knowledge creates its reality as much as the truth, because the human mind can only contemplate that which it has been exposed to. When objects are viewed without understanding, the mind will try to reach for something that it already recognizes, in order to process what it is viewing. That which most closely relates to the unfamiliar from our past experiences, makes up what we see when we look at things that we don't comprehend.

Learning is acquiring new knowledge, behaviors, skills, values, preferences or understanding, and may involve synthesizing different types of information. A learning needs assessment is an important component of developing effective patient education. Once educational opportunities have been identified, it is important to prioritize the most vital learning needs that are required to modify behavior and improve outcomes**.** Theories on adult education consistently state that adults will devote energy to learn something in proportion to how they perceive it will help them perform tasks or deal with problems that they are currently being confronted with. Thus, it is vital that any educational topic that is identified is conceptualized in a framework that highlights the patient's needs rather than the interests of the healthcare team. For example, the needs assessment finds that the patient does not understand the ramifications of anemia. A nurse who is interested in physiology may want to provide an overview of red blood cell physiology. Many patients may find such a topic uninteresting or not particularly applicable to their personal situation. In contrast, a nurse who knows that a patient is very interested in improving his/her

quality of life will be more likely to motivate patient's interest if the educational session focuses on how to improve quality of life by avoiding anemia. This concludes that the plan for education should account for individual patient characteristics that may affect the learning process, such as age, gender, race/ethnicity, culture, religious orientation, socioeconomic status, vision or hearing problems, and language/ dialect [14].

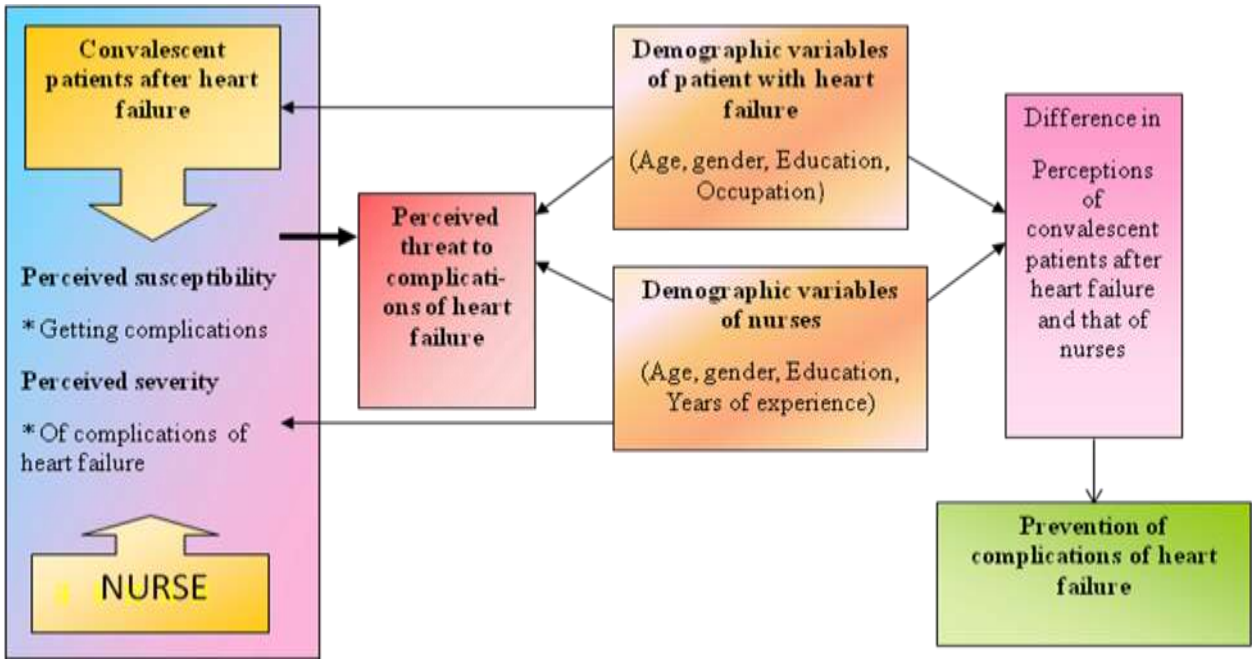

Figure no 1: Conceptual framework based on modified health belief model

Table no 2. Self-care and quality of life outcomes in Heart failure patient's requirements

SN	Heart failure patient's requirements
1	Learning needs of patients and nurses' role
2	Patient satisfaction and health education
3	Generalized patient studies
4	Studies on learning needs of cardiac patients
5	Studies on learning needs with reference to patients with heart failure

Learning needs of patients and nurses' role

The role of educating others is one of the essential interventions that the nurse performs. In a variety of settings, nurses are responsible for patients, families, nursing staff and nursing students. Numerous factors make the educator's role particularly challenging in meeting the information needs of these various groups of learners. The changing health care trends and population demographics necessitate the nurse educator to constantly assess the determinants of learning for the varied audience of learners whom they have the responsibility to teach. To meet these challenges the nurse educator must be aware of the factors which influence learning of the individual learner. The learner and not the teacher is the single most important person in the education process.

Learning can be greatly enhanced by the educator by serving as a facilitator in helping the learner become aware of what needs to be known, the value of knowing, and how to be actively involved in acquiring information. Just providing information to the learner however does not ensure that learning will occur. There is no guarantee that the learner will learn the information given. But always there is more of an opportunity to learn if the educator assesses the determinants of learning [15].

An assessment of these determinants enables the educator to identify information and present it in a variety of ways, which a learner cannot do alone. The educator is vital in giving support, encouragement and direction during the process of learning.

Assessing Learning needs

Learning needs are defined as gaps in knowledge that exist between a desired level of performance and the actual level of performance. A learning need is the gap between what someone knows and what someone needs or wants to know. Such gaps exist due to lack of knowledge, attitude and/or skill. Of the three determinants, learning needs must be identified first so that the instructional plan can be designed to address

any deficits in the cognitive, affective or psychomotor domains. Once it is discovered what needs to be taught, a determination can be made about when and how learning can most optimally occur.

Not every individual perceives the need for education. Often learners are not aware of what they don't know or want to know. The learner needs to be assisted for identification, clarification and prioritization of needs. This information can be helpful to set the objectives and plan appropriate and effective teaching and learning approaches for education. The learner's basic needs are attended first and foremost before the higher needs can be met. For example, learning about a low-sodium diet will not occur if the patient faces problems with basic physiological needs such as pain and discomfort. These latter needs must be addressed before any other higher order learning needs.

Setting priorities for learning may be difficult when the nurse educator is faced with many learning needs in several areas. An effort to prioritize the needs will help the nurse and the patient to set realistic and achievable learning goals.

Figure 2: Maslow's hierarchy of human needs

In order to foster maximum learning, the learning needs must be prioritized based on the following criteria:

(I) *Mandatory*: Needs that must be learned for survival or situations in which the learner's life or safety is threatened. Learning needs in this category must be met immediately. For example, a patient with a recent episode of heart attack needs to know the signs and symptoms and when to get immediate help. The nurse who works in the hospital must learn how to do cardiopulmonary resuscitation.

(II) *Desirable*: Needs that are not life dependent but are related to the well-being or the overall ability to provide quality care in situations involving changes in institutional procedure. For example, it is important for patients who have cardiovascular disease to understand the effects of a high-fat diet on their condition. It is desirable for the nurses to update their knowledge by attending an in-service program when the hospital management decides to focus more attention on the appropriateness of patient education materials in relation to the patient populations being served.

(III) *Possible*: Need of information that are nice to know but not essential or required or situations in which the learning need is not directly related to daily activities. For example, the patient who is newly diagnosed to have Diabetes Mellitus most likely does not need to know about travelling across the country as this information does not affect his or her daily activities.

All learners need not know everything; a discrimination may be necessary between a 'need to know' and 'nice to know' information [15] (Fig NO 01).

Learning needs assessments

A learning needs assessment describes the opinions of the learners regarding what information they want to learn, or what educational topics they believe are important [16]. Learning needs assessment has a fundamental role in education and training. The literature suggests that, learning is more likely to lead to change in practice when needs assessment has been conducted. The education is linked to practice, personal incentive drives the educational effort, and there is some reinforcement of the learning. Learning needs assessment is thus crucial in the educational process. Studies that investigate perceived learning needs are different from those that assess a person's level of knowledge related to a topic. A learning needs assessment describes the opinions of the learners regarding what information they want to learn, or what educational topics they believe are important.

Preferred learning styles

People have different approaches to learning and have distinct preferences for certain methods of receiving new information. Learning style refers to the ways individual learners' process information. Learning

styles are often categorized as auditory, visual, and tactile. Learners should be given the opportunity to learn through their preferred style; education offered in their preferred learning style is more likely to lead to successful learning and increases learner satisfaction [17].

Incongruence of patient and provider-identified learning needs

Several of the studies describing the perceived learning needs of cardiac patients discussed previously also compared the information needs identified by cardiac patients with those identified by their caregivers. The patients and their caregivers, usually nurses and/or physicians, often assigned significantly different levels of importance to educational topics, which led researchers to conclude that providers do not always correctly identify patients' learning needs [17].

From the above it can be stated that the nurse should have a fair judgment of the patient's learning needs and learning needs assessment has a fundamental role in education and training of the patients.

Patient satisfaction and health education

Patient education typically refers to didactic, classroom-based educational activities. Knowles' theory of adult learning states that learners will more readily learn, retain, and apply information they value and identify as needed. These information needs and skills the patient identifies as valuable and important to learn are perceived learning needs. Life-saving measures are allowing people to live longer than before. Now that people are living longer they seek information for health promotion and maintenance. People are becoming more inquisitive about their own health issues. It is seen that people are more keen to know what is wrong with them, what is done to treat them and why is it done. Thus, it is a challenge for the nurses to see that they are providing the right information at the right time to the right person. When the client is in hospital, the satisfaction of the client is dependent on the education received by them. The time when the patient requires maximum education is during the time of discharge as he has to get ready for the care at home in the absence of the professional care takers in the hospitals. The client may feel less confident of himself if his queries are not satisfied. Thus patient satisfaction is of utmost importance [18].

A Finish study on 39 patients described patient education from the perspective of patients with arthritis by utilizing quantitative and qualitative methods. It was seen that 70% of subjects were satisfied about the amount of patient education they received. However they felt that there was inadequate information on side-effects of medication, diet, mental support and sexuality. Most of the patients (56%) felt that patient education was based on their needs. The major problem was to get mental support and to have opportunities to discuss one's feelings. Individual education was appreciated the most. The effect of patient education was better coping at home, better capacity for self-care and a better quality of life [19].

To identify patient satisfaction of their discharge preparation in a 637- bedded university teaching hospital. The researchers also wanted to identify the nurses' perceptions of quality to that of the patients. One hundred sixty one patients responded of the 384 surveys sent to cardiology patients one week after discharge. The overall satisfaction rates were 32 to 89 percent; the overall importance rates were 71 to 96 percent. These patients identified areas of discharge planning and teaching that were important such as ways to relieve chest pain and shortness of breath, when to resume physical activities, management of stress, the signs and symptoms to monitor at home, how to deal with recurrent signs and symptoms, and explanations to loved ones of how to deal with an emergency. The nurses identified that the most important factor to be assessed in discharge planning was the patient's readiness to return home. The study also showed that patients felt the nurses and other members of the healthcare team did not address their educational needs during hospitalization. Discharge planning should incorporate assessment of educational needs to assure that these needs are being met [20].

Education can benefit patients in many ways. The researchers conducted an exploratory study to identify the differences in patient satisfaction with their clinical visit. The sample included 205 patients. The patients surveyed in the study were divided into two groups, those who received education while in the waiting room and those who did not receive any form of education. These educational interventions consisted of the patient being shown an educational video concerning the health topic related to that individual and interactions with the nurse. The tool implemented into this study to measure patient satisfaction was the Patient Visit Rating Questionnaire (VRQ). The VRQ was a 10-item survey distributed to the patients at the time of check out of the clinic. This questionnaire was designed to measure patient satisfaction with a single clinical visit. Out of a possible score of 50, the educational group had a mean score of 35.09 and the non-educational group had a mean score of 35.93. Although the results showed no significant differences in the VRQ scores, the results of the study concluded that there were significant differences in patient satisfaction between the educational group and the non-educational group, with the educational group reporting more satisfaction. The mean score of patient satisfaction of the patients in the educational group was 4.21 and the non-educational groups mean score was 3.57. The researchers concluded from the results that teaching should be a part of everyone's healthcare and overall it benefits the patient [21].

The above said studies were carried out by focusing on patient education. It can be seen that by collaborating

effectively with patients who have chronic disease leads to a kind of care that increases adherence, improves outcomes and promotes better quality of life [22].

Studies on learning needs of cardiac patients

Research aimed at exploring the perceived learning needs of patients began in 1984 with a study conducted by Gerard and Peterson. They studied patients diagnosed with Myocardial Infarction to assess their perceived learning needs, and to examine the congruency of nurses' perceptions. Two questionnaires were used to obtain data: The Cardiac Patient Learning Needs Inventory (CPLNI), and the Educator Preference Tool. Each instrument was created by Gerard and Peterson specifically for this study. The CPLNI was used to rank 43 items on a 5-point scale from "not important" to "very important" which were divided into eight specific topic areas. The eight areas of concern were: introduction to the CCU, cardiac anatomy and physiology, risk factors, medication information, dietary information, psychological factors, activity recommendations and a miscellaneous category. The miscellaneous category included things such as when to call the doctor, how to take a pulse, symptoms of angina and congestive heart failure. The CPLNI questionnaire was administered to patients and nurses to compare their perceptions. The Educator Preference Tool examined cardiac patients' perceptions of nurses as teachers. The instrument contained the same list of informational items as those on the CPLNI but asked the patient who they believed could teach the material. This classic study had a sample of 31 patient's viz., 16 in-patient and 15 post discharges. The results indicated that cardiac patients (and nurses) found all eight categories to be important to learn. Both in-patients and patients discharged from the hospital considered risk factors the most important to learn. All other areas were ranked differently for both groups of patients. Nurses ranked medications the most important, indicating a potential conflict between what patients and nurses consider being important. The conclusions of this study serve as a basis for nurses to determine patient needs prior to beginning education for cardiac patients [23].

Studies on learning needs with reference to patients with heart failure

Patients with chronic or severe illness react differently to the loss of functional abilities or the life style modifications necessitated by their conditions. Some patients resent being frail or disabled and express a loss of zest for life that makes the effort of living weigh heavily on them. Patients with long-term or chronic diseases, such as Heart Failure, may fall into this category. Heart failure (HF) is a common and progressive clinical condition that can substantially impair quality of life.

A dissertation to examine the psychometric properties of the Minnesota Living with Heart Failure Questionnaire (LHFQ), an instrument with a total scale scores; identify variables associated with health related quality of life (HRQOL) and determine gender differences in HRQOL. Six hundred and thirty eight patients and a subgroup of one hundred ninety six patients were included. The results of the psychometric tests provided additional support. The results of the factor and item analyses suggested that rewording or elimination of several items may improve the reliability and validity of the LHFQ and provide researchers and clinicians with a more useful measure of HRQOL in patients with heart failure. The dependent variables included health perception, symptom status, New York Heart Association classification (NYHA) and age. Women reported worse HRQOL than men. The most influential variables associated with the scales of LHFQ were health perception and symptoms status [24].

Education of patients was an integral component in reducing hospital readmissions for patients with heart failure and in improving patients' quality of life. An effort was taken to describe the use of a card sort method for determining the learning needs of patients with heart failure and the ability of nurses and physicians to accurately predict patients' self-determined needs. Thirty patients were asked to sort 12 cards with questions related to the content of discharge teaching for patients with heart failure. The nurse and the physician caring for each patient were instructed to sort the cards independently to characterize the learning needs of the patient. It was seen that patients most often selected the following as the most important educational topics: What is wrong with my heart? What is the future of my disease? And how will I know if my heart failure is getting worse? Physicians selected the identical top question as their patients did 17% of the time. Physicians matched any of their patients' top three choices 34% of the time. Questions selected as most important by patients were chosen by physicians as least important 13% of the time. Nurses chose the same top question as their patients did 23% of the time. Nurses matched any of their patients' top three choices 34% of the time. Nurses selected opposite choices from those of their patients 6% of the time. The card sort method was an effective tool to ascertain the individual learning needs of patients with heart failure [25].

A research was conducted in Toronto General Hospital, Toronto, Ontario with an objective to increase differentiation between patients' ratings of information needs by modifying the Congestive Heart Failure (CHF) Patient Learning Needs Inventory and examined [26].

The above studies explored the various learning needs of the patients with heart failure and that of the nurses. The nature of illness makes it a crucial area of study. The severity of the illness and type of care determines

the perceptions on the learning needs of the patients. The studies have illustrated differences in the ranking of the learning needs by the patients and health care providers. A few studies have attempted to compare the perceptions across the demographic characteristics of the group under study.

Conclusion

From the study it can be concluded that the perceptions regarding the learning needs of convalescent patients after heart failure and staff nurses need to be valued. The study's results have added to the nursing knowledge base that such patients and nurses continue to have medication information as top learning need. But the other learning needs do not match with the other rankings given by the nurses and patients. Incorporation of the learning needs in the health education especially before the discharge is thus crucial for the effective education of convalescent patients with heart failure. This study will help you to find what the exact happened in heart failure as well as after heart failure. Patient and nurse interaction, **s**elf-care, and quality of life outcomes in Heart failure patient.

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