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A Critical Analysis of Care of a Patient with Heart Failure, Focusing on the Rehabilitation Process

Mekonnen, H.S.*

Department of Medical Nursing, School of Nursing, College of Medicine and Health Sciences, University of Gondar, Ethiopia Habtamu Sewunet Mekonnen, Ethiopia

Abstract:

Background: Most patients with congestive heart failure (CHF) will need to learn to live with the condition. Approximately two thirds of people with CHF die within five years of their diagnosis. However, some patients live long lives with CHF by making lifestyle changes and taking medications. Provision of appropriate rehabilitation care for the patient with CHF will significantly reduce the number of unplanned readmissions, length of hospital stay, hospital costs and mortality.

Aim: The main purpose of this study was to assess the rehabilitative care of a patient with heart failure.

Findings: in this rehabilitation case study; cardiac, psychosocial, physiotherapy/physical, nutritional, and recreational therapy/rehabilitation were found imperative interventions to improve the life quality of individuals with heart related problems particularly for heart failure.

Conclusion: Efficient rehabilitation of patients with heart failure needs willingness and involvement of family members, friends and to some extent the community as well. Since nurses have frequent contact with patients and family members, they are supposed to play the central roles on the care by coordinating different disciplines together.

Keywords: Heart failure; Rehabilitation; Hospitalization

Introduction

Background

Cardiovascular disease (CVD) in its various forms is the leading cause of death worldwide, ranking first in both developing and developed nations. The total number of annual deaths due to CVD is more than 17 million, approximately 29% of all deaths. According to the most recent World Health Organization (WHO) data, more than 80% of all CVD deaths occurred in developing countries compared to developed countries. Among cardiovascular diseases CHF becomes the most common reason for hospitalization in elderly and the rate of readmission to the hospital remains remarkably high[1].

Most patients with congestive heart failure (CHF) will need to learn to live with the condition. Approximately two thirds of people with CHF die within five years of their diagnosis. However, some patients live long lives with CHF by making lifestyle changes and taking medications[2].

Provision of appropriate rehabilitation care for the patient with CHF will significantly reduce the number of unplanned readmissions, length of hospital stay, hospital costs and mortality[3].

Therefore, this rehabilitation essay concerning on patient's experience of living with CHF. Accordingly essay would describe assessment of patient with scientific evidences included psychosocial intervention, dietary therapy, physiotherapy and recreational therapy. Eventually concluded and recommended based on evaluation of care given to patient as well as families/attendants/.

Case description

Mr. X was a 58 years old male, married, orthodox Christian patient working on construction. This is a known cardiac patient for the last 9 months and currently presented with difficulty of breathing. Associated with this he had worsening of cough and chest pain since 1 week. He also complained low grade intermittent fever, intermittent vomiting and poor appetite, difficulty of sleeping and swelling of both legs. On physical examination he looked chronically sick and

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***Corresponding author:** Mekonnen, H.S., Department of Medical Nursing, School of Nursing, College of Medicine and Health Sciences, University of Gondar, Ethiopia Habtamu Sewunet Mekonnen, Ethiopia, E-mail: habtsew@ymail.com

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seems very emaciated, restless, and anxious. He was diagnosed as NYHA class IV CHF 2º to dilate cardio myopathy precipitated by severe CAP ruled out infective endocarditis.

Cardiac Rehabilitation

Cardiac rehabilitation (CR) refers to the provision of a wide range of secondary prevention services to patients with cardiovascular disease. Although exercise training is a core component of any CR program, modern comprehensive CR programs provide a comprehensive approach to disease modification including risk factor modification, psychosocial care, nutritional counseling, weight management, psychosocial management and so on[4].

Psychosocial Rehabilitation

The psychosocial support offered by the cardiac rehabilitation is not a delimited component of rehabilitation but is part of the overall services. In addition to the structured, individual counseling, psychosocial support plays a key role in the informal discussions between patients and practitioners, such as in exercise training, where social interaction is essential. Effective pharmaceutical treatment of symptoms can similarly be considered part of psychosocial support, since this is important in treating any depression or anxiety that develops in association with heart disease[5].

Even though, complete avoidance of stress is difficult and having a diagnosis of CHF tends to increase anxiety; the patient was advised to minimize stress by taking time to relax every day, getting plenty of rest, trying to maintain a positive disposition, joining a support group or talking regularly with his friends or family members. Evidences supposed patients with CHF to avoid stressful situations just before deterioration of the heart condition[6].

Due to shortness of breath and fatigue this patient had fear and physical restriction. These lead him to limited capacity to participate in social events, limited opportunities to socialize with friends and families. Thus to reduce the impacts of social isolation, he was received psychosocial advise and counseled to avoid extreme fears and physical restrictions on socialization. A qualitative study of BMC health services research confirm that struggling of CHF patients with isolation was an ongoing problem for patients, not only due to physical limitations but due to feeling of neglected or let down by family and friends[7].

The patient has been experienced fatigue, trouble sleeping and loss of interest in activities, inability to concentrate feelings of hopelessness and change in appetite. These symptoms were pointed out presence of depression. With the intention of this the patient needs cognitive therapy like incorporated education, processing and reorganizing thoughts to create a healthier outlook on the disease state, and a behavioral component that involves resuming previously enjoyed activities. A patient's guide to living confidently with chronic heart failure (2013) expresses such cognitive therapy as crucial to control depression[8].

Deteriorated quality of life, depression and anxiety have harmful effects not only on daily social, domestic, work and leisure activities but also on re-hospitalization and death rates. In order that, the patient was advised to improve his quality of life and to avoid anxieties or stresses. The systematic review and Meta analysis study showed that the presence of improvements in hospitalization and health-related quality of life, suppression of anxieties and stresses and reduction of mortality were appeared as a consequence of exercise-based cardiac rehabilitation[10].

The following are some of psychosocial adjustments needed to control depression, anxiety and behavioural risk factors[10].

- ✓ Concerns about the meaning and impact of symptoms
- ✓ Disbelief and non acceptance of cardiac problem
- ✓ Health beliefs and catastrophic interpretations about impact of cardiac disease on their lives and in the future
- ✓ Coping and engaging in everyday activities
- ✓ Adherence to treatments
- ✓ Modifying behavioural risk factors smoking, alcohol.
- ✓ Changes in roles, relationships and interactions with other people

The re-emergence or intensification of pre-morbid psychological difficulties

Physiotherapy / physical aspect of rehabilitation

The17th annual scientific meeting of the heart failure society of America (2013) recommended the following aspects of physical therapy[11].

- Stabilize symptoms first. Take medications as prescribed, and only exercise when feeling well.
- Conserve energy. Rest often between activities to maintain energy levels.
- Pull rather than push. Pulling items burns less energy than pushing the
- Work at waist level. Keep often-used items, such as the coffee maker or hairdryer, easily accessible to avoid reaching and bending.
- Schedule time. Maintain a daily calendar to ensure time for exercise
- Do heavier work in morning hours. Limit large tasks too early in the day, after a good night's rest.
- To avoid overtaxing the body, allow time for digestion, and do not eat and then immediately exercise.

Even though this 58 years old patient could not tolerate a full volume of exercise protocols, he was advised to do simple aerobic-type activities such as walking, stationary cycling, or simple jogging. The study in American college of cardiology reviled that cardiac exercise training would be significantly improved clinical symptoms and enhanced quality of life[12]. And the study on the effect of cardiac rehabilitation showed that an 8 weeks aerobic exercise program improved the anxiety and depression level of patients with CHF[13].

Doctors hand book states that increasing physical activity is universally recognized as a desirable lifestyle modification for improving cardiovascular health. These include improved physical capacity, quality of life, endothelial function, serum catecholamine levels, morbidity and hospital re-admission rates, and improving resting cardiac function[14].

To maintain an active lifestyle, and consequently lower future cardiovascular risks it is important involving in strength training. This would increase muscle strength and strength endurance, resulting in a reduction of activity limitations and increased participation[15].

Exercise in patients with heart failure has multiple benefits including improvement in the muscle tolerance to exertion,

neuro-hormonal changes that favor cardiac hemodynamic and overall improvement of symptoms of HF. Moreover, it decreases the number of admissions to the hospital and improves survival in patient with HF[16].

The patient was informed to achieve realistic and sustainable levels of physical activities. A guideline for the prevention, detection and management of chronic heart failure in Australia (2011) recommended that physical activities to be tailored to the individual patient's capacity and may include walking, exercise bicycling, light weightlifting and stretching exercises as well to walk at home for 10–30 minutes/day, five to seven days a week. Along with this it recommended to not exercise to a level of preventing normal conversation. The guideline also indicates that physical activity has been shown to improve functional capacity, symptoms and neurohormonal abnormalities among patients with CHF[17].

Based on Giakoumidakis K. literature review study, exercise training is the core component of comprehensive CR, has been associated with improved patient peak oxygen consumption during exercise and exercise tolerance, improved skeletal muscle metabolism, blood flow, vasodilator capacity and endothelial function and decreased oxidative stress. In addition, the evidence suggests that comprehensive CR in CHF patients improves New York Heart Association (NYHA) functional class, reduces all case and cardiovascular mortality by 35%, reduces hospital admissions, improves quality of life and self-care behavior, reduces anxiety, depression symptoms and is a well-documented cost-effective healthcare service[18].

Nutritional Rehabilitation

Nutritional counsel was given to the patient and his attendants for the sake of understanding impacts of food on his health and to help him on healthy food choices. General dietary recommendations for cardiac patients include a reduced intake of saturated fats (< 7% of total calories) and cholesterol (< 200 mg/d), increased intake of polyunsaturated (about 10% of total calories) and monounsaturated fats (20% of total calories), an adequate repartition of calorie sources (about 50-60% of total calories for carbohydrates, 15% for protein and 25-35% for fat) and increased fiber intake (about 20-30 g/d)[19].

If a patient eat too much salt or drink too much fluid, the body's water content may increase and make the heart work harder. This can worsen CHF. As a result patient was advised to decrease salt intake and to take salt free diets. University of California San Francisco medical center recommends good low-sodium diets like fresh fruits and vegetables, fresh meats, poultry, fish, dry and fresh legumes, eggs, milk and yogurt, plain rice and pasta with salt content less than 350 milligrams for each serving[20].

The American Heart Association recommends that patients with CHF to limit their intake of sodium to 2,300 milligrams. This is approximately equal to one teaspoon of sodium per day. Cholesterol intake also would be limited to approximately 300 mg, with a total fat intake of approximately 65 mg and saturated fat intake of 20 grams. Patients also advised to avoid excessive intake of fluids like water, soup, milk, coffee, tea, and alcohol[21].

The Cleveland clinic website recommends decreasing the total amount of sodium consumes to 2,000 mg (2 g) per day as the most important ways to manage heart failure and to eat foods that are high in potassium such as: bananas, dried fruits, potatoes, avocados, tomatoes, nuts and whole grains[22].

The study on contribution of changes in diet, exercise, and stress management to men in the multisite cardiac lifestyle intervention program indicates; improvements in dietary fat intake, exercise and stress management were individually, additively and inter-actively related to coronary risk and psychosocial factors. This suggested that multi component programs focusing on diet, exercise, and stress management would benefit patients with heart disease[23].

Although medications are important in the management of heart failure, dietary and lifestyle changes are essential and recommended to all patients with CHF(16).

Some of the recommendations are:

- Smoking Cessation
- Dietary restriction of sodium to approximately 2 to 3 grams per day (less in some cases) to decrease fluid retention
- Restriction of alcohol consumption to 1 to 2 standard drinks in men and 1 in women
- Indefinite abstinence from alcohol consumption ,if alcohol is thought to be the culprit of the heart failure
- Daily weight monitoring to detect early fluid accumulation before symptoms develop in order to prevent the need for hospitalization
- Obese people with heart failure should be encouraged to lose weight, with the target goal of weight within 10% of lean body mass
- Routine modest aerobic exercise in stable patients, preferably in a cardiac rehabilitation program

Recreational therapy

Certified therapeutic recreational specialists use various recreation and leisure activities as a form of treatment to restore or improve physical, cognitive, social, and emotional functioning. These activities would address the goals that the therapist has in place through leisure participation, education, and community re-integration. Therapeutic interventions may address one particular goal or attend to numerous goals simultaneously. Recreational therapy provides opportunities to learn new skills adapt old ones and enjoy new leisure experiences. The purpose of leisure education is to assist participants in eliminating or reducing barriers to enjoyable leisure participation. It aims to prepare or enable individuals to enhance the quality of their lives through individually selected patterns of recreation and leisure involvement. Healthy leisure values and attitudes, adequate social interaction skills, knowledge of leisure resources and their utilization, and a sufficient base of leisure activity skills are all important prerequisites to a balanced and healthy leisure lifestyle[24].

This real patient was advised and informed about the importance of recreation to his overall wellbeing and therapeutic effectiveness. He was assisted to identify his hobbies and advised to put it into practice as leisure activities. Attendants also informed about the impact of recreational therapy on patient outcome.

The importance of engaging in daily living activities was informed for the patient. But he was denied to perform these. The main complain was fatigue and dispnea. But after re-

peated discussion he was accepted it and became voluntary to perform these.

Occupational therapy is considered as rehabilitation therapy which can teach energy conservation and work simplification. This will allow patients to perform ADL as independently as possible without getting too short of breath or fatigued. This includes grooming, bathing, and dressing, toileting, meal preparation and any others that patients may want to engage in or hobbies that they want to resume[25].

Reflection

Cardiac rehabilitation can be used to ensure that all aspects of a patient's condition assessed systematically. Patient as well as his attendants was motivated to participate in comprehensive cardiac rehabilitation but due to fatigue and difficulty of breathing there was difficult time to implement all the selected interventions. In addition medication aspect of cardiac rehabilitation was not discussed briefly.

I believed that rehabilitation could be improved if a nurse consulted the patients at a follow-up discussion during or after the intensive plan as a supplement or alternative to the follow-up clinical assessment with other professions.

Coordinating the multi-factorial intervention has been very challenging. Therefore, in the future implementation of various methods is mandatory to carry out the complex tasks.

Evaluation

The rehabilitation care was supposed based on holistic approach by considered the patient as well as families need. Some of the implemented nursing interventions were reasonably effective that the patient experienced positive outcomes, but some of the problems were required long time to evaluate the outcome even some needs lifelong interventions.

Conclusion and recommendation

Cardiac rehabilitation is not a separate concern that can be addressed with a particular approach, hence multiple discipline ought to collaborate together to provide holistic care. Besides this, efficient rehabilitation needs willingness and involvement of family members, friends and to some extent the community as well. Since nurses have frequent contact with patients and family members, they are supposed to play the central roles on the care by coordinating different disciplines together.

Nursing implication

Patients with heart failure are most important customers of the health care system and therefore require close clinical management and encouragement to manage and identify their symptoms. The nurse is in an ideal position to do this as she/he has the ability to focus on the clinical needs of the patient and also the educational and supportive needs of the patient and their family. In order to decrease the frequency and cost of each patient's hospital admissions; it is essential that inpatient and outpatient care is effectively coordinated. One such strategy is the development and implementation of a nurse-directed multidisciplinary plan of care for patients diagnosed with heart failure. Care provided by nurses has been shown to improve outcomes for patients with chronic heart failure (CHF), significantly reducing the number of unplanned readmissions, length of hospital stay, hospital costs, and mortality.

Declarations

Consent to participate: The study participant was informed about the purpose, method, expected benefit, and risk of the study. She also informed about her full right not to participate or withdraw from the study at any time, and deciding not to participate had no impact on their services. Informed consent was obtained from study participant and anonymity was employed to maintained confidentiality.

Consent to publish: Not applicable.

Availability of data and material: The raw data would not be provided for the reason of protecting patients' confidentiality. But, the summary data are available in the main document.

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Abbreviations: ADL: Activity of daily living; BMC: Biomedical College; CAP: Community Acquired Pneumonia; CHF: Congestive/Chronic heart failure; CR: Cardiac Rehabilitation; CVD: Cardiovascular disease; HF: Heart failure; NYHA: New York Heart Association

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