

## Cardiac Rehabilitation - Nursing Perspective

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### ABSTRACT

To identify and understand nurse's role in caring of post cardiac patients, prevention of secondary attack and rehabilitation of such patients. Design used for this article is review method. Data sources are various medical books, medical surgical nursing books, cardiac nursing books and cardiology related journals, etc. The results can be found that nurses are integral part of a rehabilitation team and maintain prolonged interaction with patients. Usually physicians are only concentrating on medical management and there the nurses' role comes, it is very important to maintain the emotional aspect stable and give more emphasis on nutritional and rehabilitative aspect. Nurses are able to provide exercises nutritional education as well.

**Keywords:** Cardiac rehabilitation, Nursing

### INTRODUCTION

#### What is cardiac rehabilitation?

Until the 1950s, strict bed rest was thought to be the best medicine after a heart attack. Following discharge moderately stressful activity such as climbing stairs was discouraged for a year or more. The patient is to be guarded by day and night nursing and helped in every way to avoid voluntary movement or effort.

Programme that prepares a cardiac patient in restoring and maintaining his optimal physiological, psychological, vocational and social status with in the limitations imposed on him by the cardiac disease [1]. It makes the client from a complete stage of dependence to a stage of independence in his activities of daily living.

#### Indications of cardiac rehabilitation

- Post-MI
- Post-CABG
- Angina
- PCI
- Valve replacement or repair
- Heart transplant

### Who are involved?

#### Rehabilitation team:

- The physician
- The nurse in ICCU in ward and clinics
- Physical and occupational therapists
- Medical social worker
- Clinical psychologists
- Vocational and rehabilitation counsellor
- Dietician
- Family members

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**Phases:**

Phase I- Period of acute illness.

Phase II- Period of less acute stage

Phase III- Period of convalescence

Phase IV- Maintenance phase

**Things to be kept in mind before starting the rehabilitation programme [2]**

- Activity and rest should be balanced
- Heart rate of the patient should be monitored before and after the activity and the difference should not be more than 20 bpm between the two assessment
- In acute stage of illness the activities of the patient should be under strict supervision of nursing personnel
- Treadmill testing should be done by the patient before heavy work in order to identify the level of tolerance
- Patient should rest after meal and can resume activity minimum after 2 h.
- Teach the patient to check his own pulse and heart rate then only he will be able to identify any abnormality after discharge from the hospital
- Instruct the client to avoid bath immediately after exercise
- Instruct to avoid exercise in extreme heat or cold
- Advise the patient to call for help and to take rest by lying down whenever he feels faint or heart beat too fast or low
- Every exercise programme should be started with light warm up for 3 to 5 min and end up with cool down phase of 5-10 m.

**Phase 1 period of acute illness****First day (first step):**

- ❖ Orient the patient with date and time with various means (clock, calendar, etc.)
- ❖ Give self-introduction by each staff when approaching the patient and convey the need for admission in the ICCU
- ❖ Ensure complete bed rest of the patient
- ❖ Keep the patient in a comfortable position preferably fowlers position and provide him a good sleeping environment
- ❖ Change the position in every 2 h with great support to reduce the strain on his heart
- ❖ Observe the patient constantly and give reassurance

- ❖ Provide passive exercises
  - shoulder and elbow flexion and extension
  - hip and knee flexion and extension
  - foot rotation
  - dorsiflexion and plantar flexion

**Second day (second step):**

- ❖ Assist the patient in the morning routine
- ❖ Provide him a cardiac table to brush his teeth and wash face and hands
- ❖ Give him a bed bath
- ❖ All those activities which has done in the first day
- ❖ Demonstrate and encourage him deep breathing and coughing exercises

**Third day (third step):**

- ❖ Assist him in his daily routine (if necessary)
- ❖ Make the patient to sit next to the bed
- ❖ Use bed side commode foe defecation
- ❖ Help the patient to sit on the edge of bed with support and dangle his legs at least once daily
- ❖ Provide active range of motion

**Fourth day (fourth step):**

- ❖ All the activities done previously
- ❖ Help him to sit on the edge of the bed as long as his wish and instruct him to seek help when needed

**Fifth day (fifth step):**

- ❖ All the activities done previously
- ❖ Allow him to walk around the bed slowly
- ❖ Advise the patient to do active exercises of the hand and legs for 10 min three times in a day in bed

**Phase II (period of less acute stage)****Sixth step:**

- ❖ Can use the toilet nearby without locking it
- ❖ Instruct to do active exercise of upper and lower extremities in bed
- ❖ Allow him to walk few steps around the bed

**Seventh step:**

- ❖ Teach the patient about warm up exercises
  - Place each hands on its corresponding shoulder and rotate it for 10 min

- Raise the body on toe with back supported against a wall that is for 5 min
- Leg abduction and adduction for 5 min
- ❖ If the patient can afford warm up exercises allow him to walk 20-30 feet with assistance
- ❖ Stop the exercises gradually

**Eighth step:**

- ❖ Under super vision, allow him to take a bath (no too hot or cold water) and place the water near to him to avoid over stretching and bending
- ❖ After rest for some time allow him for walk 30-50 feet
- ❖ Advise him to do warm up exercises at beginning and end phase of exercises

**Ninth step:**

- ❖ Trunk twisting with hands on hips-5 times to each side
- ❖ Lateral bending with hands on hip-5 times to each side
- ❖ Slight knee bends-5 times
- ❖ Continue the previous day activities

**Tenth step:**

- ❖ Continue the exercises in seventh and ninth step
- ❖ May walk up to 100-150 feet

**Eleventh step:**

- ❖ Patient can continue the daily routine as before
- ❖ Continue all warm up exercises
- ❖ Teach client to raise his legs one after another with his back resting against a wall
- ❖ Encourage the patient to walk a distance of 200 feet

**Twelfth step:**

- ❖ Encourage the previous day routine
- ❖ Use wheel chair to take the patient to a chair away
- ❖ Help him to walk down 20 steps down with resting period after each 5 steps
- ❖ Should not allow him to climb up the steps

**Thirteenth step:**

- ❖ All routines as before
- ❖ Additionally allow him to climb up two steps after he has rested again make him to walk to the room.

**Fourteenth step:**

- ❖ All routines same as before and allow him to walk down 20 steps and climb up and down 10 steps with a resting period after every one or two steps

**Phase III (period of convalescence)**

- ❖ Set the goals of rehabilitation based on his age and capabilities of his heart to cope up with the stress and desired activity level

The points to be kept in mind

- Provide with an exercise data sheet which include his name, weight, ideal body weight, medication, type of exercise to be followed and target HR to be achieved
- Advise him to record HR before and after the exercise and how he feels before ,during and after the exercise
- Instruct the patient to report to the physician when he feels something unusual
- The patient can increase his speed and length of exercise in each day.at the end of 2 months the patient may walk up to 5 km in 1 h
- Advise him to avoid static exercises that may increase the work load of heart [1,3,4]

**Phase IV (maintenance phase)**

- ❖ After two months the patient can go to work place after consulting with the physician
- ❖ Advise the patient to prepare an exercise schedule that is not interfere with his normal working hours

Instruct him to do periodic consultation and check-up [1,3,4]

**Education**

Cardiac teaching can be organised for a patient or a group of patients including their family members. Teaching programme should mainly focus on modification of coronary risk factors and prevention of further heart attack [1,3,4].

Points should be included in the discussion are:

- Diet and body weight

Diet and body weight are inter related. BMI should be kept in between 18-25 kg/m<sup>2</sup>. Weight depends on activity and dietary intake. Therefore obese person can reduce body weight in two ways, consuming fewer calories than the body's energy requirement and exercise sufficiently to use more calories [5].

- Dietary guidelines may be as follows
  - ❖ Foods on plants origin
  - ❖ Low fat dairy products (skimmed milk)
  - ❖ Low amount of meat and poultry

- ❖ Reduce saturated fats and cholesterol (butter, ghee) and poly saturated fats (vegetable oils except coconut oil)
- ❖ Avoid fast foods
- ❖ Avoid concentrated sugars
- ❖ Eat meals slowly and chew well
- ❖ Check body weight every week

### Habits

- Cessation of cigarette smoking and alcohol drinking

Nicotine present in the tobacco increases heart rate, enhance coagulation of blood, damage endothelial lining of blood vessels and cause arrhythmias.

### STRESS MANAGEMENT

Prolonged stress increases the risk of Coronary Artery Disease (CAD). Anxiety, depression, irritability and sleeplessness are the external expression of stress. Stress can be avoided by adopting the following [6]:

- Develop interesting hobbies that can reduce stress
- Make healthy friendships
- Spend time for games
- Practice yoga
- Ventilate feelings with comfortable people
- Do regular exercises
- Maintain regular sleeping pattern

### PREVENTION OF ASSOCIATED DISEASE CONDITION

Hypertension and diabetes mellitus are most common conditions associated with CAD. It can be reduced associated disease conditions by above said practices most often.

### Follow up care

The patient should have regular physical check-up more over visit physician whenever he feels unusual things like chest pain not relieved by rest and nitro-glycerin tablets, sudden onset of dyspnea, palpitation, sweating or fainting attack. Whatever drugs the patient should be followed at home; he should be informed with the following information.

- The name of the drugs
- The dosage and time of intake
- Expected adverse drug reactions
- Expected effects of drugs

- The precautions to be taken in storage and administration of the drugs

### CONCLUSION

So as a nurse, they have to perform an integral part in the rehabilitation of cardiac patients. Mentally and physically they need support. Since nurses have the opportunity to continuous contact and interactions with the clients, they will get immense chances to lift up them into normal life. Only thing that has to keep in mind that all activities should be within the limit of a client.

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