

The Effectiveness of Active Cycle Breathing Technique on pulmonary functions and airway clearance in early Post Cardiac Surgery Patients.

NCT number (if available) : Not applicable

Date of the document: July 18, 2024

This study aims to explore the effect of active cycle breathing techniques on clinical outcomes in post cardiac surgery patients.

Research hypothesis:

-Post cardiac surgery patients who practice active breathing techniques exhibit an improvement in clinical outcomes compared to those who do not practice.

Research design:

A parallel randomized control trial research design will be utilized to conduct this study.

Study Setting:

This study was carried out at the cardiac ICUs.

A Purposive sample of 120 cardiac patients will be assigned in the current study from the previously mentioned settings.

The patients will be allocated into two equal groups, each with 60 patients.

The control group will be composed of 60 patients who were managed by routine cardiac care

The study group will consist of 60 patients who were exposed to an active cycle of breathing techniques

Inclusion criteria:

- Adult patients of both genders.
- After extubating for at least 6 hours
- Hemodynamic stable patients
- Able to communicate.

Exclusion criteria: Patient with complication postoperative surgery

Patient's demographic characteristics as patient's code, age, gender, marital status, education, and occupation.

Physiological and Airway Clearance Indicators Physiological and Airway Clearance Indicators such as Physiological parameters, Oxygenic parameters, spirometric parameters,

Study group: managed by the use of active cycle breathing techniques combined with routine physiotherapy.

- Each session of the active cycle breathing technique lasted for 10 to 20 minutes.

- The active cycle breathing technique was carried out for three days post extubating four sessions done daily.

Implementation of active cycle breathing technique

- Explain the steps of ACBT to the patient.

- The patient was placed in a semi-sitting position with her or his back straight, and instructions were given to the patient to do the following steps:

1 . Breathing control phase

- Hold the spirometer straight.

- Exhale, then seal your lips around the mouthpiece and inhale slowly and deeply into your mouth.

- The piston in the incentive spirometer's transparent chamber will rise when you inhale deeply.

- Hold your breath for 3 to 5 seconds after taking a deep breath.

- Remove the mouthpiece and slowly exhale. For a few seconds, until the piston descends to the bottom of the chamber, relax and breathe normally.

- To regain control of their breathing, the patient was told to do lengthy, slow expirations between 5 and 7 times.

2 . Thoracic expansion exercises

The patient was instructed to relax your upper chest.

- The patient was instructed to breathe slowly and deeply through the nose without using the accessory muscle.

- The patient was instructed to hold their breath initially for 3 to 4 seconds and gradually increase it to the maximum time.

Don't force the breath out; instead, softly exhale through pursed lips until your lungs are empty.

- Repeat the previous steps from 3to4 times.

3- Forced expiration technique (huffing)

- Patient was instructed to support the incision site by using a chest binder or keeping your hands over your incision.
- Cough twice as many times as they huffed two to three times.
- This step was repeated a minimum of two times and a maximum of three times in one session.